

**URBAN HEALTH GAMES.
COLLABORATIVE, EXPRESSIVE & REFLECTIVE.**

**Von der Fakultät Architektur und Stadtplanung der Universität Stuttgart
zur Erlangung der Würde eines
Doktor-Ingenieurs (Dr.-Ing.) genehmigte Abhandlung**

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Contents

Acknowledgements	5
Contents	6
Einleitung und Gedankengang	8
Introduction and Lines of Argumentation	25
I. Urban Health	38
Ideal Cities	38
More's "profitable games"	38
Leonardo's organic planning	42
The Sanitized City	47
Discussing the 19 th century raw material of urban reforms	47
Medical doctrines and small villages	51
The birth of the sanitary idea	54
Haussmann's Paris, flaneurism and a health-orientated stroller club	60
Obesogenic Environments	67
More Light and More Fresh Air	67
Garden Cities' moderate urbanism	70
Taut's "Dissolution of Cities"	72
Hilberseimer's deserted pedestrian levels	75
Today's Obesogenic Environments	80
II. Epidemic Entertainments	85
Health-conscious hedonists	85
Baden-Baden	88
Blackpool	93
Downtown Athletic Club	98
Theatre of Proof	100
Pasteurians' new agents of diseases	100
Persuasive experiments	102
Yersin - the bacteriological-flaneur	105
Popular Health Education	107
Hygiene pour tous	107
Meyer's ADGB school: The temporary education centre	110
Mobile Cinema	114
III. Prosthetic Architecture	118
Boxer and Engineer	118
Biological Apparatuses and Artificial Limb Objects	123
Modern Sports: Competition vs. Fair Play	128

Health machines and communication gadgets	134
Personally Tailored Solutions	137
Mobile, temporary, customized	138
Archigram's mobile gadgets and lifestyle games	142
Beyond Persuasive Technology	148
Performative Technology	156
Articulating design briefs and developing forms from inside out	156
Yona Friedman: Hardware, Software, Lifestyle choices	158
Bio Mapping	164
IV. Playing Health Games	170
Collaborative	171
Social rituals and digital games	172
Mobile health games	175
CryptoZoo	179
Expressive	183
Serious Games – Pledoyer for an informal context	183
Creative Mouldering - Hundertwasser's Mould Manifesto	187
Lefebvre's experimental utopias and life reform	189
Persuasive Games	195
Reflective	199
Stimulating revolutionary desires: Psycho-geography and urban drifts	200
Interactive and multi-modal maps	205
Ere Be Dragons	207
Conclusion and Outlook	212
Perspective 1: Do-it-Yourself approach to health games	213
Perspective 2: Using health games to indicate urban interventions	215
Appendix	217
Sources of Illustrations	217
Bibliography	221
Curriculum Vitae	230
List of publications	231

Einleitung und Gedankengang

Um nachhaltige Strategien zur Prävention und zum Management chronischer Krankheiten wie Adipositas oder Typ-2 Diabetes entwickeln zu können, fordern Mediziner innovative und transdisziplinäre Forschungsansätze. Sie begrüßen dabei Beiträge von Ernährungs- und Umweltexperten, Ingenieuren, Psychologen und Sportwissenschaftlern ebenso wie von Architekten und Stadtplanern.¹ Mittlerweile kooperieren Designer bereits mit Gesundheitsökonominnen um Grundrisse von Supermärkten und Kantinen zu entwerfen, die ihre Kunden zu besser informierten Ernährungsentscheidungen bewegen sollen. Public Health-Experten und Stadtplaner betonen unterdessen eine fußgängerfreundliche Quartiersplanung in einem Maß, das einzelne Architekten schon dazu veranlasst hat, Aufzüge diskret aus dem Blickfeld der Bürger verschwinden zu lassen, um so zum Treppensteigen zu animieren.² Mit dieser Dissertation werde ich mobile und kontextbezogene Computerspiele als eine spielerische und partizipatorische Form der Gesundheitsvorsorge vorstellen mit dem Ziel diese für die Stadtforschung nutzbar zu machen.

Digitale *Health Games* möchten unterhalten und gleichzeitig über gesündere Ernährung informieren oder zu mehr Bewegung motivieren. Eines der erfolgreichsten Produkte auf diesem Gebiet – Nintendos Wii Sports Serie – mag bislang vornehmlich im heimischen Wohnzimmer gespielt werden. Digitale Spiele laufen aber zunehmend auf mobilen Endgeräten und beginnen daher auf unterschiedliche Weise nicht nur mit ihrer kulturellen und sozialen, sondern auch mit ihrer topographischen Umgebung zu interagieren. Das iPhone Game *Monumental* beispielsweise lädt auf dem Bildschirm dazu ein, berühmte Sehenswürdigkeiten wie die New Yorker Freiheits-Statue zu ersteigen (Figure 35). Dabei misst das Smartphone durch eine Reihe eingebauter Sensoren, wie viele Treppenstufen die Spieler tatsächlich in ihrem Alltag bewältigen. Die Designer hoffen, dass die Spieler beginnen, ihre persönlichen Bestleistungen zu steigern und mit Freunden über Facebook zu wetteifern.³ Ähnliche Projekte untersuchen, wie sich neue orts- und kontextbezogene Medien für die Gesundheitsvorsorge nutzen lassen. Computer-Wissenschaftler wie Geri Gay nennen dabei die Architekturtheorie als eine bedeutende Inspirationsquelle, um beispielsweise zu lernen, wie soziale Interaktion in mobilen Health Games organisiert werden kann.⁴ Mit dieser Arbeit lege ich eine erste umfassendere Analyse darüber vor, wie Architektur- und Städtetheorie zur Gestaltung und Entwicklung von digitalen Health Games beitragen können.

Ich werde dabei zeigen, dass gerade die Kritik an der gesundheitsorientierten Architektur und Stadtplanung der klassischen Moderne eine fundierte Basis dafür liefert, um heutige Health

¹ Tim Townshend et al., 'Towards Transdisciplinary Approaches to Tackle Obesity', in *Obesogenic environments: complexities, perceptions, and objective measures*, herausg. von Amelia Lake, Tim G. Townshend und Seraphim Alvanides (Oxford: Blackwell, 2010), S. 11-20, S. 18-9.

² Nicolai Ouroussoff, 'Seeking a Desert Utopia: In Arabian sands, a green vision is lofty but socially questionable', *The New York Times - Articles selected in association with The Observer*, 3. Oktober 2010, S. 1, 4.

³ Me You Health, Inc., 'Monumental - Free Stair Climbing iPhone App', in *Creators of Daily Challenge - MeYou Health* <<http://www.meyouhealth.com/monumental/>> [aufgerufen am 3. März 2011]

⁴ Geri Gay, *Context-Aware Mobile Computing - Affordances of Space, Social Awareness, and Social Influence* (San Rafael, CA: Morgan & Claypool, 2009), S. 9-10.

Games in einem breiteren kulturellen und urbanen Rahmen zu diskutieren. Ich werde insbesondere die Forderungen nach mehr Flexibilität, Interaktivität und Nutzerbeteiligung im Designprozess moderner Architektur thematisieren, um diese für die Konzeption und die Entwicklung von digitalen Gesundheitsassistenten nutzbar zu machen. Die künstlerischen Ansätze und räumlichen Praktiken der Nachkriegsgeneration scheinen für mich ein breites Spektrum an Spiel-Ideen und Aktivitäten in städtischen Umfeld bereitzuhalten. Aufbauend auf meiner Analyse werde ich Urban Health Games als innovative und interdisziplinäre Konzepte der Gesundheitsvorsorge und des Gesundheitsmanagements präsentieren. Gerade durch eine Zusammenarbeit von Stadtforschern, Gesundheits-Experten und Game-Designern können attraktive Spielerlebnisse entwickelt werden, die gesundheitsrelevantes Verhalten in dessen alltäglichen Umfeld thematisieren. Im Umkehrschluss werde ich zeigen, wie Urban Health Games in besonderer Weise partizipatorische Planungsprozesse ergänzen können, indem sie es Nutzern ermöglichen, durch die im Spielverlauf gesammelten Daten und Erfahrungen auf gesundheitsfördernde bauliche Interventionen hinzuweisen.

Um diese Thesen zu unterstreichen, werde ich im Folgenden räumliche Strategien zur öffentlichen Gesundheitsvorsorge untersuchen. Dies wird mit einem besonderen Fokus auf der Kritik an der funktionalistischen und gesundheitsorientierten Architektur der ersten Hälfte des 20. Jahrhundert geschehen. "Organiker" wie Hugo Häring kreideten den geometrischen Gebäuden eines Le Corbusier an, die Alltags-Handlungen ihrer Bewohner durch rein rationale und idealisierende Formen einzuschränken. Im Gegensatz dazu forderte Häring Architekten dazu auf, einen lebensbejahenden, flexiblen und ergebnisoffenen Designprozess zu entwickeln.⁵ Ich werde diesem Ansatz bis zu den temporären und maßgeschneiderten Architekturen der Nachkriegsplaner wie Archigram und Yona Friedman folgen. Letzterer tritt beispielsweise dafür ein, Nutzer mit den notwendigen Informationen zu versorgen, um eigene Lebensstil-Entscheidungen treffen zu können. Aufbauend auf dieser Denkrichtung werde ich demonstrieren, wie die heutige performative Technologie dazu beiträgt, Nutzer über den Zusammenhang von Umwelteinflüssen, gesundheitsrelevantem Verhalten und gemessenen Vitalparametern zu informieren.

Als eine vielversprechende Perspektive werde ich schließlich auf sogenannte "Serious Games" - also digitale Spiele mit ernsthaftem Anliegen wie Lernen oder Gesundheit - zu sprechen kommen. Diese Anwendungen scheinen mühelos Nutzer, mobile Endgeräte, Vitalparameter und verschiedene Orte miteinander zu vernetzen. Ich werde ausgewählte Gamedesign-Theorien untersuchen, um diese zur oben genannten Städtetheorie in Bezug zu stellen. Aus meiner Sicht können kreativere Formen des Spielens für die Gesundheit u.a. dadurch entwickelt werden, wenn man Health Games als eine urbane Praxis versteht, durch die sich Nutzer gebauten Stadtraum temporär aneignen können. Anhand von aktuellen Beispielen werde ich zeigen, wie digitale Health Games bereits von ihrem urbanen Umfeld profitieren und betonen inwiefern sich dieser Prozess mithilfe architekturtheoretischer

⁵ Hugo Häring, 'wege zur form', in *Hugo Häring: Schriften, Entwürfe, Bauten*, herausg. von Jürgen Joedicke und Heinrich Lauterbach, 2. Auflage (Stuttgart: Karl Krämer, 1965; 2001), S. 16-17, (zuerst veröffentlicht in *Die Form*, n.1, Oktober 1925).

Ansätze besser erklären lässt. Dabei werde ich die Kategorien des kollaborativen, expressiven und reflexiven Spielens von digitalen Health Games in der Stadt vorstellen.

Im Folgenden möchte ich auf den akademischen Kontext dieses Promotionsprojektes eingehen, das sich in einem Bereich der Architekturtheorie bewegt, der sich mit dem Verhältnis der gebauten Umwelt zum Körper und dessen Wohlbefinden beschäftigt. Während die wichtige Rolle der Medizin für die Entwicklung der modernen Architektur ausführlich behandelt scheint, betrete ich Neuland, indem ich die Referenzen Serious Games und mobile Kommunikationstechnologie für diesen Diskurs nutzbar machen möchte. Viele Wissenschaftler haben beobachtet, wie gerade die Architekten der klassischen Moderne ihre Konzepte auf neuesten Ergebnissen der Gesundheitsforschung aufgebaut haben. Beatriz Colomina z.B. beobachtet eine Art Gesundheits-Fanatismus bei Le Corbusier,⁶ während Fritz Neumeyer allgemein die Verschränkung von dogmatischer Körperkultur und Baupraxis in der klassischen Moderne beschreibt.⁷ Kritiker der funktionalistischen Stadt scheinen sich indes einig, mehr Teilhabe und soziale Interaktion im öffentlichen Raum einzufordern. Thomas Sieverts stellt dies in seinem Artikel über Hilberseimers Pläne für eine Hochhausstadt sehr anschaulich dar. Was er als eine "aufgeräumte Stadt" bezeichnet würde zwar angemessen auf die gesundheitlichen Herausforderungen seiner Zeit reagieren, jedoch auch einen zunehmend automatisierten und privaten Charakter des öffentlichen Raumes antizipieren.⁸ Die Forderung nach Nutzerpartizipation im Gestaltungsprozess erscheint mir grundlegend zu sein, auch und vielleicht gerade für die Entwicklung von allgegenwärtigen, computergestützten Gesundheitsassistenten.

Jürgen Joedicke, Gründungs-Direktor des Instituts *Grundlagen Moderner Architektur und Entwerfen* (IGMA) der Universität Stuttgart hat darauf hingewiesen, dass jede Generation von Architekten wie Stadtnutzern neu formulieren müsse, auf welche Bedürfnisse zu reagieren sei. Er hat angezeigt, wie insbesondere das "organhafte Bauen" zu dieser Artikulation mit ihren Konzepten und ergebnisoffenen Designprozessen beitragen könne.⁹ Gerd de Bruyn, gegenwärtiger Leiter des IGMA und betreuender Professor dieser Arbeit, hat auf die fragwürdigen Folgen einer „Diktatur der Philanthropen“ hingewiesen, die aus Konzepten der modernen Stadtplanung hervorgehe, die dem utopischem Denken und oft lebensreformerischen Ansatz geschuldet sind.¹⁰ Er fordert einen mutigen und im besten Sinne "amateurhaften" Architekten dazu auf, die Grenzen von wissenschaftlichen Disziplinen zu ignorieren, um – mit Blick auf den Entwurf – der Architekturtheorie und Praxis neues und

⁶ Beatriz Colomina, 'The Medical Body in Modern Architecture', in *Anybody*, herausg. von Cynthia Davidson (New York: Anyone Corporation, 1997), S. 228-39, S. 232.

⁷ Fritz Neumeyer, 'Der neue Mensch. Körperbau und Baukörper in der Moderne', in *Moderne Architektur in Deutschland 1900-1950 - Expressionismus und Neue Sachlichkeit*, herausg. von Vittorio Magnago Lampugnani und Romana Schneider (Stuttgart: Hatje, 1994), S.15-32.

⁸ Thomas Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', in *Architektur im 20. Jahrhundert - Deutschland*, herausg. von Romana Schneider, Winfried Nerdinger und Wilfried Wang (München: Prestel, 2000), S. 12-20.

⁹ Jürgen Joedicke, 'Vorwort zur zweiten Auflage', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke und Heinrich Lauterbach, 2. Auflage (Stuttgart: Karl Krämer, 2001).

¹⁰ Gerd de Bruyn, *Die Diktatur der Philanthropen - Entwicklung der Stadtplanung aus dem utopischen Denken* (Braunschweig / Wiesbaden: Verlag Vieweg, 1996).

relevantes Wissen einzuverleiben.¹¹ Durch einen solchen transdisziplinären Ansatz hoffe ich, ebenfalls einem Dilemma zu begegnen, mit dem sich jeder Gestalter mit einem sozialen Anliegen auseinandersetzen muss: Ich fordere dazu auf aktuelle Forschungen und Expertenwissen aus der Präventionsmedizin in architektonische Projekte einzubeziehen, dabei aber das Bedürfnis nach sozialem Austausch, Unterhaltung und Spiel nicht aus den Augen zu verlieren.

Die aktuellen Forschungen an sogenannten “Obesogenic Environments” – den räumlichen und sozialen Ursachen der massenhaften Verbreitung krankhaften Übergewichtes – warnen vor jeder Form von Determinismus. Angesichts von Krankheiten mit multiplen Ursachen lässt sich von einem gesundheitsorientiert gebautem Wohnumfeld nicht automatisch auf gesündere Bewohner schließen. Jennifer Robertson-Wilson und Billie Giles-Cortis Arbeit macht mich darauf aufmerksam, dass, bevor man daran denken kann, erste Einsichten in den Zusammenhang von Zivilisationskrankheiten und gebauter Umwelt in Architektur und Städtebau umzusetzen, weitaus mehr profunde und interdisziplinär ausgelegte Grundlagenforschung notwendig sei.¹² Es mag daher überraschen, dass die gesundheitsorientierte Stadtforschung erst sehr langsam damit beginnt, Multimediatechnologien als Werkzeuge zu begreifen, durch die gesundheitsrelevante Daten zu Umwelteinflüssen und Verhalten gesammelt werden können. Erst wenige Projekte begreifen Medien auch als Chance, ein bestimmtes Verhalten zu stimulieren. Nach meinen Recherchen beschränken sich ausführliche Publikationen zu diesem Thema auf die traditionellen Gestaltungs-Mittel der “gebauten Umwelt”.¹³ Mit dieser Arbeit möchte ich daher auch für eine stärkere Verschränkung von gebauter Umwelt und Multimediatechnologien innerhalb der gesundheitsorientierten Stadtforschung eintreten.

Ich begrüße daher Kooperationen zwischen Stadtplanern und Computerwissenschaftlern wie die der Universität Eindhoven, die sich zusammenschließen, um einen digitalen Gesundheitsassistenten zu entwickeln. Diese mobile Applikation gibt Tipps zu gesundheitsförderlichen Aktivitäten wie Spazierengehen oder Radfahren und untersucht dabei, welche Rolle das anstehende Tagesprogramm, das Wetter, die weitere Umgebung und der spezifische Ort im Entscheidungsprozess der Nutzer spielen, diese Vorschläge tatsächlich umzusetzen.¹⁴ Viele dieser ersten Projekte scheinen einen pragmatischen Ansatz gegenüber modernen Kommunikationstechnologien anzuwenden. Zumindest verwenden sie wenig Zeit darauf, über die räumlichen, kulturellen und sozialen Konsequenzen ihrer Applikationen zu

¹¹ Gerd de Bruyn, 'Undisziplinierte Architekturtheorie(n)', *Wolkenkuckucksheim - Cloud-Cuckoo-Land - Vozdushnyi zamok*, 9 (2005).

¹² Jennifer Robertson-Wilson und Billie Giles-Corti, 'Walkability, Neighbourhood Design and Obesity', in *Obesogenic environments: complexities, perceptions, and objective measures*, herausg. von Amelia Lake, Tim G. Townshend und Seraphim Alvanides (Oxford: Blackwell, 2010), S. 21-40, S. 28-9.

¹³ Sehen Sie hierzu Lawrence D. Frank, Peter E. Engelke und Thomas L. Schmid, *Health and Community Design: The Impact of the Built Environment on Physical Activity* (Washington, DC: Island Press, 2003).

¹⁴ Yuzhong Lin et al., 'Motivate: Towards Context-Aware Recommendation Mobile System for Healthy Living', in *Proceedings of the 5th International ICST Conference on Pervasive Computing Technologies for Healthcare* (Dublin: University Collgege Dublin, 2011), S. 1-4.

reflektieren. Die Ausstellung *The Medicalization of Architecture: Imperfect Health* mag daher einen Nerv treffen, wenn deren Kuratoren Architekten davor warnen, nicht einfach auf den Zug des rasch expandierenden Marktes für digitale Gesundheitstechnologien aufzuspringen. Sie fordern provokativ eine „Ent-Medizinalisierung der Architektur“ und rufen dazu auf, sich auf die ureigenen Kompetenzen der Architektur für eine ganzheitliche Gesundheitsvorsorge zu besinnen.¹⁵ Ich bin überzeugt, dass gerade die genaue Betrachtung der selbst-kritischeren Stimmen einer ausgesprochen gesundheitsorientierten Epoche wie der klassischen Moderne dazu beitragen wird, spielerische und zugleich nachhaltige Konzepte für heutige IT-gestützte Gesundheitsservices zu erarbeiten. Gleichzeitig möchte ich betonen, dass zur Entwicklung und Umsetzung dieser Konzepte eine enge Kooperation mit anderen Disziplinen unerlässlich ist.

Ich nehme daher mit Freude ein steigendes Interesse an *Urban Games* durch den Städtebau und die Stadtforschung war.¹⁶ In der Mensch-Computer-Interaktion nennt man diese Art der digitalen Spiele oft *Mixed Reality Games* bzw. *Pervasive Games*, da sie virtuelle Erzählungen mit unterschiedlichen Plattformen, Medien und Orten kombinieren.¹⁷ Erste Versuche, digitale Spiele für die Profession der Architekten zugänglich zu machen, haben einen möglichst umfassenden Ansatz verfolgt. Hier wurden Perspektiven von Spiele-Designern auf die Stadt versammelt, um räumliche und soziale Implikationen von digitalen Spielen aufzuzeigen.¹⁸ Eine umfassende Untersuchung aus der Sicht des Spieledesigners und Forschers Steffen P. Walz hat viele mögliche Verschränkungen und Synergien von digitalen Spielen und alltäglichen Spielorten herausgearbeitet. Wie die meisten Arbeiten in diesem Feld konzentriert er sich allerdings auf Spiele mit reinem Unterhaltungscharakter. „Serious Games“ schließt Walz aus diesem Bereich seiner Betrachtung aus Gründen der Praktikabilität aus.¹⁹ Auch wenn bereits über einzelne Experimente mit Pervasive Games zur Simulation und zur Nutzerbeteiligung an Planungsprozessen berichtet worden ist,²⁰ bin ich während meiner Forschungen auf kein Projekt gestoßen, das sich aus der Perspektive der Architektur und Stadtplanung mit digitalen Health Games beschäftigt.

Christian Nolds *Bio-Mapping* scheint mir daher ein wichtiges Referenzprojekt zu sein. Er bedient sich unterschiedlichster Sensortechnologien, um Nutzer über den Zusammenhang von gemessenen Körperdaten und Bewegungsaufzeichnungen zu informieren mit dem Ziel,

¹⁵ Mirko Zardini und Giovanna Borasi (Ausstellungs-Kuratoren), 'Imperfect Health: The medicalization of Architecture', in Art Agenda <<http://www.art-agenda.com/shows/imperfect-health-the-medicalization-of-architecture-at-cca-montreal/>> [aufgerufen am 20. November 2011]

¹⁶ Sehen Sie hierzu Larissa Hjorth, 'Urban Gaming - Stadt als transmedialer Spielplatz', *StadtBauwelt*, 24. Juni 2011, S. 44-9. und Sebastian Quack, 'Urban Games?', ebd., S. 50-1.

¹⁷ Sehen Sie hierzu u.a. *Pervasive Games - Theory and Design*, herausg. von Markus Montola, Jaakko Stenros und Annika Waern (London: Morgan Kaufmann, 2009).

¹⁸ *Space Time Play - Computer Games, Architecture and Urbanism: The next Level*, herausg. von Steffen P. Walz, Friedrich von Borries und Matthias Böttger (Basel; Boston: Birkhäuser, 2007).

¹⁹ Steffen P. Walz, *Toward a Ludic Architecture: The Space of Play and Games* (Pittsburgh, PA: ETC Press, 2010), S. 129.

²⁰ Friedrich von Borries, Matthias Böttger und Walz Steffen P., 'Ausweitung der Schiesszone - Computerspiele im urbanen Raum', *archithese*, 2006, S. 40-3.

gemeinsam mit Experten potentielle räumliche Interventionen zu identifizieren.²¹ Aus seinem künstlerisch-aktivistischen Ansatz heraus entwickelt Nold damit ein Planungswerkzeug, das sich in meinen Augen der gesundheitsorientierten Stadtplanung in Hinsicht auf chronische Krankheiten geradezu anbietet. Ian Bogost hat den Begriff des Videogames in den Zusammenhang des politischen Aktivismus gestellt. Er zeigt seine „Persuasive Games“ – die sich vielleicht am ehesten mit dem Begriff der rhetorischen Spiele übersetzen ließen – in Bereichen wie der Politik, Werbung und Bildung im Einsatz. Er betont jedoch, dass das Funktionieren von Persuasive Games für weitere Bereiche wie der Gesundheitsversorgung noch erwiesen werden müsse.²² Tatsächlich sind digitale Health Games eine stark wachsende Disziplin in Forschung und Wirtschaft. Debra Lieberman hat auf diverse Fachbücher und wissenschaftliche Artikel zu diesem Thema in den letzten Jahren hingewiesen, die in Ergänzung zu vielen internationalen Fachtagungen erschienen sind.²³ Ein erstes Projekt des stark geförderten Health Games Research Projektes in den USA untersucht derweil auch die spezifischen Möglichkeiten von mobilen und kontextbezogenen Technologien.²⁴ Während mobile Health Games und erste Urban Games mit einer Gesundheitsagenda die Potentiale der Interaktion mit dem Stadtraum erproben, werden diese bisher ausschließlich in den Disziplinen der Mensch-Computer-Interaktion, der Gesundheitsvorsorge und der Telemedizin verhandelt. Mit dieser Arbeit lege ich eine erste eingehende Untersuchung von digitalen Health Games aus der Sicht der Architektur und Stadtplanung vor.

Nachdem ich die verschiedenen akademischen Disziplinen beschrieben habe, in der sich die vorliegende Arbeit bewegt, möchte ich auf die angewandte Methodik eingehen. Während der Studien zu diesem Projekt habe ich die Chance gehabt, mich mit Wissenschaftlern und Experten aus den oben beschriebenen Fachrichtungen intensiv auszutauschen. Dies geschah vor dem Hintergrund, die wissenschaftlichen und technischen Grundlagen kennenzulernen, aber auch, um in eine gemeinsame Sprache der beteiligten Disziplinen einsteigen und diese weiterentwickeln zu können. Dieser praxisorientierte Ansatz hat dabei meine Studien zur Architekturtheorie befruchtend ergänzt. In einem Interview am Stuttgarter Olgahospital konnte ich z.B. Diabetes-Patienten zu den Orten befragen, die für ihr tägliches Therapiemanagement von Bedeutung sind. Die Antworten zeigten mögliche Schwierigkeiten für ein mobiles Health Game auf, dessen Ziel es ist, die Blutzuckermessung zu einem festen Bestandteil der Spielaktivitäten zu machen. Die Kommentare verweisen dabei auf pragmatische Erwägungen zu denkbaren Spielorten wie der Schule oder dem öffentlichen Nahverkehr, aber eben auch auf soziale Aspekte bestimmter räumlicher Umgebungen.²⁵ Als

²¹ Christian Nold, 'Introduction: Emotional Cartography - Technologies of the Self', in *Emotional Cartography: Technologies of the Self*, herausg. von Christian Nold (London: Creative Commons, 2009), S. 3-14.

²² Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), S. 64.

²³ Debra A. Lieberman, 'Designing Serious Games for Learning and Health in Informal and Formal Settings', in *Serious Games - Mechanisms and Effects*, herausg. von Ute Ritterfeld, Michael Cody und Peter Vorderer (New York; London: Routledge, 2009), S. 117-30, S. 118.

²⁴ Health Game Research, 'Health Games Research - About us', in *Health Games Research - Advancing Effectiveness of Interactive Games for Health* <<http://www.healthgamesresearch.org/about-us>> [aufgerufen am 21. Februar 2010]

²⁵ Martin Knöll, "'On the top of high towers.'" - Discussing locations in a mobile health game for

Gaststudent am *Lansdown Centre for Electronic Arts* der Middlesex University in London habe ich die Chance gehabt, Einblicke in die Gestaltung und technische Entwicklung von ortsbezogenen Medien zu gewinnen. Ich konnte hier studieren, wie aktuelle Beispiele von Health Games unter Zuhilfenahme von Sensortechnologien von bestimmten sozialen und topographischen Qualitäten unterschiedlicher Orte profitieren. In ersten Veröffentlichungen in den Bereichen des Serious Gaming, der Telemedizin und der Sportwissenschaften konnte ich diese Forschungen dokumentieren und dabei insbesondere meinen Standpunkt aus Sicht der Stadtforschung heraus schärfen.

Die von mir in der vorliegenden Arbeit untersuchte Literatur zur Architektur und Stadtplanung konzentriert sich auf den Zeitraum von 1920 bis 1970. Im Gegensatz dazu, stammt die Literatur über Obesogenic Environments, mobiler Kommunikationstechnologie und digitalen Health Games fast ausschließlich aus den 2000er Jahren. Mein erklärtes Ziel, dieses Wissen für die eigene wissenschaftliche Arbeit nutzbar zu machen, hat mich die Chancen und Grenzen eines Promotionsprojektes an der Fakultät für Architektur und Stadtplanung erkennen lassen. Als ausgebildeter Architekt kann ich die Entwicklungen in den Gesundheitswissenschaften, den Kommunikations- und Spiele-Technologien nur zu einem gewissen Grad verstehen und kommentieren. Ich habe daher bewusst einen Zeitraum aus der Architekturgeschichte gewählt, der wie keine andere Epoche eng mit medizinischer Forschung verbunden ist und nach wie vor großen Einfluss auf unsere Städte ausübt. Diese Epoche erscheint aber auch in "sicherem" Abstand, um deren Aussagen für die heutigen Herausforderungen sichten und neu bewerten zu können. Auf diesem kulturhistorischen Ansatz in den ersten Kapiteln aufbauend, werde ich in den späteren Kapiteln dazu ansetzen, Urban Health Games als ein innovatives Konzept der Stadtplanung zu entwickeln. Hierzu möchte ich im Folgenden auf meine Argumentation und meinen Gedankengang näher eingehen.

Gedankengang

Die vorliegende Dissertation ist in vier Kapitel untergliedert, die jeweils die oben beschriebene Themenstellung bearbeiten. In Kapitel I analysiere ich die sozialen und kulturellen Implikationen gesundheitsorientierter Architektur und Stadtplanung, um daraus Forderungen an die heutige Forschung an Obesogenic Environments abzuleiten. Kapitel II präsentiert Strategien der Gesundheitsvorsorge des frühen 20. Jahrhundert, die sich in meinen Augen zwischen Urbanismus und Großstadtfeindlichkeit sowie zwischen gebauter und temporärer Architekturen bewegen. In Kapitel III untersuche ich das Prothesen- und Apparatenhafte der modernen Architektur. Dabei stelle ich heraus, wie heutige orts- und kontextbezogene Gesundheitsassistenten nicht nur auf individuelles Verhalten, sondern auch auf Umwelteinflüsse aufmerksam machen sollten. Auf dieser Basis betrachte ich in Kapitel IV die Art des Spielens von digitalen Health Games in der Stadt, um mit einem Ausblick zu schließen, wie Urban Health Games in Zukunft entwickelt werden können und wie sie sogar Planungsprozesse ergänzen können.

diabetics', in *Proceedings of the IADIS International Conference Game and Entertainment Technologies 2010*, herausg. von Katherine Blashki (Freiburg: IADIS Press, 2010), S. 61-8.

Kapitel I „Urban Health“ vergleicht zunächst zwei Idealstadtentwürfe aus der Renaissance. Ich zeige wie Thomas Morus in seinem Roman *Utopia* kurzerhand davon ausgeht, die Bewohner würden „profitable Spiele“ allen anderen Spielen vorziehen, um dabei zu lernen und sich fit zu halten.²⁶ Anhand seiner Idee eines Gartenwettbewerbes werde ich zeigen, wie Morus ein erstes Urban Game antizipiert, wohl aber eine wichtige Zutat unterschlägt: Die freiwillige Teilnahme seiner Amaurothener. Im Gegenzug werde ich zeigen, wie Leonardo da Vinci ebenfalls auf die katastrophalen Zustände der Städte in der frühen Neuzeit reagiert, indem er eine erste städtische Infrastruktur vorstellt. In seiner „Stadt der zwei Ebenen“ ersinnt da Vinci ein ausgefeiltes System von unterirdischen Transport-, Frisch- und Abwasserkanälen und einer aufgeständerten, sonnigen, sauberen und von jeglichem Wagenverkehr befreiten Fußgängerebene. Während Luigi Firpo die rein rationale Herangehensweise da Vincis als Stadtplaner lobt,²⁷ werde ich den organhaften Charakter in da Vincis Designprozessen hervorheben. Ich werde in diesem Prolog herausstellen, wie Morus eine neue soziale Ordnung durch Architektur, Stadtplanung und Serious Games ersinnt, währenddessen da Vincis gesundheitsmotivierte Stadtreform als einen Prozess begreift, bei dem durch Experimente und Pilotprojekte eine schrittweise Erneuerung eintreten soll.

Anschließend werde ich näher auf die enge Verbindung zwischen öffentlicher Gesundheitsprävention und den Ursprüngen der modernen wissenschaftlichen Stadtplanung im frühen 19. Jahrhundert eingehen. Gerade Friedrich Engels hinterließ eine profunde Dokumentation der unmenschlichen Zustände der frühen Industriestädte wie Manchester und London. Er machte darauf aufmerksam, dass sowohl die unhygienischen Verhältnisse in den überfüllten Arbeitervierteln als auch die daraus resultierenden Krankheiten Symptome des wirtschaftlichen Systems gewesen sind.²⁸ Ich folge Christopher Hamlin, der beobachtet, wie die ersten Gesundheitsreformer in Großbritannien wie Edwin Chadwick die ursprüngliche Diskussion um eine ganze Bandbreite von möglichen sozialen und politischen Reformen letztendlich auf technologische und technokratische Eingriffe reduzierten.²⁹ Obwohl Engels sehr wohl die Vielfalt an Ursachen der miserablen gesundheitlichen Lage der Arbeiter erkannt hatte, konzentrierte er sich in seinem Report gleichwohl auf die sanitären Umstände. Er trug damit wesentlich zur späteren Dämonisierung der Großstadt durch die Architekten der klassischen Moderne bei. Diese entwickelten schließlich hauptsächlich antiurbane Visionen für eine friedlichere, gerechtere und „gesündere“ Gesellschaft.

²⁶ Thomas More, 'Utopia', in *Three Early Modern Utopias: Utopia, New Atlantis and The Isle of Pines*, herausg. von Susan Bruce, übersetzt von Ralph Robinson (Oxford: University Press, 1999), S. 1-148, S. 54-9, (zuerst veröffentlicht in Latein, Louvain, 1516).

²⁷ Luigi Firpo, 'Leonardo as Urban Planner', in *Leonardo da Vinci - Engineer and Architect*, herausg. von Paolo Galluzzi (Montreal: Museum of Fine Arts, 1987), S. 287-301, S. 301.

²⁸ Friedrich Engels, *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970).

²⁹ Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain 1800 - 1854* (Cambridge: University Press, 1998), S. 13.

Andere Stimmen der Modernen Architekten wie z.B. Sigfried Giedion, zeigen sich begeistert von den Reformen des Stadtpräfekten Haussmann, der unter dem Regime Napoleon III. in der zweiten Hälfte des 19. Jahrhunderts Paris transformierte.³⁰ Leonardo Benevolo zeigt, dass Haussmann urbane Infrastrukturen wie Parks, Kanalisation und Frischwasserversorgung einführte und dabei mit breiten, sauberen Straßen die Slums des alten Paris durchtrennte. Ich werde hervorheben, dass Haussmann weniger die Gesundheit der Menschen im Auge hatte, als den Versuch, nach den Revolten von 1815, 1830 und 1848 die Kontrolle über die Innenstädte wiederzuerlangen.³¹ Haussmanns Paris dient mir daher als ein Prototyp einer „hygienisierten Stadt“, in der sich die Ambivalenz der frühen Public Health Bewegung verdeutlichen lässt. Auf der einen Seite haben die Maßnahmen den Zugang zu Gesundheitstechnologien erleichtert. Auf der anderen Seite haben die Bau- und Hygienerichtlinien – wie die selbstauferlegte bürgerliche Diätetik – damit begonnen, das Alltagsleben der Menschen wesentlich zu strukturieren. Mit dieser Gegenüberstellung unterstreiche ich Forderungen mit der Forschung an räumlichen Ursachen wie baulichen Maßnahmen gegen Zivilisationskrankheiten helfen politische Reformen zu ergänzen und zu identifizieren - diese aber keinesfalls ersetzen zu wollen.

Marianne Rodenstein zeigt auf, wie schnell die physiologischen Experimente eines Ludwig Pettenkofers in die Bauvorschriften und Pamphlete des im späten 19. Jahrhunderts entstehenden „wissenschaftlichen“ Städtebaus eingeflossen sind. In diesen forderte Reinhard Baumeister mit vielen seiner Kollegen „Mehr Licht und Mehr Luft“ und dies, wie Rodenstein betont, aus höchst unterschiedlichen politischen Motiven.³² Nach der Katastrophe des ersten Weltkrieges forderten Architekten wie Bruno Taut die „Auflösung der Städte“.³³ Ich werde mich darauf konzentrieren, zu zeigen, wie deren Visionen von extrem dicht besiedelten (Hilberseimer) oder extrem zersiedelten Gemeinschaften (Taut) automatisch für gesundheitsfördernd erklärt worden sind. Häring bezeichnete Hilberseimers „Schema einer Hochausstadt“ bereits 1926 als eine zwar „blitzsaubere Denk- und Willensleistung“, die aber doch eine fragwürdige ästhetische Qualität und kein erkennbares politisches Anliegen aufweise.³⁴ Ich werde dieses Kapitel damit beschließen zu zeigen, wie die heutige Forschung Faktoren wie urbane Dichte und Fußgängerfreundlichkeit mit alltäglicher Bewegung und gar der Prävalenz krankhaft Übergewichtiger in Zusammenhang bringt. Die angesprochenen gesundheitsorientierten Forderungen der modernen Architekten nach durchgrüntem und dezentralisierten Städten müssen in diesem Licht neu bewertet werden. Sie scheinen

³⁰ Sigfried Giedion, *Space, Time and Architecture - the growth of a new generation* (Cambridge, MA: Harvard University Press, 1941), S. 760-73.

³¹ Leonardo Benevolo, *The origins of modern town planning* (London: Routledge, 1967), S. 134-5.

³² Marianne Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', in *Macht Stadt krank? Vom Umgang mit Gesundheit und Krankheit*, herausg. von Dittmar Machule, Olaf Mischer und Arnold Sywottek (Hamburg: Dölling & Galitz, 1996), S. 19-31, S. 20.

³³ Bruno Taut, *Die Auflösung der Städte oder Die Erde eine gute Wohnung oder auch: Der Weg zur Alpen Architektur* (Hagen: Folkwang, 1920).

³⁴ Hugo Häring, 'zwei städte: eine physiognomische studie, zugleich ein beitrag zur problematik des städtebaus', in *Hugo Häring: Schriften, Entwürfe, Bauten*, herausg. von Jürgen Joedicke and Heinrich Lauterbach, 2. Auflage (Stuttgart: Karl Krämer, 2001), S. 20-2, (zuerst veröffentlicht in Die Form, n. 8, Mai 1926).

ironischerweise sogar zu der Entstehung heutiger Krankheiten beigetragen zu haben.³⁵ Ich werde einen der ersten modernen Stadtentwürfe, die Gartenstädte des Engländers Ebenezer Howards als ein Schema für einen moderaten Urbanismus hervorheben. Howard bestand auf öffentliche Einrichtungen, die zu Fuß erreichbar sein müssten und betonte die kulturelle Dichte seiner Siedlungen. Es sind diese flexiblen und für Entwicklung offenen Planungsansätze, die gerade für gesundheitsorientierte Stadtplanung von großer Bedeutung scheinen.

Kapitel II „Epidemic Entertainments“ unterstreicht explizit urbane Strategien der Gesundheitsvorsorge des frühen 20. Jahrhunderts. Mein Ausgangspunkt sind dabei die Modebäder der zweiten Hälfte des 19. Jahrhunderts, in denen moderne Gesundheitstechnologien und die sich entwickelnde Unterhaltungsindustrie aufeinander trafen. Gerade in Baden-Baden haben Gesundheitspflege und Glückspiel nebeneinander existiert, um den Badegästen eine perfekte Mischung aus städtischem Vergnügen und kultivierter Natur zu bieten.³⁶ Auf den vier Kategorien des Spielens von Roger Caillois aufbauend,³⁷ werde ich feststellen, dass hier insbesondere Aspekte des Spielens wie Zufall, Rausch und Maskierung überwiegen. Während in traditionellen Sportarten und den heutigen digitalen Spielen oft der Wettkampf hervorgehoben wird, scheint dieser in Modebädern eine untergeordnete Rolle zu spielen. Rem Koolhaas hat gezeigt, wie die Amüsier-Parks von Coney Island als Labor des Hyper-Urbanismus des nahegelegenen Manhattan gesehen werden können.³⁸ In Anlehnung daran werde ich die Badeorte in enger Verbindung mit einem gesundheitsorientierten Urbanismus beschreiben, die allerdings durch ein breit gefächertes Erlebnissangebot Hedonisten wie Gesundheitsbewusste gleichermaßen ansprechen.

Bruno Latours Analysen der Bakteriologie im letzten Drittel des 19. Jahrhunderts zeigen mir, wie Forschung, mobile Labortechnik und moderne Massenmedien beginnen, sich miteinander zu verflechten. Latour beschreibt als „Theatre of Proof“, wie Pasteur und seine Schüler mobile Labortechnik einsetzen, um zwischen ihren Feldversuchen und dem Zentrallabor in Paris zu pendeln. Schließlich würden sie mit dem gefundenen Impfstoff zurückkehren, um die Experimente vor leicht manipulierter Kulisse und weiter Öffentlichkeit eindrucksvoll zu wiederholen.³⁹ Ich werde hervorheben, wie die Herangehensweise der Bakteriologen in Form der Mikroben neue Agenten von Krankheiten ins Visier nimmt, die räumliche ebenso wie soziale Grenzen zu überwinden scheinen. Mobile Labortechnik wie neue Visualisierungstechniken tragen meiner Meinung nach dazu bei, dass sich die öffentliche

³⁵ Lawrence D. Frank, Peter O. Engelke und Thomas L. Schmid, *Health and Community Design: The Impact of the Built Environment on Physical Activity* (Washington, DC: Island Press, 2003), p. 36.

³⁶ Monika Steinhäuser, 'Das europäische Modebad des 19. Jahrhunderts: Baden-Baden, eine Residenz des Glücks', in *Die deutsche Stadt im 19. Jahrhundert: Stadtplanung und Baugestaltung im industriellen Zeitalter*, herausg. von Ludwig Grote (München: Prestel, 1974), S. 95-128, S. 97-100.

³⁷ Roger Caillois, *Man, Play and Games*, übersetzt von Meyer Barash (Urbana; Chicago: University of Illinois Press, 1961), S. 12.

³⁸ Rem Koolhaas, *Delirious New York - A Retroactive Manifesto for Manhattan* (New York: The Monacelli Press, 1978), S. 32-3.

³⁹ Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988), S. 85-9.

Gesundheitspflege langsam von Bauaktivitäten auf die Schulung von gesundheitsorientiertem Verhalten verlagert. Als Indikator hilft mir dabei Andrew Mendelsohns Beschreibung des „Bakteriologen-Flaneurs“ Yersin, der um 1890 mit einem Fahrrad, Notizbüchern und Reagenzgläsern bewaffnet durch die Straßen von Paris streifte, um dabei dem Alltagsverhalten der Mikroben auf die Spur zu kommen.⁴⁰ Ich werde betonen, dass er damit auch dem alltäglichen Verhalten der Stadtbewohner auf den Leib rückte und damit einer Public Health Politik den Weg ebnete, die zunehmend persönliche Verhaltensweisen ins Zentrum Ihrer Aktivitäten stellt.

Nancy Tomes hat schließlich den Begriff der „Epidemic Entertainments“ für die entstehenden Massenmedien des frühen 20. Jahrhunderts gefunden, die mit Begeisterung aus der Welt der Mikroben und den neuesten Entdeckungen der Bakteriologen berichtet.⁴¹ In meinen Augen haben die Unterhaltungsmedien eine offensichtlich anziehende Mischung aus Populärwissenschaften, Anzeigenkultur und eines sich entwickelnden Marktes für Gesundheitsartikel geschaffen, welche gesundheitsrelevante Verhaltensweisen an die ständig wachsende Stadtbevölkerung vermittelt. Moderne Architekten haben mit ihren Gebäuden und Konzepten eine wesentliche Rolle gespielt, Schulen und Ausbildungsstätten für eine breitere Bevölkerungsschicht zu öffnen. Hays zeigt dabei auf die Ursprünge von Hannes Meyer in der DADA Bewegung, um dessen spätere Konzepte als Erzieher und Direktor des Bauhaus besser verstehen zu können. Hays' Schilderungen zu Meyers ADGB Schule als eine temporäre Ausbildungsstätte für sozialistische Gewerkschaftler zeigen mir, wie seine Architektur kleinere Gruppen von Teilnehmern für den Alltag ausbilden sollte.⁴² Ich werde Meyers Einbindung der neuen Medien und sein Augenmerk auf die psychologische Programmierung von Gruppendynamik betonen, durch welche die ADGB Schule ein effizientes Lernen und Erholen in engem Zusammenhang zu den großen Städten ermöglichen sollte. Gerade die Schilderungen von Elizabeth Lebas der Municipal Cinemas in London zeigen, wie Public Health Aktivitäten die Schulung gesundheitsrelevanten Verhaltens in die Straßen der Arbeiterviertel Londons der 1920er Jahre einführten. Aus Sicht Lebas stellen die improvisierten Studios und mobilen Kinowägen eine direkte Beziehung zwischen den Produzenten und Rezipienten dieser neuen Medien ein.⁴³ Diese Referenz wird verdeutlichen, wie frühe Medien einzelnen Nutzergruppen ermöglichen, sich den Stadtraum für die Gesundheitsvorsorge und -Schulung temporär anzueignen.

In **Kapitel III „Prosthetic Architecture“** werde ich untersuchen, wie die Funktionalisten der 1920er Jahre darauf abzielen, gesundheitsrelevantes Verhalten durch ihre Grundrisse und Einrichtungen zu unterstützen. Sigfried Kracauer beschreibt eindrucksvoll, dass die Massen

⁴⁰ J. Andrew Mendelsohn, 'Der Mikroskopiker des modernen Lebens: Alexandre Yersin als Flaneur in Paris um 1890', in *Bakteriologie und Moderne*, herausg. von Philipp Sarasin and others (Frankfurt am Main: Suhrkamp, 2007), S. 176-219, S. 190-2.

⁴¹ Nancy Tomes, 'Epidemic Entertainments: Disease and Popular Culture in Early-Twentieth-Century America', *American Literary History*, XIV (2002), S. 625-52.

⁴² K. Michael Hays, *Modernism and the posthumanist subject: The architecture of Hannes Meyer and Ludwig Hilbersheimer* (Cambridge, MA: MIT Press, 1992), S. 135-6.

⁴³ Elizabeth Lebas, *Forgotten Futures - British Municipal Cinema 1920 - 1980* (London: Black dog, 2011), S. 86-93.

von Angestellten in Großstädten wie Berlin Begriffe wie Schönheit, Gesundheit und Sport als grundlegend ansahen, um in einer vom Konkurrenzkampf geprägten modernen Gesellschaft zu bestehen.⁴⁴ Ich folge Neumeyer, der beobachtet, wie die Architekten der Avantgarde den modernen Menschen als „Sportler und Ingenieur“ auffassten, für den sie ebenso rationale wie effiziente Gebäude ersannen.⁴⁵ Besondere Aufmerksamkeit schenke ich der Faszination für Sport bei Le Corbusier. Dieser sah in seinen Möbeln und Interieurs orthopädische Erweiterungen des Körpers, die ihn in den täglichen Herausforderungen unterstützen sollten.⁴⁶ Das Neue Wohnen wollte mehr Raum und Zeit für Sport und Erholung zur Verfügung stellen und lieferte dabei Klettergerüste, Punching-Balls, Turnhallen und Laufbahnen auf dem Dach gleich mit. Beatriz Colomina macht anschaulich, wie Le Corbusiers' transparente Gebäude nicht nur die perfekte Bühne für den Körperkult der Modernisten lieferten, sondern zu „voyeuristischen Einblicken“ einladen.⁴⁷ Ich werde diese Analyse soziologische Studien gegenüberstellen, die darauf hinweisen, dass traditionelle Sportarten hauptsächlich wettkampforientiertes Spielen fördern und bis in die 1970er hinein ein bürgerliches oder zumindestens ohnehin körperbewusstes Klientel angesprochen haben. In meinen Augen wird dieser Effekt durch die funktionalistische Architektur noch verstärkt, die Gesundheit und Lebensstil ihrer Bewohner zur Schau stellt und ebenfalls hauptsächlich jene Hedonisten anzusprechen scheint, die ohnehin Interesse an einem gesundheitsbewussten Lebensstil haben.

Auf dieser Kritik aufbauend werde ich herausarbeiten, wie insbesondere das Verständnis „organhaften Bauens“ dazu dienen kann, Forderungen an heutige Gesundheits-Technologien zu stellen. Für den englischen Sprachraum beschreibt Peter Blundell Jones, wie die „organischen“ Funktionalisten ein jegliches Überstülpen von geometrischen Formen durch einen idealisierenden bzw. verwissenschaftlichten Gestaltungsprozess ablehnten.⁴⁸ Nachdem ich Härings Vorstellungen einer maßgeschneiderten Architektur und Wrights Beobachtungen zum modernen „mobilen Leben“ herausgestellt haben werde, gehe ich dazu über, diese Begriffe bis zu den Nachkriegsarchitekten zu verfolgen. Diese scheinen sich einig in ihren Forderungen nach Selbstbestimmung und Partizipation im Gestaltungsprozess und entwickeln einige der Forderungen der Organiker mit den Möglichkeiten der Kommunikationstechnologien in den 1960er und 70 Jahren weiter. Simon Sadler beobachtet, wie die britische Architektengruppe Archigram in ihren späteren Projekten den „Traum der Organiker“ weiterverfolgen würde, indem sie mobile und allgegenwärtige Informationstechnologie in ihre Entwürfe integriert.⁴⁹ Ich werde unterstreichen, dass Archigrams Infrastrukturen, temporäre Konstruktionen und fledermausartigen Apparaturen

⁴⁴ Siegfried Kracauer, *Die Angestellten - Aus dem neuesten Deutschland*, zuerst veröffentlicht in "Frankfurter Zeitung" in 1929, (Frankfurt a. Main: Suhrkamp, 1971).

⁴⁵ Neumeyer, 'Der neue Mensch. Körperbau und Baukörper in der Moderne', S. 15.

⁴⁶ Le Corbusier, *The decorative art of today*, übersetzt von James I. Dunnet (London: The Architectural Press, 1987), S. 72-5.

⁴⁷ Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge, MA: MIT Press, 1994), S. 293.

⁴⁸ Peter Blundell Jones, *Hugo Häring - The Organic versus the Geometric* (Stuttgart: Edition Axel Menges, 1999), S. 78-9.

⁴⁹ Simon Sadler, *Archigram: Architecture without architecture*, (Cambridge, MA: MIT Press, 2005), S. 114.

dazu dienen sollten, die individuellen Entfaltungsmöglichkeiten für jeden Städter zu vergrößern. Dabei wird jedoch auch auf einen lebensreformerischen Ansatz in Archigrams frühen Ausstellungs-Designs und späteren spekulativen Projekten hinzuweisen sein, die Sadler an anderer Stelle als „lifestyle games“⁵⁰ bezeichnet.

Im Anschluss werde ich die Konzepte des Psychologen BJ Fogg in die Diskussion einführen, die einen großen Einfluss auf heutige mobile Health Games ausüben. Fogg beschreibt diejenigen interaktiven Medien als „persuasive“ Technologien, die vorrangig zu dem Zweck gestaltet werden, Verhaltensänderungen im Nutzer hervorzurufen und zu unterstützen. Er hebt dabei die Potentiale von mobilen und kontextbezogenen Applikationen hervor.⁵¹ Zunächst werde ich auf die Kritik Ian Bogosts eingehen, der Persuasive Technology-Produkten vorwirft, ihre Nutzer wenig dazu anzuregen, über die kulturellen und politischen Zusammenhänge nachzudenken, aus denen heraus sich der jeweilige Wunsch nach Verhaltensänderungen überhaupt erst entwickelt.⁵² Dieser Hinweis scheint mir wichtig, da soziologische Studien zeigen, wie die Gründe für eine gute Gesundheit mehr und mehr in selbstverantworteten Faktoren gesucht werden. Mildred Blaxter hat beispielsweise gezeigt, wie gerade Bürger aus wirtschaftlich benachteiligten Verhältnissen „gelernt“ hätten, Gesundheit weniger durch ein materielles Umfeld als durch individuelles Verhalten zu erklären.⁵³ Dieser Fokus auf vermeintlich selbstverschuldete Faktoren wie ungünstige Ernährung und mangelnde Bewegung drückt sich in meinen Augen in dem häufig verwendeten Begriff der „Lebensstilkrankheiten“ aus. Ich stimme allerdings insbesondere jenen Gesundheitsexperten zu, die fordern, den Stress, dem z.B. krankhaft Übergewichtige ausgesetzt werden, durch eine vermehrte Forschung an sozialen und räumlichen Ursachen und Maßnahmen besser zu balancieren.⁵⁴ Für mich haben mobile und kontextbezogene Technologien, wie sie Fogg beschreibt, große Potentiale für die Schulung und Aufklärung in der Gesundheitsvorsorge und im Therapiemanagement. Aus meiner Sicht sollte eine heutige „prothesenhafte Architektur“ im Sinne der Organiker moderne Kommunikations- und Sensortechnik dazu einsetzen, auch über umweltbedingte Einflüsse auf gesundheitsrelevantes Verhalten zu informieren.

Ich werde diese Betrachtung zu den Organikern daher mit der Analyse heutiger „performativer“ Technologie abschließen, die darauf abzielt, partizipatorische Planungsprozesse zu ergänzen. Ich werde zunächst auf Härings Formulierung hinweisen, in der er dazu auffordert, Formen dem Wesen der Aufgabe folgend „von innen nach außen“ zu

⁵⁰ Simon Sadler, 'Open Ends: The social visions of 1960s non-planning', in *Non-Plan: Essays on freedom participation and change in modern architecture and urbanism*, herausg. von Jonathan Hughes and Simon Sadler (Oxford: Architectural Press, 2000), S. 138-55, S. 148.

⁵¹ BJ Fogg, *Persuasive Technology - Using Computers to Change What We Think and Do* (San Francisco: Morgan Kaufmann Publishers, 2003), S. 10-1.

⁵² Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), S. 60-1.

⁵³ Mildred Blaxter, *Health and Lifestyles* (London: Routledge, 1990), p. 162.

⁵⁴ W. Philip T. James, Rachel Jackson-Leach und Neville Rigby, 'An International Perspective on Obesity and Obesogenic Environments', in *Obesogenic environments: complexities, perceptions, and objective measures*, herausg. von Amelia Lake, Tim G. Townshend und Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 1-10.

entwickeln. Er fordert ‐Bauherren‐ dazu auf sich in Planungsprozesse einzumischen, indem sie ihre Absichten und Wunsche im Zusammenspiel mit Architekten artikulieren.⁵⁵ Dieser Gedanke fuhrt mich zu Yona Friedman, der bereits in den 1970er Jahren dazu aufforderte, Nutzer in das Zentrum eines Informationskreislaufes zu stellen, der Expertenwissen, Angebot von architektonischen Produkten und Dienstleistungen sowie den ‐urban mechanics‐ miteinander verbindet.⁵⁶ Ich werde zeigen wie Friedman auf der Grundlage von gesundheitsrelevanten Daten, Nutzer in die Lage versetzen wollte, ihre eigenen Entscheidungen gemaf ihres Lebensstils zu treffen. Ich sehe Christian Nolds ‐performative Technologie‐ in dieser Tradition, durch die er Umwelteinflusse auf den Korper zu Tage befordern und dabei helfen will, urbane Interventionen zu identifizieren.⁵⁷ Ein solcher kunstlerisch-spielerischer Ansatz wird bisher in der Stadtplanung wenig eingesetzt. Ich bin jedoch davon uberzeugt, dass er gerade fur eine heutige gesundheitsorientierte Stadtplanung interessant werden wird, die sich insbesondere der Bekampfung von chronischen Krankheiten verschreibt. Im abschließenden Kapitel werde ich zeigen, wie mobile und kontextbezogene Spiele solche Prozesse unterstutzen konnen.

In **Kapitel IV ‐Playing Health Games‐** werde ich die aktuelle Praxis digitaler Spiele in Hinsicht auf deren Interaktion mit ihrem stadtischen Kontext untersuchen. Auf der Basis meiner vorangegangenen Untersuchungen schlage ich die Kategorien des kollaborativen, expressiven und reflektierenden Spielens vor. Ich reagiere damit auch auf Forderungen von Serious Games-Forschern nach einem breiter angelegten Experimentieren mit Spielhandlungen und –Technologien im Game-Design.⁵⁸ Oft wird beispielsweise *Exergames*, also digitalen Spielen, die zu korperlicher Bewegung animieren wollen, vorgeworfen, hauptsachlich Wettkampf- und Leistungsorientierte Spielweisen hervorrufen. Meine Analyse zweier mobiler Health Games wird zeigen, dass diese zwar soziale Interaktion fordern, doch lediglich die Befolgung bestimmter Therapieanweisungen durch ein Punkte- und Ranking-System belohnen. Im Gegensatz dazu verweist Lieberman auf die Potentiale von ‐Multi User Domains‐ (MUDs) fur zukunftige Health Games. In diesen wurden Spieler schon jetzt miteinander online kooperieren, um Spielinhalte zu generieren, die fur sie selbst von Bedeutung sind.⁵⁹ Was ich ‐kollaborative‐ Health Games nenne, nimmt diese Kritik auf und hebt hervor, wie Urban Health Games zu mitmachen anregen indem sie eine temporare Gemeinschaft von Spielern bilden.

GroÙe Aufmerksamkeit werde ich der Analyse des Mixed Reality Games *CryptoZoo* schenken, das besonders groÙen Wert auf kollaborative Spielhandlungen legt. Auf dessen

⁵⁵ Haring, 'baurat, nein- bauherr', in *Hugo Haring: Schriften, Entwurfe, Bauten*, herausg. von Jürgen Joedicke und Lauterbach, Heinrich, 2. Auflage (Stuttgart: Karl Krämer, 1965; 2001), S. 18-20.

⁵⁶ Yona Friedman, *Toward a scientific architecture* (Cambridge, MA: MIT Press, 1975), S. 68-70.

⁵⁷ Christian Nold, 'Stockport Emotion Map, Christian Nold, 2007'

<<http://stockport.emotionmap.net/map.htm>> [aufgerufen am 10. Oktober 2011]

⁵⁸ Ben Sawyer und Peter Smith, 'Serious Games Taxonomy', in *Presentation given at the Game Developers Conference* <http://www.seriousgames.org/presentations/serious-games-taxonomy-2008_web.pdf> [accessed 22 March 2011]

⁵⁹ Debra A. Lieberman, 'What can We Learn From Playing Interactive Games?', in *Playing video games: motives, responses, and consequences*, herausg. von Peter Vorderer und Jennings Bryant (New Jersey: Lawrence Erlbaum Associates, 2006), S. 379-98, S. 391.

Website lernen Spieler die Bewegungen von Spielcharakteren, den sogenannten Cryptids, nachzuahmen. Die Spieler verabreden sich später im realen Stadtraum um Spuren dieser Cryptids zu finden, zu dokumentieren und schliesslich Schauspieler in Cryptid-Kostümen zu jagen. Die Game-Designerin Jane McGonigal sieht CryptoZoo als eine Art „Parkour für Jedermann“. Die Teilnehmer würden ihre eigenen „Running Styles“ in Reaktion auf bestimmte lokale Spots wie Freilufttreppen, Sitzbänke oder Parkstreifen entwickeln und modifizieren. Diese würden schließlich gefilmt und der Gemeinschaft auf der Website zur Verfügung gestellt.⁶⁰ Insbesondere Iain Bordens Beobachtung des Skateboarden als räumliche Praxis wird mir hilfreich dabei sein, CryptoZoo als eine temporäre Gemeinschaft zu sehen, die sich den Stadtraum aneignet um ihn für ihre Zwecke der Unterhaltung und Bewegung zu nutzen.⁶¹ CryptoZoo stellt dabei aus meiner Sicht dem Wettkampf-Charakter von traditionellen Sportarten eine Mischung aus sozialem Netzwerk und Street Performance gegenüber. Gerade Bordens Analyse der Entstehung neuer Tricks im Skateboarden durch eine Mischung aus Kooperation und Wetteifern unterstreicht in meinen Augen den Anspruch von CryptoZoo-Designerin McGonigal, auch die Nutzer von Health Games eigene Spielaktivitäten entwickeln und untereinander austauschen zu lassen.

Was ich als „expressives“ Spielen für die Gesundheit beschreiben werde, nimmt seinen Ausgang bei der Kritik Bogosts an der heutigen Serious Games Praxis. Zu oft hätten diese einen „Top Down“-Ansatz und würden lediglich Inhalte von etablierten Institutionen und Geldgebern in das neue Medium der digitalen Spiele übertragen.⁶² Tatsächlich beschäftigen sich erst wenige Arbeiten mit den weiteren kulturellen und sozialen Implikationen von Health Games. Bogosts Kommentar verweist auf die Frage, was denn speziell „urban“ an digitalen Health Games sein kann. Ich werde hier auf Henri Lefebvre verweisen, der „urban forms“ als einen Grad erhöhten kulturellen und sozialen Austausches verstanden wissen wollte.⁶³ Ich sehe insbesondere in seinem Begriff der experimentellen Utopien, in der andere mögliche Lebensstile aufgezeigt werden sollten, einen Vorläufer der heutigen expressiven Videogames. Ein Verweis auf Constants Technik-Utopie *New Babylon* sowie Hundertwassers Verschimmelungsmanifest zeigt mir jedoch, dass diese Simulationen insbesondere die Weltansicht ihrer Verfasser in den Vordergrund rücken. Der Essay „Mobile Persuasive Games“ verdeutlicht dies, in dem Bogost für die künstlerische Praxis der Dekontextualisierung plädiert. Er behauptet, die besten Effekte in Bezug auf Verhaltensänderung seien zu erzielen, wenn mobile und kontextbezogene Games Alltagshandlungen möglichst expressiv mit Spielaktivitäten „kollidierten“.⁶⁴ In meinen Augen können expressive Health Games mehr noch als kollaborative dazu beitragen, die Aufmerksamkeit auf bestimmte, fest

⁶⁰ Jane McGonigal, 'Who invented CryptoZoo, and why? - CryptoZoo', in *CryptoZoo - a secret world of strange and fast-moving creatures* <<http://cryptozoo.ning.com/profiles/blogs/who-invented-cryptozoo-and-why>> [aufgerufen 17. März 2010]

⁶¹ Iain Borden, *Skateboarding, Space and the City - Architecture and the body* (Oxford; New York: Berg, 2001).

⁶² Ian Bogost, *Persuasive Games*, S. 57.

⁶³ Henri Lefebvre, 'The Right to the City', in *Writings on Cities*, herausg. von Eleonore Kofman und Elizabeth Lebas (Oxford: Blackwell, 1996), S. 61-181, S. 151.

⁶⁴ Ian Bogost, 'Persuasive Games on Mobile Devices', in *Mobile Persuasion: 20 Perspectives on the Future of Behavior Change*, herausg. von B.J. Fogg und Dean Eckles (Palo Alto, CA: Stanford University, 2007b), S. 29-37.

eingeschriebene, Verhaltensgewohnheiten zu lenken. Wie Bogost anregt, können sie dies sehr wirkungsvoll tun, wenn sie Spielaktivitäten zielgerichtet auf dafür relevante Orte wie z.B. Schnellrestaurants entwickeln.⁶⁵ Expressive Health Games sind daher weniger dazu geeignet neue Einsichten über bisher unbekannt Zusammenhänge zwischen Verhalten und städtischer Umgebung zu gewinnen. Sie klären jedoch darüber auf, wie aus Sicht des Game Designers bestimmte Umgebungen Einfluss auf unser Verhalten ausüben und drücken diese Kritik in Form einer digitalen Rhetorik aus.

Abschließend werde ich einen Ansatz beobachten, der es Spielern ermöglichen will, über die Einflüsse der Stadt auf Wohlbefinden und gesundheitsrelevantes Verhalten zu reflektieren. In Anlehnung an Callois' Studien haben Boyd Davis und Kollegen für freie und kreativere Formen der Exergames plädiert. In ihrer Entwicklung eines mobilen Health Games haben sie sich dabei von dem „situationistischen Projekt“ beeinflusst gezeigt.⁶⁶ Ich werde zunächst auf Sadlers Beschreibung der Situationistischen Dérives und der Psychogeographie als einer ernsthaften Praxis eingehen, für die nahezu wissenschaftliche Abläufe, Regeln und Empfehlungen beschrieben worden sind. Für meine Beobachtung von „reflexiven“ Health Games ist insbesondere Sadlers Kommentar von Interesse, die Situationistische Kartographie wolle durch ein architektonisches Bewusstsein auf Umwelteinflüsse aufmerksam machen, dabei aber auch revolutionäre Reaktionen schüren.⁶⁷ Ich werde daher die Spuren der Situationisten in dem mobile Game *Ere Be Dragons* von Boyd Davis und dessen Kollegen genauer untersuchen. In *Ere Be Dragons* versuchen die Spieler ihren Puls innerhalb eines gewissen Bereiches zu halten währenddessen sie sich durch die Straßen bewegen. Dabei entwickelt sich in Reaktion auf die Erfassung der Vitalparameter und GPS-gestützter Positionsartung eine virtuelle Landschaft auf dem Smartphone der Nutzer. Ich werde insbesondere Boyd Davis' Beobachtung folgen, der *Ere Be Dragons* als parallelen Ansatz zu Nolds Bio Mapping sieht. Im Unterschied würde das Health Game allerdings nicht die Reflektion über Körper- und Positionsdaten im Nachhinein, sondern in Echtzeit ermöglichen. Was Boyd Davis als „reflection-in-action“ innerhalb von Health Games beschreibt, verspricht in seinen Augen, neue Perspektiven für die Schulung und Stimulation von Verhaltensänderung zu eröffnen.⁶⁸ Ich werde betonen, wie reflexive Health Games insbesondere einen Reiz ausüben, indem sie Spielern Raum geben, bestimmte gesundheitsrelevante Vorgaben auf kreative Weise und in Reaktion auf persönliche Körperdaten zu entwickeln.

Dieses Spielprinzip der reflexiven Health Games hat in meinen Augen zum einen außerordentliche Potentiale für die Schulung und Prävention von chronischen Krankheiten. Die Spieler können auf Basis von Körperdaten und der vorher festgelegten (Spiel-)regeln neue und kreative Wege erproben um besser mit der Prävention oder der Therapie-

⁶⁵ Bogost, 'Persuasive Games on Mobile Devices', S. 35-7.

⁶⁶ Stephen Boyd Davis et al., 'Mapping Inside Out', in *Pervasive Gaming Applications - A Reader for Pervasive Gaming Research Vol. 2*, herausg. von Carsten Magerkurth und Carsten Röcker (Aachen: Shaker, 2007), S. 199-226, S. 219.

⁶⁷ Simon Sadler, *The Situationist City* (Cambridge, MA: MIT Press, 1998), S. 164.

⁶⁸ Stephen Boyd Davis, 'Mapping the unseen: Making sense of the subjective image', in *Emotional Cartography: Technologies of the Self* (London: Creative Commons, 2009), S. 39-51, S. 48.

Management umzugehen. Durch mobile Kommunikations- und Sensortechnologie bieten Urban Health Games ein sicheres Spielumfeld an, das aber gleichzeitig in die alltägliche Umgebung miteingreift. Auf der anderen Seite können insbesondere die letztere Gruppe von Spielen in Ergänzung zu performativen Technologien Individuen und Gruppen ermöglichen, über Umwelteinflüsse und gesundheitsrelevantes Verhalten zu reflektieren. Ich bin daher überzeugt, dass gerade die durch reflexive Health Games erzeugten Daten und Erlebnisse in Zukunft gesundheitsorientierte Planungsprozesse ergänzen können. Die vorliegende Arbeit liefert hierzu die erste eingehende Untersuchung aus Sicht der Architektur und Stadtplanung.

Introduction and Lines of Argumentation

In order to promote healthy lifestyles and wellbeing, many public health experts call for innovative and transdisciplinary research approaches. They welcome contributions from a great variety of professions including nutritional and environmental sciences, epidemiology, medicine, geography, sports sciences and urban planning.¹ Meanwhile, designers are investigating the ways in which new layouts for lunch rooms may better inform people about healthier food choices. Architects and urban planners are stressing pedestrian-friendly street networks to an extent, where they discreetly hide away elevators to encourage people climbing the stairs.² With this dissertation, I would like to draw attention to digital health games as a participatory and playful approach to promote healthy behaviours, which to date has been little addressed by urban research so far.

Health games aim to be entertaining, but also seek to engage players into learning or physical exercise. One of their commercially most successful products to date - Nintendo's *Wii Sports* series – may be played foremost in peoples' homes. However, health games run increasingly on mobile devices and begin to interact with their topographic, cultural and social context. The iPhone game *Monumental* for instance invites players to climb iconic monuments such as the Eiffel Tower or Empire State Building. At the same time, the game is tracking players' movement through the iPhone's on-board accelerometer. Their designers hope to engage participants by beating personal high scores and by competing with their friends via Facebook or other social networking sites.³ Several mobile games likewise have explored the potentials of social influence for health promotion. Notably, they have highlighted architectural theory as a major source of inspiration claiming to learn from cities and buildings how to stimulate social interaction and support.⁴ With this dissertation, I would like to invite further consideration on how architectural and urban research can contribute to the design and analysis of digital health games. Beyond providing health-related expertise on specific buildings, places and topographies, I will demonstrate how architectural and urban theory reveals a profound source to discuss aspects of user participation, social interaction and can help to create a wider range of gameplay experiences.

In turn, I will demonstrate how what I define as *urban health games* may unfold particular potentials as a design tool that enables users to discuss and indicate health-orientated urban interventions. I will therefore investigate architectural and urban design theory with a focus on spatial strategies to support health-related behaviour. Seeking to involve users into design processes as much as possible, I will pay particular attention to the theoretical concepts of so-

¹ Tim Townshend and others, 'Towards Transdisciplinary Approaches to Tackle Obesity', in *Obesogenic environments: complexities, perceptions, and objective measures*, ed. by Amelia Lake, Tim G. Townshend and Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 11-20, pp. 18-9.

² Nicolai Ouroussoff, 'Seeking a Desert Utopia: In Arabian sands, a green vision is lofty but socially questionable', *The New York Times - Articles selected in association with The Observer*, 3 October 2010, p. 1 & 4.

³ Me You Health, Inc., 'Monumental - Free Stair Climbing iPhone App', in *Creators of Daily Challenge - MeYou Health* <<http://www.meyouhealth.com/monumental/>> [accessed 3 March 2011]

⁴ Geri Gay, *Context-Aware Mobile Computing - Affordances of Space, Social Awareness, and Social Influence* (San Rafael, CA: Morgan & Claypool, 2009).

called “organic” architects from the first half of 20th century. The latter have criticised precisely those colleagues, whom we may consider as functionalist and indeed health-orientated. Hugo Häring for instance criticised Le Corbusier for imposing idealistic, over-rational and pre-fixed designs onto peoples’ daily routines. In contrast, he claimed for users to articulate design briefs and wanted architects to develop open-ended design processes.⁵ I will follow the notion of temporary, personally tailored architecture to post-war planners such as Archigram and Yona Friedman. The latter sought to provide users with the appropriate information to take lifestyle choices on their own including those being health-related.⁶ Building upon these concepts, I will demonstrate how today’s mobile technologies can contribute to the advantages of making users aware of environmental influences on one’s health and wellbeing.

To this end I will investigate how the notion of serious games has developed as a temporary experience that connects mobile technology, body data and different real world locations. Whereas traditional sports have highlighted self-improvement and foremost competitive forms of play, I will show how health games will have to explore a wider range of play activities to appeal to their audience. Investigating game design theory and relating it to relevant urban projects, I will highlight more creative forms of playing digital health games in the city. Understanding urbanity as state of increased social and cultural exchange and reflecting on attempts for re-appropriating urban space through spatial practices, I will illustrate what may render mobile health games as distinctively urban. I will conclude this investigation by presenting three ways of playing health games in the city as collaborative, expressive and reflective. This framework will be based on an analysis of how current examples of health games benefit from and contribute to their social and built environment.

In the following I will outline the academic context of this work. I seek to fill a gap in architectural theory dealing with health and body-related issues by making available more recent concepts of serious gaming and mobile technologies. Many scholars have dealt with the important role of medicine in modern architecture. 1920s functionalists in particular have based their designs on medical research being either motivated by an individual “obsession with health”,⁷ or due to a more general climate of dogmatic rationalism.⁸ Post-war critics on the functionalist cities seem to share the claim for more user participation.⁹ Jürgen Joedicke, founding director of *Institut Grundlagen Moderner Architektur und Entwerfen* (IGMA) at Universität Stuttgart, has pointed to “organ-like” building in this context. For him, every

⁵ Hugo Häring, 'wege zur form', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 1965; 2001), pp. 16-7, (first publ. in *Die Form*, n.1, October 1925).

⁶ Yona Friedman, *Toward a scientific architecture* (Cambridge, MA: MIT Press, 1975).

⁷ Beatriz Colomina, 'The Medical Body in Modern Architecture', in *Anybody*, ed. by Cynthia Davidson (New York: Anyone Corporation, 1997), pp. 228-39, p. 232.

⁸ Fritz Neumeyer, 'Der neue Mensch. Körperbau und Baukörper in der Moderne', in *Moderne Architektur in Deutschland 1900-1950 - Expressionismus und Neue Sachlichkeit*, ed. by Vittorio Magnago Lampugnani and Romana Schneider (Stuttgart: Hatje, 1994), pp. 15-32.

⁹ Thomas Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', in *Architektur im 20. Jahrhundert - Deutschland*, ed. by Romana Schneider, Winfried Nerdinger and Wilfried Wang (Munich: Prestel, 2000), pp. 12-20.

generation of designers would have to formulate their design intention. Organic architects would be able to contribute with their concepts of open-ended and participatory design processes.¹⁰ Gerd de Bruyn, current IGMA director and supervisor to this project, has observed an ambiguous “philanthropic dictatorship” that arises from modern town planning, which follows a distinctive Utopian and often also health-related reform agenda.¹¹ Emphasising user involvement and the role of an “amateur-architect”, de Bruyn has directed IGMA research to critically engage with various disciplines including natural sciences, media technologies and pop culture.¹² Following this transdisciplinary approach, I intend to address a dilemma that occurs to any designer with a social, ecological or health reform agenda. Here I will integrate expert knowledge and research while also articulate my own convictions and those of fellow city users.

Current research on “obesogenic environments” reminds us to avoid any form of spatial determinism while working on health-orientated urban designs. The scholarship of Jennifer Robertson-Wilson and Billie Giles-Corti has made me aware that before any new insights on the various causes for obesity or any other lifestyle disease can be turned into actual design codes, more interdisciplinary studies need to be undertaken.¹³ It may therefore come as a surprise that urban research seems to have only just begun exploring multimedia technologies as a tool to gain data and also as an opportunity to actively promote behaviour. I have found that major publications on the topic are still focussing on traditional means within the “built environment” for instance to increase physical activity.¹⁴ More recently, urban planners and computer scientists from Eindhoven have joined forces to develop what they call a mobile recommendation system. It suggests health-promoting activities while taking into account users’ agenda for the day, but also the particular weather, environment and location.¹⁵ Such initial collaborations seem to approach computer technologies on a pragmatic level and hardly consider wider cultural implications. The recent exhibition *The Medicalization of Architecture: Imperfect Health* may therefore have struck a cord when its curators warn architects not to simply jump on the train of a rapidly growing healthcare technologies market. Provocatively, they claim for a “de-medicalization” and call for a more self-reflective approaches by contemporary architects to contribute to one’s health and wellbeing.¹⁶ While I agree that architects’ self-critique on health-orientated design may help to develop more

¹⁰ Jürgen Joedicke, 'Vorwort zur zweiten Auflage', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001).

¹¹ Gerd de Bruyn, *Die Diktatur der Philanthropen - Entwicklung der Stadtplanung aus dem utopischen Denken* (Braunschweig / Wiesbaden: Verlag Vieweg, 1996).

¹² Gerd de Bruyn, 'Undisziplinierte Architekturtheorie(n)', *Wolkenkuckucksheim - Cloud-Cuckoo-Land - Vozdushnyi zamok*, 9 (2005).

¹³ Jennifer Robertson-Wilson and Billie Giles-Corti, 'Walkability, Neighbourhood Design and Obesity', in *Obesogenic environments*, pp. 21-40. pp. 28-9.

¹⁴ See Lawrence D. Frank, Peter E. Engelke and Thomas L. Schmid, *Health and Community Design: The Impact of the Built Environment on Physical Activity* (Washington, DC: Island Press, 2003).

¹⁵ Yuzhong Lin and others, 'Motivate: Towards Context-Aware Recommendation Mobile System for Healthy Living', in *Proceedings of the 5th International ICST Conference on Pervasive Computing Technologies for Healthcare* (Dublin: University College Dublin, 2011), pp. 1-4.

¹⁶ Mirko Zardini and Giovanna Borasi (exhibition curators), 'Imperfect Health: The medicalization of Architecture', in Art Agenda <<http://www.art-agenda.com/shows/imperfect-health-the-medicalization-of-architecture-at-cca-montreal/>> [accessed 20 November 2011]

sustainable and playful healthcare technologies, I also strongly believe in interdisciplinary collaboration.

I therefore welcome the idea that urban research develops an increasing interest in what is been called “urban games”.¹⁷ Researchers of human computer interaction (HCI) usually refer to urban games as “Mixed Reality Games” or “Pervasive Games”, since they combine virtual storytelling with a variety of platforms, media technologies and real world locations.¹⁸ Initial attempts to make digital games more accessible to the profession of architects have naturally aimed for a broad and most inclusive overview on their cultural, political and urban implications.¹⁹ Even though pioneering studies have provided a more comprehensive insight into synergies and potentials of the two fields, they often seem to exclude “serious games” for reasons of practicality.²⁰ Of course, several experiments with pervasive games as urban planning and research tools have been reported.²¹ However, in my research I have not come across games or research on games with a distinctive health focus from the perspective of urban design.

Christian Nold’s work on “Bio Mapping” and “performative technology“ seems to be an important reference work, since he seeks to combine body data and geo information to involve users in discussing future urban design interventions.²² Stemming from an activist and artistic background, Nold certainly applies a playful approach, but neither explicitly addresses health or indeed health games. Ian Bogost has set video games in a wider context of political activism. Showing “persuasive games” at work in the fields of politics, advertisement and learning, he calls out for more research in further subdomains such as health promotion.²³ In fact, health games are a fast growing discipline in both business and academia. Lieberman for instance has pointed to several recent book publications, a first peer-reviewed journal in 2011 and various well-attended international conferences.²⁴ One first project within the well funded U.S. Health Game Research program looks into mobile, persuasive and context-aware technologies.²⁵ Many more mobile health games are being

¹⁷ See Larissa Hjorth, 'Urban Gaming - Stadt als transmedialer Spielplatz', *StadtBauwelt*, 24 June 2011, pp. 44-9. and Sebastian Quack, 'Urban Games?', *StadtBauwelt*, 24 June 2011, pp. 50-1.

¹⁸ See *Pervasive Games - Theory and Design*, ed. by Markus Montola, Jaakko Stenros and Annika Waern (London: Morgan Kaufmann, 2009).

¹⁹ *Space Time Play - Computer Games, Architecture and Urbanism: The next Level*, ed. by Steffen P. Walz, Friedrich von Borries and Matthias Böttger (Basel; Boston: Birkhäuser, 2007).

²⁰ Steffen P. Walz, *Toward a Ludic Architecture: The Space of Play and Games* (Pittsburgh, PA: ETC Press, 2010), p. 129.

²¹ Friedrich von Borries, Matthias Böttger and Walz Steffen P., 'Ausweitung der Schiesszone - Computerspiele im urbanen Raum', *archithese*, 2006, 40-3.

²² Christian Nold, 'Introduction: Emotional Cartography - Technologies of the Self', in *Emotional Cartography: Technologies of the Self*, ed. by Christian Nold (London: Creative Commons, 2009), pp. 3-14.

²³ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), p. 64.

²⁴ Debra A. Lieberman, 'Designing Serious Games for Learning and Health in Informal and Formal Settings', in *Serious Games - Mechanisms and Effects*, ed. by Ute Ritterfeld, Michael Cody and Peter Vorderer (New York; London: Routledge, 2009), pp. 117-30, p. 118.

²⁵ Health Game Research, 'Health Games Research - About us', in *Health Games Research - Advancing Effectiveness of Interactive Games for Health* <<http://www.healthgamesresearch.org/about-us>>

developed and played within our cities, and yet they have been merely discussed within in the fields of HCI and healthcare technologies so far. With this dissertation, I seek to fill this gap by providing a first conceptual framework to analyse and develop mobile health games from urban design.

Having outlined the academic context from which my research emerges, I would like to make a brief comment on the methodologies, which I have applied in this dissertation. Throughout this project, I have had the opportunity to be in close scientific exchange with experts from various academic backgrounds. In my view, reaching out to other disciplines is crucial to learn the basics of the involved expert knowledge, but also to explore already established research approaches to digital health games. At Stuttgart's Olgahospital, I have been interviewing young diabetic patients about particular locations relevant to their therapy management. Their comments have pointed to potential pitfalls for a mobile game in which players would test their blood sugar in everyday locations such as the school or a bus stop. Comments on fellow players, peers, friends, family members or strangers to be expected out and about made me aware of the close relation between social and spatial environments.²⁶ As a visiting scholar at the *Lansdown Centre for Electronic Arts* in London, I have had the chance to gain further insights into locative media and how current mobile health games interact with real world locations. Such practise-based research has led to several conference papers and publications in the fields of HCI, serious gaming, pervasive healthcare, and sports science, but also helped to formulate my own perspective from architectural theory.

The literature regarding architecture and town planning I have reviewed for this dissertation focuses on the first half of 20th century up until the 1950s and 60s. In contrast, research on "obesogenic environments", pervasive technologies and digital health games stems almost entirely from the 2000s. Aiming to make digital health games available to my own academic discipline, I also had to accept the limitations of a Ph.D. thesis in architecture and urban planning. With my training in architecture, I can understand and comment on healthcare, computer and game technology only to a certain degree. I therefore have chosen to investigate a time period of modern architecture, which is still particularly influential on our cities, but also appears in a safe distance to being re-contextualized for today's challenges. Building upon this more phenomenological approach, I aim to move on in the following to develop what I describe as Urban Health Games as an innovative concept for urban design practise.

Lines of argumentation

This dissertation is structured in four chapters dealing with the research questions outlined above. Chapter 1 unfolds from the discussion on wider social and political implications of

[accessed 21 February 2010]

²⁶ Martin Knöll, "'On the top of high towers.'" - Discussing locations in a mobile health game for diabetics', in *Proceedings of the IADIS International Conference Game and Entertainment Technologies 2010*, ed. by Katherine Blashki (Freiburg: IADIS Press, 2010), pp. 61-8.

health-orientated town planning and investigates its merits for today's research on "obesogenic environments". Chapter 2 presents distinctively urban strategies of promoting healthy living of the early 20th century including tourism, mobile laboratories and education technologies. Chapter 3 investigates how the notion of personally tailored, mobile and temporary architectures can be used to promote behaviour change by making users aware of environmental influences on one's health and wellbeing. Chapter 4 pays particular attention to the kind of play that occurs in today's digital health games and introduces the three categories of collaborative, expressive and reflective health gaming.

Chapter 1 *Urban Health* begins with the comparison of two Renaissance visions for ideal cities. I will demonstrate how Thomas More assumed his Utopians would engage in what he has called "profitable games", which also promised players to learn, train and keep fit.²⁷ I will illustrate how More suggested gardening competitions, which in my view seems to anticipate the notion of an urban game, but lacks a crucial ingredient: voluntary participation. In contrast, I will emphasise how Leonardo da Vinci responds to the poor early Renaissance city conditions by envisioning urban infrastructural technology. Leonardo has developed the concept of a "Two-Level City", for which he has foreseen a sanitary and transport system as well as an elevated, clean and sunny pedestrian level. Whereas Luigi Firpo observes Leonardo's practise as an urban planner as anticipating functionalist principles,²⁸ I will highlight Leonardo's organic approach to design and urban renewal. Unlike More, who claimed for a whole new social organisation, Leonardo planned a development process including pilot projects and experimental set ups to implement his suggestions.

From this introduction, in which I will highlight the close relation between early humanistic planning and preventive healthcare, I will move on to investigate what has been widely considered as the origins of the modern "scientific" town planning. Friedrich Engels will provide me with a profound documentation of the inhuman and unsocial conditions of early 19th century cities such as Manchester and London.²⁹ His scholarship makes me aware that unhealthy urban environments resulting in bad health outcomes were both foremost symptoms of the prevalent political and economic system. Hamlin has observed how the English sanitary movement under Chadwick would have narrowed down any broader discussion on potential social reforms in the early 19th century.³⁰ I will emphasis how Engels' report also focuses on unsanitary environments and has become highly influential on modernist planners' credo of anti-urban and dispersed living areas. Benevolo has observed the great transformation of Paris in the second part of the 19th century under the city planner Eugene Hausmann. The latter introduced wide and clean avenues, parks, fresh water

²⁷ Thomas More, 'Utopia (first publ. in Latin, Louvain, 1516)', in *Three Early Modern Utopias: Utopia, New Atlantis and The Isle of Pines*, ed. by Susan Bruce, trans. by Ralph Robinson (Oxford: University Press, 1999), pp. 1-148, pp. 54-9.

²⁸ Luigi Firpo, 'Leonardo as Urban Planner', in *Leonardo da Vinci - Engineer and Architect*, ed. by Paolo Galluzzi (Montreal: Museum of Fine Arts, 1987), pp. 287-301, p. 301.

²⁹ Friedrich Engels, *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970).

³⁰ Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain 1800 - 1854* (Cambridge: University Press, 1998), p. 13.

provision and street lights.³¹ His main intention seems to me less improving peoples' health and wellbeing than regaining public order. I will observe Haussmann's Paris as a prototype of the "sanitized city" in which to study the ambiguity of early urban health interventions: They have broadened access to health technologies, but also increasingly regulated individual behaviour. I will therefore underline today's research on "obesogenic environments", which claims to augment and indicate wider social reforms rather than to distract from them.

Marianne Rodenstein has shown how Pettenkofer's physiological experiments have found their way into design manuals and building codes from the late 1800s. Scientific town planners such as Reinhard Baumeister in Germany have claimed for decentralised living areas under the credo of *More Light and More fresh Air!*³² After the catastrophe of WWI, 1920s avant-gardist architects such as Bruno Taut have claimed for "The Dissolution of Cities".³³ Many modernist architects demonized great cities for their unsocial and unjust environments, which would have given home to the war machinery. I will show how many interwar planners often automatically attributed their concepts of decentralised, anti-urban living to be also health promoting. Likewise, visions for ultra dense-populated skyscraper cities followed the credos of circulation of light and fresh air, but must be seen critical in many other respects. As early as 1926, Häring has commented on Hilberseimer's scheme for a High-Rise City to be a questionable achievement of purely rationalist thinking. It would lack of any higher aim or indeed any aesthetic quality.³⁴ I will add to this contemporary critic the more recent account by Thomas Sieverts, who has pointed to Hilberseimer's vision as a smoothly run and engineered urban machine. Whereas he sees functionalists' concepts as an adequate solution to the health problems of their time, Sieverts foremost criticises the increasingly a-political and private character of public space.³⁵ I will conclude this chapter by re-considering concepts of the functionalist city, which were distinctively health-orientated at their time, in the light of today's studies into the walkability, neighbourhood design and obesity. Anti-urban and decentralised living areas, which seem to be related to more sedentary and inactive lifestyles, ironically have become a health issue on their own.³⁶ In fact, I will show how one of the earliest modern town planning concepts -Ebenezer Howard's Garden Cities – seen as a tool kit for moderate urbanism have carefully obeyed walking distances and stressed cultural density.

³¹ Leonardo Benevolo, *The origins of modern town planning* (London: Routledge, 1967), pp. 134-5.

³² Marianne Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', in *Macht Stadt krank? Vom Umgang mit Gesundheit und Krankheit*, ed. by Dittmar Machule, Olaf Mischer and Arnold Sywottek (Hamburg: Dölling & Galitz, 1996), pp. 19-31, p. 20.

³³ Bruno Taut, *Die Auflösung der Städte oder Die Erde eine gute Wohnung oder auch: Der Weg zur Alpen Architektur* (Hagen: Folkwang, 1920).

³⁴ Hugo Häring, 'zwei städte: eine physiognomische studie, zugleich ein beitrage zur problematik des städtebaus', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 20-2, (first publ. in *Die Form*, n. 8, May 1926).

³⁵ Thomas Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', in *Architektur im 20. Jahrhundert - Deutschland*, ed. by Romana Schneider, Winfried Nerdinger and Wilfried Wang (Munich: Prestel, 2000), pp. 12-20.

³⁶ Lawrence D. Frank, Peter O. Engelke and Thomas L. Schmid, *Health and Community Design: The Impact of the Built Environment on Physical Activity* (Washington, DC: Island Press, 2003), p. 36.

Chapter 2 Epidemic Entertainments points to what I consider as urban strategies to promote health including tourism, the use of mobile laboratories, mass media industries and public health education. I will introduce the 19th century fashionable health resort as a temporary holiday community, which began to integrate healthcare technologies and entertainment industries. I will pay particular attention to how gambling and healthcare have co-existed in Baden-Baden, where “bathers” have begun to enjoy a blend of urban amusement and cultivated nature.³⁷ Looking into Caillois’ classic study on different categories of play,³⁸ I will show how in health resorts games of chance, make-belief and vertigo have prevailed. Competitive play, which have become crucial for modern sports and today’s digital health games, seems to have played a minor role. Koolhaas has been eloquent about how Coney Island’s amusement parks have acted as a laboratory for New York’s hyper-dense urbanism.³⁹ I will highlight how health resorts also need to be seen in close relation to urbanism offering a wide spectrum of experiences that has appealed to hedonists and health seekers likewise. Emerging tourism industries have reinforced this process and render health resorts as man-made, temporary artefacts that put health-promotion to the core of a development of an urban region. I will show how the very same blend of entertainment, socialising and healthcare has advanced further in popular sea bathes and have re-entered city centres in the form of fitness clubs such as Manhattan’s Downtown Athletic Club in the early 20th century.

Bruno Latour’s description of experimental hygiene will provide me with two more strategies of bringing entertainment and healthcare close together. He has described Pasteurians’ “theatre of proof” as a mobile laboratory travelling between experiments in the field and the central laboratory in Paris. Once the measure against microbes would have been found, Pasteurians would have turned back to slightly alter real world set-ups in order and stage their most persuasive experiments.⁴⁰ I will illustrate how Pasteurians’ spatial design and modern visualisation technologies have accompanied a shift in public health policies from a focus on building activities to education. As Mendelsohn puts it, figures such as the “bacteriologist-flaneur” Yersin would have been obsessed with the everyday life of microbes, but also with documenting the habits and routines of the urban population.⁴¹ In my view, mobile technology – in Yersin’s case a cycle, notebooks and test-tubes for collecting bacteria - has paved the ground for public health education, which would began to focus on peoples’ health-related behaviour. Nancy Tomes has described the emerging mass media in the early 20th century as “Epidemic Entertainments”, which reported on spectacular news in

³⁷ Monika Steinhauser, 'Das europäische Modebad des 19. Jahrhunderts: Baden-Baden, eine Residenz des Glücks', in *Die deutsche Stadt im 19. Jahrhundert: Stadtplanung und Baugestaltung im industriellen Zeitalter*, ed. by Ludwig Grote (München: Prestel, 1974), pp. 95-128, pp. 97-100.

³⁸ Roger Caillois, *Man, Play and Games*, trans. by Meyer Barash (Urbana; Chicago: University of Illinois Press, 1961), p. 12.

³⁹ Rem Koolhaas, *Delirious New York - A Retroactive Manifesto for Manhattan* (New York: The Monacelli Press, 1978), pp. 32-3.

⁴⁰ Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988), pp. 85-9.

⁴¹ J. Andrew Mendelsohn, 'Der Mikroskopiker des modernen Lebens: Alexandre Yersin als Flaneur in Paris um 1890', in *Bakteriologie und Moderne*, ed. by Philipp Sarasin and others (Frankfurt am Main: Suhrkamp, 2007), pp. 176-219, pp. 190-1.

bacteriology, informed and entertained, but also advertised healthcare products.⁴² I will highlight how health educators combined mobile technology with new visualization strategies and foremost addressed an urban population within their everyday environment.

Modernist architects have played a crucial role in delivering buildings and equipment for education and training. Hays makes me aware of Hannes Meyer's roots in the DADA movement as crucial to understand his later designs as Bauhaus educator. Especially Meyer's ADGB school – a temporary training centre for union workers - was intended to prepare visitors to push forward socialist reforms within the nearby cities.⁴³ I will show how Meyer's ADGB school largely celebrated media technology and indicates the development of what I call a temporary "post sanatorium". Unlike the sanatorium in Mann's *Magic Mountain*, such education centres were built to provide efficient training in close relation to urban life. This observation relates to Elizabeth Lebas' account on how municipal cinema has brought public health education to the streets in South London in the 1920s.⁴⁴ I will highlight how temporary open-air film studios boosted user participation in the production process of public health movies. Furthermore, the mobile cinema vans hired by the local community seem to point to early media technology that re-appropriates urban space in order to deliver its educative content.

In *Chapter 3 Prosthetic Architecture* I will investigate how functionalist architects have sought to support health-related behaviour with personally tailored houses and interiors. Sigfried Kracauer's description of White Collar workers in 1920s Berlin illustrates how one's beauty, health and fitness have become essential to succeed in a climate of constant competition for jobs and wages in great cities.⁴⁵ Neumeyer has shown how modernist architects framed the Modern Man as a "Boxer and Engineer", for whom they designed likewise minimalist, highly efficient and transparent structures.⁴⁶ I will show how Le Corbusier foresaw his interiors as "artificial limb objects", which to provide people with more space and time for recreation and sports.⁴⁷ His functionalist colleagues and him introduced sports equipment, gyms and roof top running tracks to their apartments and urban designs. I will pay particular attention to Colomina's description of Le Corbusier's "health machines"⁴⁸, whose buildings, as she observes elsewhere would have perfectly displayed

⁴² Nancy Tomes, 'Epidemic Entertainments: Disease and Popular Culture in Early-Twentieth-Century America', *American Literary History*, XIV (2002), pp. 625-52.

⁴³ K. Michael Hays, *Modernism and the posthumanist subject: The architecture of Hannes Meyer and Ludwig Hilbersheimer* (Cambridge, MA: MIT Press, 1992), pp. 135-6.

⁴⁴ Elizabeth Lebas, *Forgotten Futures - British Municipal Cinema 1920 - 1980* (London: Black dog, 2011), p. 86-93.

⁴⁵ Siegfried Kracauer, *Die Angestellten - Aus dem neuesten Deutschland*, first published in "Frankfurter Zeitung" in 1929, (Frankfurt a. Main: Suhrkamp, 1971).

⁴⁶ Fritz Neumeyer, 'Der neue Mensch. Körperbau und Baukörper in der Moderne', in *Moderne Architektur in Deutschland 1900-1950 - Expressionismus und Neue Sachlichkeit*, ed. by Vittorio Magnago Lampugnani and Romana Schneider (Stuttgart: Hatje, 1994), pp. 15-31.

⁴⁷ Le Corbusier, *The decorative art of today*, trans. by James I. Dunnet (London: The Architectural Press, 1987), pp. 72-5.

⁴⁸ Beatriz Colomina, 'The Medical Body in Modern Architecture', in *Anybody*, ed. by Cynthia Davidson (New York: Anyone Corporation, 1997), p. 232.

their inhabitants' lifestyle and indeed one's body and health. She describes Le Corbusier's buildings as providing the public with a great amount of almost "voyeuristic" insights.⁴⁹ Considering studies on how traditional sports have appealed foremost to certain age, gender and social group, I will speculate how the more iconic modernist health machines likewise foremost appealed to hedonistic clients, who were already interested in healthy lifestyles and wellbeing.

Building upon this critique, I will highlight how personally tailored and participatory approaches to architecture may contribute to today's healthcare technologies. Jones observes how organic designers would have opposed any imposition of forms onto peoples' life that have been derived from exclusively geometric or scientific design processes.⁵⁰ After introducing Häring's concept of personally tailored solutions and Wright's visions of a modern mobile life, I will show how post-war architects have further advanced such organic claims. Sadler has observed how the British architects group Archigram would have followed an "organic dream" in their later projects dealing with pervasive, mobile and infrastructural technologies.⁵¹ I will pay particular attention to how their gadgets and augmented reality installations point to a life reform attempt in their designs. Whereas their kits of parts and bat-like suits wanted to enable users with a maximum of choices and opportunity for development, I will focus on what Sadler has described as Archigram's lifestyle games, which aimed to promote, suggest and support lifestyle changes.

Experimental psychologist BJ Fogg describes today's "persuasive technologies" as computers being designed to support behaviour change. He highlights the persuasive powers of mobile and context-aware technology and will provide me with a comprehensive overview into how they can be used to influence behaviours.⁵² I will show how Fogg's concepts have extensively inspired current mobile health games practise. Various critiques on Fogg's persuasive technology states that many digital products would hardly make users question the wider social and cultural context that demands for behaviour change in the first place.⁵³ This argument seems of particular importance to me, since sociological studies have shown how more and more responsibility for good health and wellbeing is being shifted on to what is considered as self-inflicted factors. Mildred Blaxter indicates that people would have "learned" to emphasize individual choices over social and political circumstances for bad health outcomes.⁵⁴ In my view, the lack of sensitivity towards social and environmental causes for bad outcomes may be pinpointed by the very notion of "lifestyle diseases". I

⁴⁹ Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge, MA: MIT Press, 1994), p. 293.

⁵⁰ Peter Blundell Jones, *Hugo Häring - The Organic versus the Geometric* (Stuttgart: Edition Axel Menges, 1999), p. 78-9.

⁵¹ Simon Sadler, *Archigram: Architecture without architecture*, (Cambridge, MA: MIT Press, 2005), p. 114.

⁵² BJ Fogg, *Persuasive Technology - Using Computers to Change What We Think and Do* (San Francisco: Morgan Kaufmann Publishers, 2003), pp. 10-1.

⁵³ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), S. 60-1.

⁵⁴ Mildred Blaxter, *Health and Lifestyles* (London: Routledge, 1990), p. 162.

therefore will underline experts' calls to balance the enormous pressure on patients and persons at risk with more research on environmental causes and measures to tackle chronic diseases as obesity.⁵⁵ For me, personally tailored technology bears great potentials to support health-orientated learning and behaviour change as parts of educational experiences. However, they must also be considered as a tool to reveal, discuss and indicate environmental influences on one's health and wellbeing.

I will therefore conclude this chapter with an outlook on how what has been called "performative technologies" may become a crucial part of participatory design processes. I will highlight Häring's notion of organ-like building and how he has sought to reveal forms from the inside by involving users to articulate design briefs.⁵⁶ In my view, any notion of prosthetic architecture needs to explore today's performative technology in order to help users articulating design briefs. This leads me to participatory design approaches by post-war architect Yona Friedman, who has claimed to set users in the centre of an information process that connects urban development, body data and experts' opinions. He foresees customized and mobile architectures, but also stresses sensor technologies to observe human behaviour in what he calls "urban mechanics".⁵⁷ Friedman's concepts sought to empower users to take lifestyle and design decisions on their own, which, as I will show, include information on health and wellbeing. Christian Nold contrasts today's pervasive technology, which would be increasingly migrating in to everyday objects and routines with what he calls a "performative" approach. Combining sensor devices and geo information tools, he seeks to enable users to interpret and discuss body data in relation to the environment and in collaboration with others.⁵⁸ It is precisely this mode of putting users in the centre of attention and stimulating their own interpretation that I see as crucial for health-orientated planning. Whereas Nold's performative technology helps to reveal environmental influences to inform urban design interventions, I will go on showing how health games can augment such processes by also unfolding an immediate benefit for one's health.

In **Chapter 4 Playing Health Games** I will closely investigate current health game practise in relation to its urban context. Following many serious games experts' claims to develop a broader range of gameplay activities, I will highlight three possible directions here with respects to playing health games within our cities. Considering critique on how recent exergames would foremost foster competitive play and would merely imitate traditional sports, I will first look into the possibility of a more collaborative approach. I will show how two mobile health games claim to stimulate social interaction in what they call virtual support groups. They foremost seem to encourage players' compliance through mere competition.

⁵⁵ W. Philip T. James, Rachel Jackson-Leach and Neville Rigby, 'An International Perspective on Obesity and Obesogenic Environments', in *Obesogenic environments: complexities, perceptions, and objective measures*, ed. by Amelia Lake, Tim G. Townshend and Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 1-10.

⁵⁶ Häring, Hugo, 'baurat, nein- bauherr', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Lauterbach, Heinrich, 2nd edn (Stuttgart: Karl Krämer, 1965; 2001), pp. 18-20.

⁵⁷ Yona Friedman, *Toward a scientific architecture* (Cambridge, MA: MIT Press, 1975), pp. 68-70.

⁵⁸ Christian Nold, 'Stockport Emotion Map, Christian Nold, 2007'
<<http://stockport.emotionmap.net/map.htm>> [accessed 10 October 2011]

Debra Liebermann has pointed to multi user domains (MUDs) as one future direction for health games, in which players would collaborate to create content of particular interest to them.⁵⁹ I will discuss McGonigal's Mixed Reality Game CryptoZoo, which seems to incorporate various collective play activities. In CryptoZoo participants learn to imitate and spot game characters in their neighbourhood and develop, modify and film their own running styles in response to the urban topography such as stairs, benches or parking slots.⁶⁰ McGonigal sees CryptoZoo as a sort of free running for everyone, which guides me to its relation to the urban environment. Of particular help will be Borden's observation on Skateboarding as a spatial practise that seeks to re-appropriate urban space by a combination of temporary structures, mobile devices, styles and temporary communities.⁶¹ In my view, Borden's study underlines McGonigal's claim to foster user-generated content and play activities within digital health games. I will show how collaborative play in health games seems to balance competitive play with performance, storytelling and dramatization of the cityscape. Augmented by multimedia networks, I will highlight how CryptoZoo uses the city as a stage that constitutes temporary and collaborative health gaming.

A second approach to urban health games starts off from Bogost's suspicion that serious games would be often top-down instruments. As he states, they would often merely transfer established knowledge from traditional media to videogames empowered by big companies and institutions.⁶² I will observe how research on health games seems to have only just started to look into broader social and cultural implications. Bogost's note that expressive videogames must be seen in broader media ecology of arguments and counter-arguments guides me to the question what makes health games distinctively urban. I will further investigate Henri Lefebvre's understanding of "urban forms" as increased state of social and cultural exchange.⁶³ Precisely what he has described as experimental utopias may provide today's location sensitive games with strategies to express critic on the everyday. I will revisit Sadler's notion of post-war "participatory architects" here, who, unlike their modernist predecessors, would have attempted to reform society progressively and "from within".⁶⁴ Ian Bogost's essay on mobile persuasive games proposes that it might be the artistic practices of de-familiarisation – to accentuate the differences between simulation and real world – which might cause the best results to express critique and stimulate reflection on more established behaviour. Bogost therefore also responds to the Situationist project, but sees their

⁵⁹ Debra A. Lieberman, 'What can We Learn From Playing Interactive Games?', in *Playing video games: motives, responses, and consequences*, ed. by Peter Vorderer and Jennings Bryant (New Jersey: Lawrence Erlbaum Associates, 2006), pp. 379-98, p. 391.

⁶⁰ Jane McGonigal, 'Who invented CryptoZoo, and why? - CryptoZoo', in *CryptoZoo - a secret world of strange and fast-moving creatures* <<http://cryptozoo.ning.com/profiles/blogs/who-invented-cryptozoo-and-why>> [accessed 17 March 2010]

⁶¹ Iain Borden, *Skateboarding, Space and the City - Architecture and the body* (Oxford; New York: Berg, 2001).

⁶² Bogost, *Persuasive Games*, p. 57.

⁶³ Henri Lefebvre, 'The Right to the City', in *Writings on Cities*, ed. by Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996), pp. 61-181, p. 151.

⁶⁴ Simon Sadler, 'Open Ends: The social visions of 1960s non-planning', in *Non-Plan: Essays on freedom participation and change in modern architecture and urbanism*, ed. by Jonathan Hughes and Simon Sadler (Oxford: Architectural Press, 2000), pp. 138-55, p. 146.

spectacular happenings substituted by what he calls “procedural rhetoric” of persuasive mobile games.⁶⁵ In my view, expressive health gaming seeks to collide play activities with daily routines being usually expected at specific locations. They may therefore raise players' awareness of how various urban environments influence one's wellbeing and health-related behaviour.

Whereas I will describe expressive health games as helping to articulate critique on health promotion, I will conclude with a third approach that seeks to enable players reflecting upon individual behaviours. Claiming for more free and creative forms of play in digital exergames, Boyd Davis and colleagues have noted to learn from the “Situationist project” for their locative media projects.⁶⁶ Sadler has shown how Situationists themselves have considered activities including psycho-geography and urban drifting as serious practices, for which they specified detailed proceedings and rules. Most interesting to me is Sadler's observation that Situationist mapping was to make aware of environmental influences on one's body, but also aimed to stimulate “revolutionary desires”.⁶⁷ I will therefore pay particular attention to Boyd Davis and colleagues' writings, who have developed *Ere Be Dragons*. It tracks player's heart-rate data, movement and positions inviting them to create their own onscreen map of a journey through the streets. Boyd Davis observes a similarity between Nold's Bio-Mapping and *Ere Be Dragons*. Whereas performative technology would enable individuals and groups to reflect upon action retrospectively, their mobile game would enable player to reflect on behaviours, body data and urban contexts in real time and while being involved in play activities. He goes on seeing “reflection-in-action” at work in such mobile games, which may unfold unprecedented potential for behaviour change precisely through performative technology.⁶⁸ I will highlight how self-reflective health games bear particular attraction as they let players more creatively explore how to achieve health-related goals. In turn, because of their proximity to performative technologies - providing players with new insights of the environmental influences on their body - I will conclude that self-reflective health games seem most suitable to augment participatory design processes.

⁶⁵ Ian Bogost, 'Persuasive Games on Mobile Devices', in *Mobile Persuasion: 20 Perspectives on the Future of Behavior Change*, ed. by B.J. Fogg and Dean Eckles (Palo Alto, CA: Stanford University, 2007b), pp. 29-37.

⁶⁶ Stephen Boyd Davis and others, 'Mapping Inside Out', in *Pervasive Gaming Applications - A Reader for Pervasive Gaming Research Vol. 2*, ed. by Carsten Magerkurth and Carsten Röcker (Aachen: Shaker, 2007), pp. 199-226, p. 219.

⁶⁷ Simon Sadler, *The Situationist City* (Cambridge, MA: MIT Press, 1998), p. 164.

⁶⁸ Stephen Boyd Davis, 'Mapping the unseen: Making sense of the subjective image', in *Emotional Cartography: Technologies of the Self* (London: Creative Commons, 2009), pp. 39-51, p. 48.

I. URBAN HEALTH

Ideal Cities

Before I will turn to the conditions of early 19th century industrial cities and the response they triggered in health reform movements, I would like to invite considering two Renaissance ideal cities, which both worked on answers for the massive health issues of their time.

Whereas More's depicts a whole set of new social and political organisation in his *Utopia* and foresees people playing "profitable games" to keep fit, Leonardo's *Two-Level City* anticipates what we call today urban infrastructure. Humanist reform attempts have been criticised for interfering deeply into people's everyday life and routines. I will focus on two aspects, starting with More's description of a gardening contest as a "profitable game" and on the other hand, Leonardo's "organic" approach to planning and urban technology. To recall the critic on humanist reform concepts will provide me with several arguments, from which to start the discussion on modern health-orientated and functionalist planning. To emphasise their notions of a serious game and pervasive technology will set the tone for Urban Health Games, which I will discuss in the following chapters.

More's "profitable games"

Humanistic utopias such as Campanella's *The City of the Sun*, Francis Bacon's *New Atlantis* or More's *Utopia* used the city to visualize an alternative society. Siefert points to the fact that health and wellbeing were on the top of their agenda responding to epidemical diseases of 15th and 16th century cities.¹ He goes on explaining how preventive healthcare would have been an essential mechanism to humanist utopias. To provide convincing plans and visualisations on how to remain peoples' health would have been key to promote any vision of a perfect society. Descriptions of actual diseases or therapies would have been notably absent. Doctors, if mentioned at all, would practice prophylactic exercises or merely advise on hygienic arrangements. As Siefert notes, In Campanella's *Citta del Sol*, the highest "Medicus" does instruct cooks and comes up with detailed diet plans for pregnant women and ill persons. He monitors citizens' personal hygiene and checks if their clothes would be appropriate to the season. As Siefert points out, healthcare technologies would have been most important, since they were entrusted to visualise the acclaimed human and social attitude, which the utopian state would take on towards its citizens.² In contrast to real Renaissance cities, Utopian societies claim to provide excellent preventive and medical care. Health-orientated planning was therefore depicted at the core of many "ideal cities" long before any of their interventions would be implemented to the 19th century city.

Let us have a closer look on Amaurote, Utopia's capital, one of 54 similarly planned cities on the island and seat of its council. As More accounts, Amaurote is based on a geometric plan of an almost square, which is divided into four identical districts and subdivided into several

¹ Helmut Siefert, 'Hygiene in utopischen Entwürfen des 16. und 17. Jahrhunderts', *Medizinhistorisches Journal*, V (1970), pp. 24-41, p. 26.

² Siefert, 'Hygiene in utopischen Entwürfen des 16. und 17. Jahrhunderts', pp. 36-8.

squared blocks.³ More's following brief description seems to reflect upon a Renaissance consensus on hygienic concepts, which originate in the treatises on architecture by ancient Roman theoretician Vitruv and became spread through Alberti in the 15th century.⁴ All streets in Amaurote are adjusted in order to be well sheltered from the winds. The city is placed next to a river Anyder, which springs off from a close-by hill. A canal system runs through the streets until it falls into the river and a water supply system is fully integrated into the city complete with earthen pipes and rainwater cisterns.⁵ More draws our attention to remarkable architectural features, too. In Utopia, he claims, times would have been overcome when people still lived in low and mean cottages, built with mud walls and ridged roofs thatched over with straw. In contrast, houses would be three stories high and built of stone, plastering or brick. Their roofs are flat and are plastered with a cheap material that would withstand fire and resist the weather. Most houses would have glazed windows, which, as More stresses, would let the light in, but keeping the dangerous winds out.⁶ More describes Amaurote as a "better place" that would provide everyone with a sufficient dry, warm and light lodging, but also as a healthier place.

If we turn closer to some details, it is revealed how More apparently designed Amaurote's architecture to stimulate certain behaviours and routines. De Bruyn has pointed to Amaurote's geometrical layout as an attempt to underline his concept of an egalitarian state.⁷ De Bruyn goes on pointing to specific architectural details of the doors, More describes for Amaurote, which one may best imagine as these swinging doors that can found in saloons of any decent Western movie. As More explains:

"These doors be made with two leaves never be locked nor bolted, so easy to be opened, that they will follow the least drawing of a finger, and shut again alone. Whoso will may go in, for there is nothing within the houses that is private or any man's own."⁸

As More claims, citizens of Amaurote were to enter freely into every house whatsoever without bothering neither to knock on a door nor to ask for permission. Moreover, they would swap houses at the end of every other decade. As Bruce notes, for its central claim to abandon private property, Utopia, would have been celebrated as communist manifesto avant le lettre.⁹ De Bruyn, doubts that Renaissance humanists such as Campanella and More would

³ Thomas More, *Utopia*, first publ. in Latin in 1516, in *Three Early Modern Utopias: Utopia, New Atlantis and The Isle of Pines*, ed. by Susan Bruce, trans. by Ralph Robinson (Oxford: University Press, 1999), pp. 1-148, pp. 52.

⁴ Leon Battista Alberti, *On the art of building in ten books*, first publ. as *De re aedificatoria* by Leon Battista Alberti (1404-1472), trans. by Joseph Rykwert, Robert Tavernor and Neil Leach (Cambridge, MA: MIT Press, 1988).

⁵ More, *Utopia*, pp. 52-54.

⁶ More, *Utopia*, p. 55.

⁷ See Gerd de Bruyn, *Die Diktatur der Philanthropen - Entwicklung der Stadtplanung aus dem utopischen Denken* (Braunschweig; Wiesbaden: Vieweg, 1996), p. 58.

⁸ More, *Utopia*, p. 54.

⁹ See Susan Bruce, 'Introduction', in *Three Early Modern Utopias: Utopia, New Atlantis and The Isle of Pines* (Oxford: University Press, 1999), pp. xxi.

have been able and indeed were willed to think of man as a free agent, whom as Campanella would claimed, on the base of an egalitarian society should be sent on a journey to find their own luck. Instead, de Bruyn stresses More's "dictator like" will to organize people's everyday life to the degree where he would even design the most peculiar architectural details. For de Bruyn, Renaissance humanists show the tendency to structure each aspects of their citizens' private and sexual life in order to make the most intimate details transparent and accessible to a communal consciousness.¹⁰ Such tendency have often been criticised in modern architecture and particularly in functionalists, who claimed to focus on people's health and wellbeing. I may note how political agendas express themselves in urban and architectural forms, and how such mechanism have been observed particularly in both relation to one's health and body.

It has been noted that throughout More's text initial claims for more liberty would eventually be shrunken in the course of the descriptions that would follow them. For example, even if the official working hours famously had reduced officially to six hours a day, the rest of the day would be hardly spent in leisure at all. People, More would claim use their spare time to learn, to train and work on their own occupations.¹¹ These work ethics seem to pervade all aspects of Utopians everyday life including the body and its wellbeing. Eating in Utopia appears under an explicit dietetic point of view. No word about indulgence nor enjoyment, it is merely seen as an act of recovering one's health, which would frequently require to be filled up again with much needed energy.¹² Next to all the morning lectures, and voluntary work in the evenings, the only time off work would be a one-hour break after supper. A closer look on how these hard working Utopians are to entertain themselves shifts our attention to an interesting note on "play". In book one, where More has discussed more general remarks on Europe, he describes "naughty" and "unlawful games" such as dice, cards, tables, football and tennis. Being played in alehouses, taverns and brothels, these games would reinforce robbery and all sorts of crime, since they would make the money run fast away.¹³ In contrast, he claims for his Utopians:

"After supper they bestow one hour in play, in summer in their gardens, in winter in the their common halls where thy dine and sup. There they exercise themselves in music, or else in honest and wholesome communication. Dice-play and such other foolish and pernicious games they know not. But they use two games not much unlike the chess."¹⁴

More describes the two kinds of games Utopians would play, which as Bruce suggests, he might have actually invented himself.¹⁵ The first is a numbers game and the second is described as a battle between vice and virtue. It would teach a lesson in morals and yet as he

¹⁰ De Bruyn, *Die Diktatur der Philanthropen*, p. 67.

¹¹ Bruce, 'Introduction', in *Three Early Modern Utopias*, p. xxiii.

¹² More, *Utopia*, p. 83.

¹³ More, *Utopia*, p. 24.

¹⁴ More, *Utopia*, p. 58.

¹⁵ Susan Bruce, 'Explanatory Notes', in *Three Early Modern Utopias*, p. 222.

seems to insist does so in a pleasant way. Plays or Games, as More comments, therefore would become “also profitable.”¹⁶ I like to bear More’s idea of such profitable gaming in mind, as I will turn to his report on the meaning of health to everyday life.



Io.Clemens. Hythlodæus. Tho.Morus. Pet. Aegid.

Figure 1 Ambrosius Holbein, Opening Paragraph of Utopia, 1518.

Hythloday, Thomas More and Peter Giles talking in More’s garden. More invented two “profitable games” for his description about daily life in Amaurote. A third was a sort of gardening contest, which would motivate Utopians to grow their own food, relax, and stay fit.

The state of being healthy is accounted as a chief pleasure that is achieved by moderate physical exercise and a healthy, “close to nature” lifestyle.¹⁷ He refers to the importance of agriculture for the utopian state, which also would have the side effect to “exercise”.¹⁸ Adults are encouraged to work physically even if they live an urban life in one of the 54 cities. More suggests two gap years for all urbanites to stay work at farms on the countryside. Moreover, he seeks to combine the cultural life of the cities with the kind of physical activities linked to rural life. The garden seems to play an important role in this strategy of urban health. It is in the garden, where More discusses Utopia with the traveller Hythloday and his friend Peter Giles in book one (Figure 1). In Amaurote, large gardens are being placed behind all houses, which would be “finely kept” so that they have vines, fruits, herbs, and flowers in them.¹⁹ More explicitly highlights the beauty and usefulness of Amaurote’s gardens emphasising the amusement, pleasures and value for body and soul. A note on their motivation to indulge in gardening, however, shifts our attention back to More’s notion of “profitable games”:

“Their study and diligence herein cometh not only of pleasure, but also of a certain strife and contention that is between street and street concerning the trimming, husbanding, and furnishing of their gardens, every man for his own part. And verily you shall not lightly find in all the city anything that is more commodious, either for the profit of the citizens or for pleasure.”²⁰

¹⁶ More, *Utopia*, p. 58.

¹⁷ More, *Utopia*, pp. 82-3.

¹⁸ More, *Utopia*, p. 57.

¹⁹ More, *Utopia*, p. 54.

²⁰ More, *Utopia*, p. 54.

More does not further specify rules or proceedings of this gardening competition. Bearing in mind his inventing of “profitable games” and emphasis given to light physical activities for health, I like to consider it as a first attempt to stimulate physical exercise in an urban context with a game-like approach. To initiate a gardening contest merges tools from the fields of urban planning and architecture with these from public health education – promoting the importance of physical activities – and the design of a game-like social interaction, sold to the reader as a “profitable game”. Such an undertaking may well be read as a further indication for More’s will to organize Utopian’s life beyond aspects of work, politics and education interfering into people’s diet, physical activity and their choices of games. Since More tells us so little about its circumstances, on its mode of invention and participation, his profitable games raise more questions than they deliver answers. If one chooses to accept More’s gardening contests as an urban intervention, which anticipates game design as a tool of health-orientated planning, one is left with the questions of who designs and who participates and more importantly, what may be the specific quality of such games.

Leonardo’s organic planning

Leonardo da Vinci was born 26 years earlier than Thomas More and worked on city matters mainly in his early Milanese period in the 1480ies and early 1490ies. Leonardo’s work on an “ideal city” has been seen as responding to the plague epidemic in the years 1484-1485, which killed one third of the Milan population. As Firpo notes, Leonardo would have moved to an “appallingly overcrowded” Milan around that time. He suggests, the sensitive and solitary soul must have been horrified by the lack of privacy, the disorder, noise, filth and overwhelming stench in the narrow twisting streets and slums of Milan.²¹ Firpo goes on accounting that Leonardo would have developed a deep aversion against the old-style mediaeval city, which would be delivered to us through his adoption of a fable by Alberti, called *Lapides*:

A stone of a good size, recently uncovered by rainwater, lay in an elevated spot where a pleasant grove ended above a stony road. Surrounded by herbs that were adorned by various flowers of different colours, the stone viewed the great number of stones lying in the road below it. It conceived a desire to roll down and said to itself: ‘What am I doing here among these herbs? I want to live in the company of my fellow stones.’ So letting itself roll down, it finished its tumbling course among the companions it desired. But after a while it began to suffer continual distress under the wheels of wagons, the hoofs of iron-shod horses, and the feet of travellers. Some of them turned it, and others trampled it. At times it raised itself up a little, all covered with mud or animal dung, and in vain looked back at the place it had left behind, a place of solitary and tranquil peace. This happens to those who leave the solitary and

²¹ Luigi Firpo, 'Leonardo as Urban Planner', in *Leonardo da Vinci - Engineer and Architect*, ed. by Paolo Galluzzi (Montreal: Museum of Fine Arts, 1987), pp. 287-301, p. 291.

contemplative life and choose to live in cities among people full of countless evils.²²

According to Firpo, Alberti would have stressed the importance of “contemplative solitude” to be gained from living on the countryside. In contrast, Leonardo would be lamenting about the lost “tranquil peace and solitude”, but also emphasizes the intolerable confusion and disorder of the filthy, crowded city, in which he as man involved in active and public life would be obliged to live. For Firpo, Leonardo in response would have begun to work on radical, almost surgical remedies for the city in order to liberate people from these “infinite evils” of the existing Renaissance city, but also to give his personal carrier as well as his own life in Milan a more pleasant perspective.²³ Leonardo had chosen to become an urbanite and yet he would not accept the condition of the Renaissance city.

Guillaume observes that around 1490 Leonardo’s interest in urban renewal led to an unprecedented solution of a two-level circulation. Its core was to install a sanitary system and put a new transport network in place, which would separate between pedestrian and vehicle traffic. The simplest version was only applicable in regions with an extensive natural water supply like the one of the Milan area. Guillaume refers to it as “River City” and points to its orthogonal network of canals and streets, each with distinctive functions. All goods were to be transported by boats and delivered to the backyards of the noble houses via a system of underground passageways (Figure 2.1). The streets would have been reserved for pedestrians only. Leonardo elaborated this concept further for areas with insufficient water supply, which Guillaume calls the “Two-Level city”. He substituted his idea of canals for sanitation and boat transport with a system of upper and lower streets.²⁴ As Firpo describes, the lower streets would carry the traffic of provisions and merchandise, the noisy carts, the smelly beasts, the whole swarming proletarian world of work and commerce.²⁵ Its network extends behind the palaces at the levels of their courtyards, stables and storehouses. Canals in the “Two-Level City” had a purely hygienic function. They would carry away the refuse and waste from the residencies and drain the rainwater off from the upper street level. The sewage system was conceived of as a network of interconnected conduits either being buried below ground or running in pipes directly underneath the upper street level. As in the “River City”, the upper streets, being elevated six metres above the ground, would be reserved for “gentleman” pedestrians. They would border the noble facades, being lined with arcades and leading towards the main entrances of the palaces. As Leonardo highlights, these upper streets were meant to be clean and dry, to be wide enough to get sunlight and fresh air (Figure 2.2). For Firpo, what sets Leonardo’s plans apart from other Renaissance “ideal cities” including waterways, was that Leonardo rigidly excludes any animals or vehicle traffic from

²² Leonardo da Vinci, *Lapides*, 1494, in *Renaissance Fables: Aesopic Prose by Leon Battista Alberti, Bartolomeo Scala, Leonardo da Vinci, Bernardino Baldi*, ed. by David Marsh (Tempe, AZ: Centre for Medieval and Renaissance Studies, 2004), p. 307.

²³ Firpo, 'Leonardo as Urban Planner', p. 292.

²⁴ Jean Guillaume, 'Leonardo and Architecture', in *Leonardo da Vinci - Engineer and Architect*, ed. by Paolo Galluzzi (Montreal: Museum of Fine Arts, 1987), pp. 207-86, p. 257.

²⁵ Firpo, 'Leonardo as Urban Planner', p. 296.

the city surface.²⁶ Especially, the Two-Level version may illustrate that Leonardo anticipated today's urban infrastructures, but also points to the social implications that may result from such spatial intervention.



Figure 2 Leonardo, Studies on Ideal Cities, 1487-90.

In response to large pest epidemics in Milan, Leonardo did various studies on a waterway system. It was to serve for sanitation, drainage and was meant to keep transport of all sorts of goods and pedestrian traffic separate from each other. In his study on a Two-Level City on the right, Leonardo further elaborated this principle banning all vehicles from an elevated second story level, which would be reserved for “gentleman” pedestrians.

Leonardo may have been concerned with water and transport circulation, but he also paid particular attention to the movement of traffic and pedestrians. Guillaume points to staircases as being essential to Leonardo's architectural work investigating how to separate different types of circulation within a building. A large number of studies would also investigate the interconnections between the upper and the lower level in the Two-Level City. Staircases in these studies seem to act as locks allowing people to change between levels frequently, while excluding vehicles and animals from the upper level. Their design was so detailed, as Guillaume notes, that Leonardo wanted to abandon squared for round stairwells with spiral stairs. Thereby Leonardo wanted to prevent people from urinating in staircases. To make sure that neither smell or waste invades the clean and airy upper street level, he also planned public latrines to be installed next to each staircase.²⁷ As the spatial organisation of the Two-Level City would determine distinctive functions to either the lower or the upper level, staircases were to control access for the upper streets.

Firpo is ready to admit that most of the drawings and notes on urban matters would reflect upon specific needs of the Renaissance city, but also would respond to the “socio-political requirements” of the Sforza regime.²⁸ In 1493, Leonardo believed the political climate would favour some of his far-reaching interventions. As Firpo notes, the scheme he proposed to Lodovico Sforza would have easily matched the ruler's political purposes. By embellishing and cleansing up the city centre, Sforza could have hoped for a return of the wealthy classes and as a result gaining increased tax revenues.²⁹ Firpo states that Leonardo's plans for a Two-

²⁶ Firpo, 'Leonardo as Urban Planner', p. 296.

²⁷ Guillaume, 'Leonardo and Architecture', p. 257.

²⁸ Firpo, 'Leonardo as Urban Planner', p. 296.

²⁹ Firpo, 'Leonardo as Urban Planner', p. 293.

Level City would have often been misread as a cold, misanthropist project prioritizing aristocratic over common people. Whereas the former would live in a clean, airy and “hygienic” environment, the latter would have been seen to be doomed to live in a dark and filthy underworld level. Firpo rushes to emphasise that Leonardo would not have explicitly excluded specific parts of the population from the upper level and public places. A closer look on the materials would reveal that Leonardo paid much attention to design of the lower levels, so that he could observe nothing “unhealthy or de-humiliating” about them. Firpo likes to see in the lower levels a “service level” optimized for transportation and work, which would be simply treated differently from those areas devoted to “walking, relaxation, churchgoing and socializing.” Leonardo therefore would have established a hierarchy of functions, not one of class or discrimination.³⁰ In his attempt to highlight Leonardo’s activities as an “Urban Planner”, Firpo therefore likes to emphasize Leonardo’s rigidity in prioritizing functions according to his modern faith to heal the city with organisation, technology and innovation. I will deal with the critic on the 20th century “functional city” that would separate functions to distinctive areas in the city while claiming for people’s health and wellbeing later in this text. More convincing than presenting Leonardo as anticipating the modern functional city, seems to me Firpo’s comment that Leonardo would have seen the city as a flexible, open organism, one that was rich in dynamic possibilities.³¹ Is it possible to see Leonardo as the forefather of the functionalist city, but at the same time as a supporter of open-ended, experimental and almost “organic” design processes?

Art historian Martin Kemp suggests, Leonardo would have had no taste for the abstractions of pure philosophy. He would have characterized the latter as a kind of pseudo-knowledge that would begin and end in the mind. Leonardo instead would have placed great value on experiment during his art life, though his understanding was way broader than the systematic manner of modern experimental science. He would have been as happy with proofs derived from observation, as he was with controlled tests in specifically designed set-ups and with the results of thought experiments. Pointing to a letter, in which Leonardo describes himself as a “doctor-architect”, Kemp assures us that Leonardo would have applied such analogies on all scales of his work, from drawings to the designs of cathedrals. For Kemp, it is Leonardo’s working method that would give his architectural designs an “organic feeling”.³² As most of his contemporaries, Leonardo believed in the analogy between microcosmos and macrocosmos. But whereas Thomas More imposed an idealistic form onto his Utopian society, Leonardo seems to draw different conclusions for his own design process.

As Guillaume explains, he would have refused to merely impose analogies to the visual outcomes of his practise. Instead, Leonardo would have constructed analogies between the functional scheme of his designs and the insights he draw from his research on nature and the human body in particular. As he frames Leonardo’s design process:

³⁰ Firpo, 'Leonardo as Urban Planner', p. 301.

³¹ Firpo, 'Leonardo as Urban Planner', p. 301.

³² Martin Kemp, *Leonardo*, 2nd edn (Oxford: University Press, 2011), p. 49.

“Instead of drawing abstract diagrams supposed to reproduce the form of the universe, he studied practical solutions, in keeping with the nature of things: just as man and the earth are vitalized by movements of blood and water, a city should have a system of circulation that provides a pleasant, healthy life for its inhabitants.”³³

For Guillaume it is this aspect of a functionalism that made Leonardo aware for a specific problems in modern urban planning: Circulation of people, goods, filth, water and corps and a solution for it, what we today call our city’s infrastructures.³⁴ I like to highlight such a process, which aims to find specific answers to the health problems of its time and would respond with various tools of spatial intervention. In conclusion, I will address the question how Leonardo wanted to see his designs being implemented within the existing society.

Pedretti confirms the picture of Leonardo as a modern experimental artist. He observes a development from Utopias in the sense of an ideal city of the Quattrocento to a modern design process, based on practical considerations and aiming realistically at a planned objective.³⁵ As part of his proposals for Milan, Leonardo would have suggested that the realization should begin with an experimental section equivalent to one tenth of planned quarter. Leonardo therefore would have tried to apply his method of experimental design to urban planning. According to Pedretti, Leonardo would have forethought an authentic pilot project, which would later develop from its initial function as a “model” into a satellite city.³⁶ Whereas More imposed a spatial form onto his vision of a new social organisation, Leonardo experiments with technology for specific (health) problems. While Thomas More simply assumes people would participate in “profitable games”, excluding any other existing games, Leonardo worked on a progressive realisation of his vision. In my view, Leonardo appears as a modern Urban Planner since he combines the belief in technological progress to improve individuals’ lives, strategies of dealing with authorities, the notion of partial experiments and pervasive technology. He therefore worked on a reform of the city not from scratch, but “from within”, as I will show later, this would set him closer to organic and participatory architects than to modernist functionalists.

³³ Guillaume, 'Leonardo and Architecture ', p. 257.

³⁴ Guillaume, 'Leonardo and Architecture ', p. 258.

³⁵ Carlo Pedretti, *Leonardo, architect* (New York: Rizzoli International, 1985), p. 55.

³⁶ Pedretti, *Leonardo, architect*, p. 57.

The Sanitized City

Many reports on the condition of Britain have documented the inhuman and unsocial conditions of early 19th century cities such as Manchester and London. Friedrich Engels in particular makes me aware that unhealthy physical environments and bad health outcomes for a majority of people were foremost symptoms of the political and economic system. In this section, I will show how early 19th century reformers have discussed a broad range of potential social and political reforms, which the sanitary idea narrows down to the field of technocratic organisation. Haussmann's transformation of Paris, introducing wide and clean avenues, parks, fresh water provision and street lights in the second part of the 19th century has been widely observed as a measure to regain political stability and public order. I will observe Haussmann's Paris as a prototype of a "sanitized city" in which to accentuate the ambiguity of early public health interventions. They have broadened access to health technologies and without a doubt have helped to improve peoples' health, but also increasingly regulate individuals' behaviours and routines. I will therefore underline today's research on "obesogenic environments" claiming to augment and indicate wider social reforms rather than to distract from them.

Discussing the 19th century raw material of urban reforms

19th century cities faced massive social and political problems due to the industrial revolution and an extraordinarily growing population. Health became an essential factor in the perception of the industrial city as is documented in the various reports on the condition of Britain. Before discussing how these reports influenced the measures been taken, I will show how in this early stages many medical men and social reformers have analysed multiple causes for disease and its epidemical outbreaks. They discussed a broad spectrum of raw material for urban reforms apart from insanitary conditions: nutrition, working conditions, trade cycles and tariffs.

At first sight, the correlation between industrial growth, the development of the great cities and peoples' health seems a success story. As Benevolo accounts, from the second half of the 18th century, peoples' life expectancy increased from 35 to 50 within only one hundred years. So did the population of England double from 7,000,000 inhabitants in 1760 to 14,000,000 in 1830. Manchester counted 12,000 inhabitants in the year 1760 and around 400,000 in 1850. London, which was already a city of one million people by the end of the 18th century, counted 2.5 million people in 1851. It had then more inhabitants than any other city before in ancient and modern times.³⁷ Since the 1960s, it is being argued that the main reason for increasing life expectancy and decreasing children's mortality was a general rising in people's living standards. Hardy points to many studies, which would emphasise that people had gained better access to products, services and food as a result of the progresses made in agricultural and early industrial production. McKeown would have shown how improved diet in particular has raised individuals' resistance to infection and so could reduce

³⁷ Leonardo Benevolo, *Die Geschichte der Stadt* (Frankfurt am Main: Campus, 1983), p. 781.

the number of deaths.³⁸ According to Hardy, McKeown would have demonstrated that many of the most fatal diseases had disappeared as a cause of death before medical science developed the techniques of controlling or curing them. He would have concluded that the falling death rates in Britain had remarkably little to do with human intervention up to the early twentieth century.³⁹ To conclude that the overall rising life expectancy proves a general positive effect of industrialisation on urban health seems a big simplification.

Hardy sees McKeown's point prominently opposed by stressing the influence of social intervention through the public health movement. She points out that whereas in general the positive effect of industrial progress on increasing life expectancy would remain unquestioned, his thesis would not reflect health and wellbeing during peoples' lifetime. She states further that a focus on death-rates in health statistics would not refer to the social distribution of any progress made within a population.⁴⁰ To understand the distribution of wealth and closely related to it in the massively growing early 19th century, I will pay more attention to the situation of the poor in the process of urbanisation.

As Kiess accounts, in its initial stages, arriving workers found their homes next to workshops in the medieval centres of the cities. Most would have hunkered down in public lodging houses, before first housing investors began to build new capacities on the last available sites within the old towns. They pleased the enormous need of domiciles by building primitive, cheap and quickly produced cottages. These lodgings hardly were circulated with fresh air, were insufficiently lightened and had neither a supply of fresh water nor a sewerage system. Situated on the backyards of small, longish sites, they were cramped with a crude mix of uses such as one-room-cellars, barns, workshops, shops, stalls between piles of waste and excrements (Figure 3).⁴¹ Rodenstein observes for the early German industrial cities that these initial incremental works would have not been structured by any planning, set aside the credo, to earn as much as possible by investing as little as necessary. That meant to get as many people paying rent on the smallest amount of space. She states that unlike in Renaissance or the age of absolutism, urban planning in these new German boomtowns would have been executed without any strategic or aesthetic considerations. As she puts it, the liberal political and economical climate would have produced a "vacuum of power" in town planning. Decisions would not follow any longer the master plan of an authoritative ruler and were not yet the result from citizens formulating their will.⁴² Benevolo describes the situation for Britain as follows: It would have already become obvious that something needed to be done, but whereas the old methods were inadequate and discredited, new ones had not yet emerged. Whereas he sees early socialist reform movements as crucial for the development of modern town planning, they would have remained ineffective on an urban

³⁸ Thomas McKeown, *Modern Rise of Population*, 1976 cited in Anne Hardy, *Health and Medicine in Britain since 1860* (Houndmills: Palgrave, 2001), p. 9.

³⁹ Hardy, *Health and Medicine in Britain since 1860*, p. 9.

⁴⁰ Hardy, *Health and Medicine in Britain since 1860*, p. 10.

⁴¹ Walter Kiess, *Urbanismus im Industriezeitalter - Von der klassizistischen Stadt zur Garden City* (Berlin: Ernst & Sohn, 1991), pp. 30-1.

⁴² Marianne Rodenstein, *Mehr Licht, Mehr Luft - Gesundheitskonzepte im Städtebau seit 1750* (Frankfurt am Main: Campus, 1988), p. 65.

scale before 1848.⁴³ In this view, the unrestrained industrial and urban explosion put underprivileged workers and their families in a miserable position in the first place.



Figure 3 Punch, A Court for King Cholera, 1852.

Early social reformers discussed a broad range of causes for the large cholera outbreaks and pure health conditions for the urban population in the early 19th century. This caricature illustrates only a few of them: Next to over population, lack of waste removal and decent dwellings, reformers also pointed to mal-nutrition, working conditions and tariffs.

Friedrich Engels gives a large account on the insufficiency of construction and cheap materials used in these new cottages being built in Manchester. They would look neat and substantial at the first sight. But on closer examination, the walls of these cottages would be as thin as it was possible to make them.⁴⁴ Engels goes on accounting on these dwellings citing a report by James Phillip Kay:

“It often happens that a whole Irish family is crowded into one bed; often a heap of filthy straw or quilts of old sacking cover all in indiscriminate heap, where all alike are degraded by want, stolidity, and wretchedness. Often the inspectors found, in a single house, two families in two rooms. All slept in one, and used the other as a kitchen and a dining-room in common. Often more than one family lived in a single damp cellar, in whose pestilent atmosphere twelve to sixteen persons were crowded together. To these and other sources of disease must be added that pigs were kept, and other disgusting things of the most revolting kind were found.”⁴⁵

The industrial boomtown Merthyr Tydfil gives a further impression of how economical interests and urban development were often interconnected. Within years it had developed into a city of 50.000 inhabitants, but also developed the highest mortality rates in the UK.

⁴³ Leonardo Benevolo, *The origins of modern town planning* (London: Routledge, 1967), p. 32.

⁴⁴ Friedrich Engels, *Die Lage der arbeitenden Klasse in England. Nach eigener Anschauung und authentischen Quellen*, first publ. in Leipzig, 1845, in *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970), pp. 80-1.

⁴⁵ James Phillip Kay, “The Moral and Physical Condition of the Working-Class”, 1832, p. 32, cited in Friedrich Engels, *The Condition of the Working Class in England*, first publ. in 1887, trans. by Florence Kelley-Wischnewetsky and Friedrich Engels, ed. by David McLellan (Oxford: University Press, 1993), p. 77.

Two large cholera outbreaks in particular have been related to an insufficient supply of fresh water. As Grant points out, the local ironmasters had established a monopoly of its waters in order to employ their large water wheels. The population therefore had to obtain drinking water precariously from springs and spouts, mostly situated up to a mile distant from where they lived. Especially in summer, when up to hundreds of people were waiting for their turn, those would have provided a meagre and wholly inadequate supply. The desperate shortage of water made people taking their drinking water from stagnant ponds and pools, even though they were polluted by industrial waste such as oil and tar, by horse-dung, and dead animals. Most of the workers' cottages were neither provided with privies nor with cesspools. Their inhabitants made use of chamber utensils, which they emptied in the streets and the river.⁴⁶ The sanitary provision in newly built industrial towns was often as catastrophic as in the old towns.

Engels also reports extensively on the sanitary conditions in London, Liverpool, Birmingham and Edinburgh. After his accounts on the "chaos" in the old town of Manchester, he asks:

"And how could the people be clean with no proper opportunity for satisfying the most natural and ordinary wants? Privies are so rare here that they are either filled up every day, or are too remote for most of the inhabitants to use. How can people wash when they have only the dirty Irk water at hand, while pumps and water pipes can be found in decent parts of the city alone?"⁴⁷

For the 24-year-old Friedrich Engels it had been perfectly clear, who caused the "frightful condition of this Hell upon Earth". It would not have been the "helots [slaves] of the modern society, who can be charged for the hygienic condition of their dwellings, it was the *industrial epoche!*"⁴⁸ Earlier in his report, Engels states that the sanitary conditions would be merely one factor among the "sort of subsistence", which society would give to working people.⁴⁹ Peoples' clothing would be "little adapted to the climate" and would easily cause colds and worse.⁵⁰ He went on with the poor quality and insufficient quantity of the nutrition due to small incomes:

"The potatoes which the workers buy are usually poor, the vegetables wilted, the cheese old and of poor quality, the bacon rancid, the meat lean, tough, taken from old, often diseased, cattle, or such as have died a natural death, and not fresh even then, often half decayed."⁵¹

⁴⁶ R. K. Grant, 'Merthyr Tydfil in the Mid-nineteenth Century: the struggle for public health', in *The European Cities & Technology Reader - Industrial to Post-Industrial City*, ed. by David Goodmann (London: Routledge, 1999), pp. 10-6, pp. 10-2.

⁴⁷ Engels, *The Condition of the Working Class in England*, pp. 63-4.

⁴⁸ Engels, *The Condition of the Working Class in England*, p. 65, italics in the original.

⁴⁹ Engels, *The Condition of the Working Class in England*, p. 39.

⁵⁰ Engels, *The Condition of the Working Class in England*, p. 79.

⁵¹ Engels, *The Condition of the Working Class in England*, p. 80.

Early social reformers, doctors and socialists well indicated multiple causes for disease. As Hamlin indicates, many of them being doctors themselves they pointed to the massive harm caused by factory work. They pointed to dramatic accidents, but mainly stressed the permanent debilitating influence of factories, which would undermine workers' health, especially those of children. Samuel Smith has emphasised how the damage caused by industrial factories would not show up as a specific disease but as a continual predispose. Workers were pale and sickly and would have appeared out of condition. Charles Thackrah called them "strangers to health. They live, 'tis true, but this life is not full life. With many it is but a state of lingering disease."⁵² As Hamlin puts it, they discussed a wide range of raw material of potential reforms in various fields such as nutrition, working conditions, trade cycles and tariffs.⁵³ Before turning to potential measures to reform the industrial city, it is important to note that the chronic bad health of a majority of people in the early 19th century was caused by multiple factors, which was discussed by early reformers.

Medical doctrines and small villages

Johanna Bleker points to the medical doctrine under which the evilness of urban life would have been lamented long before the massive growth of the cities in the 19th century. Doctors and physicians would have believed strongly in the traditional credo of a healthy rural life. As she points out, their opposition against the city would not have been based on empirical investigations, but on the thesis of medical writers, who would have seen the complex in a confused mixture between non-reflected cognition and critic of civilisation.⁵⁴ Bleker points to the fact that in Germany there were no statistics that could have underlined arguments for or against cities in terms of mortality rates before the 1870s. The first statistics in 1888, ironically, would have coincided with the time when mortality in city centres went for the first time below that in rural areas.⁵⁵ Hardy confirms this picture for England, where it would have been only since the 1880s that preventive healthcare would have had a "satisfactory" level of information on infectious diseases.⁵⁶ Before that period and certainly in the first half of the 19th century, there was no scientific basis that could have shown the distribution of mortality rates and infectious diseases regarding urban or rural areas.

Benevolo points to the early 19th century when the situation became not only unacceptable but also provoked critique and protest as the origins of modern town planning. He describes how "Socialist Utopians" such as Robert Owen and Charles Fourier wanted to think of ways to plan new towns from the scratch in response to the appalling situation. Both envisioned small, self-sustaining communities for up to 2,000 inhabitants. They were meant to be built near existing industrial cities in order place them in contrast to the existing unrestrained

⁵² Cited in Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain 1800 - 1854* (Cambridge: University Press, 1998), p. 39.

⁵³ Hamlin, *Public Health and Social Justice*, p. 13.

⁵⁴ Johanna Bleker, 'Die Stadt als Krankheitsfaktor. Eine Analyse ärztlicher Auffassungen im 19. Jahrhundert', *Medizinhistorisches Journal*, XVIII (1983), pp. 119-20.

⁵⁵ Bleker, 'Die Stadt als Krankheitsfaktor', p. 130.

⁵⁶ Anne Hardy, *The Epidemic Streets: Infectious Disease and the Rise of Preventive Medicine, 1856-1900* (Oxford: Clarendon Press, 1993), p. 6.

capitalistic system.⁵⁷ Kiess points to Owen being influenced by the sensualistic theories of Godwin, which would hold that all external stimulation – education, working conditions and the environment – would be more important to the formation of character and behaviour than one’s inner talents and gifts. Owen would have seen in his New Lanark of 1817 as a social experiment, which for him proved that to design of a better environment would also result in happier and healthier people.⁵⁸ Florian Rötzer adds that even though modern Utopias since the Renaissance would have taken place in an urban environment, they would have envisioned a rather restrained form of urbanism. As in More’s Utopia, in which a new city had to found, when a certain amount of inhabitants had been surpassed, Utopian planning would have hardly dealt with great cities or urban agglomerations. Especially in Fourier’s and Owen’s designs, Rötzer sees a moderate density prevailing, through which its inventors would have had the feeling of staying in control of everything that would go on.⁵⁹ Even though hygiene was to play an important role to these communities and their daily lives, their tendency towards small and decentralised organisation, seems less motivated by new medical insights. It appears to follow the traditional medical dogma against the great cities and way more so the political and social agendas of their planners.

Owen’s and Fourier’s response to the great cities - to plan healthy and social villages could have hardly been informed by any scientific investigations on the merits of anti-urbanism for peoples’ health. But as I will show later, it would not be the last time that architects and town planners would respond to the unhealthy conditions of the 19th century cities with distinctive anti-urban visions of healthy living areas. As Hillmann observes, Engels’ studies of 1845 became the influential picture of the situation. It would have been seen as an exemplary study of “environmental analysis” among sociologists and would have unfolded its impact way beyond the discipline of planners of the 1920s up until the 1960s.⁶⁰ It therefore became influential and partially triggered the anti-urban vision of healthy living emerging from the 1920s functionalists. While Engels clearly realized the broad range of potential urban reforms, I would like to pay more attention why he put such an emphasis on sanitary conditions.

Engels enjoyed letting his opponents argue for his own accounts. He openly cited bourgeois, liberal entrepreneurs and politicians. With James Phillip Kay he cited one of the key figures of the bourgeois health reform movement, who as Hamlin accounts, would become assistant commissioner to the Poor Law Commission in 1838 and would claim credits for having developed the “sanitary idea”.⁶¹ In 1845, Engels merely comments Kay would confuse the working-class in general with the factory workers, but otherwise would have written an excellent pamphlet.⁶² As he put it himself, Engels was looking out for “everything, which

⁵⁷ Benevolo, *The origins of modern town planning*, p. 32, pp. 39 ff.

⁵⁸ Kiess, *Urbanismus im Industriezeitalter*, pp. 105-10.

⁵⁹ Florian Rötzer, *Die Telepolis - Urbanität im digitalen Zeitalter* (Mannheim: Bollmann, 1995), p. 128.

⁶⁰ Günter Hillmann, 'Einführung', in *Über die Umwelt der arbeitenden Klassen: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970), pp. 7-24, p. 12.

⁶¹ Hamlin, *Public Health and Social Justice*, p. 107.

⁶² Engels, *Die Lage der arbeitenden Klasse in England*, p. 74.

accelerates the course of the disease.”⁶³ By agitating against the industrial city and the industrial form of urbanism, he sought to enforce and animate the socialist movement. To focus on the environment and its influences on peoples’ health was to visualize what political system was to overcome.

However, it would be wrong to characterize Engels as anti-urban. In 1848, he was annoyed by the localism and primitive culture of rural people at the same time. Rural peasants would have been so reduced to being focused on their families, to stable and uniform lives, that they would simply miss the big movements of the time.⁶⁴ Urbanism as form of cultural and political exchange would accelerate the labour movement:

“The great cities are the birthplaces of labour movements; in them the workers first began to reflect upon their own condition, and to struggle against it; in them the opposition between proletariat and bourgeoisie first made itself manifest; from them proceeded the Trades Unions, Chartism, and Socialism. The great cities have transformed the disease of the social body, which appears in the chronic form in the country, into an acute one, and so made manifest its real nature and the means of curing it.”⁶⁵

Almost thirty years later, in 1872, in his article series *The Housing Question*, Engels once more wanted to clarify that it was the social circumstances that made people ill. Overcrowded housing, minor wages, and massive health problems for him were “diseases of society“, which only could be cured by abolishing the capitalistic system as a whole.⁶⁶ He claimed that the great cities needed be abolished, but only in favour of a spatial and social organisation that would level down the differences between town and country. In Fourier’s and Owen’s work, Engels acknowledges that they would neglect the difference between town and country by providing an “urban” cultural and economic exchange on the countryside.⁶⁷ Whereas many 1920s anti-urban architects and planners seem to refer to Fourier and Owen for their decentralised villages, Engels highlights the latter villages’ “urban” qualities.

Engels was convinced that the housing problem as one specific symptom was not to be solved in the interest of workers as long as the capitalistic system prevails. Engels was not interested to solve the housing question or any partial questions since once this big project would start, there would be surely more important topics to deal, namely how to reorganise a

⁶³ Engels, *The Condition of the Working Class in England*, p. 134.

⁶⁴ Friedrich Engels, 'Von Paris nach Bern', Manuscript Oct. & Nov. 1848, in *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970), pp. 36-52, p. 44.

⁶⁵ Engels, *The Condition of the Working Class in England*, p. 133.

⁶⁶ Friedrich Engels, *Zur Wohnungsfrage*, first publ. Leipzig, 1872, in *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels* (Gütersloh: Bertelsmann, 1970), pp. 159-228, p. 187, translation retrieved from <http://www.marxists.org/archive/marx/works/1872/housing-question/ch02.htm>

⁶⁷ Engels, *Zur Wohnungsfrage*, p. 187.

different economic system.⁶⁸ Engels criticised philanthropic reform projects, which would claim to be social, but would follow capitalistic interests by separating and isolating the workers on rural suburbs.⁶⁹ For Hillmann, in contrast to his studies in the 1840s, in 1872 Engels would have been ready to stand ground for the communist principles, which he and Marx had meanwhile fully developed and had become popular for. Engels would have felt reassured by the first successes of the labour movement, which was achieved precisely within the great cities such as Paris.⁷⁰ While in the 1840s, Engels seems to paint a picture of the unhealthy cities to make people aware of the necessities for change, later Engels emphasises the potentials of urbanism to foster cultural exchange and solidarity. Engels did not come up with a specific formula for town planning or housing, but aimed to stimulate a process of political and social change. Even though he painted one of the most influential pictures of the unhealthy city, I like to highlight that for him urbanism would trigger this process.

The birth of the sanitary idea

The sanitary movement in Britain is closely connected to the life reformer Edwin Chadwick. He was author of the influential Sanitary Report in 1842, which became a founding text of public health policies. It is important to note that Chadwick also co-authored the highly unpopular new poor laws in 1834, which had anticipated far-reaching reforms of the collapsing poor relief system. The commissioners sought to prevent people from seeking assistance by making sure that life within these institutions was less eligible than outside. Architecture was key to achieve this goal: The new workhouse was to a deterrent symbol towards the outside and would install a disciplinary regime towards its inmates. Chadwick in particular was more concerned with prevention of poverty and illness than with assistance. I will show how some of his remarks on sanitary technology underline what Foucault has described as the principles of power relations in modern societies. His sanitary technology was to provide workers with the means for body hygiene, but at the same time Chadwick hoped it would make visible their cleanliness and morality. For the small price of a sanitary upgrade, the elites in charge hoped to re-establish political and social order since it tied cleanliness close together with morality. It transferred the discussion about health from a social and political terrain to that of engineering and urban planning. Any specific symptom of the unhealthy city could be addressed by progress in technology and organisation, while the spatial and social structure of the city could remain untouched.

Michel Foucault has pointed to the institutions of the “great confinement” as one initial response by the municipal authorities to poverty, disorder and diseases in modern cities since the 1656 decree setting up the landmark ‘Hopital Generale’ in Paris. His concept holds that public buildings such as hospitals, poorhouses, orphanages, asylums or prisons would have been foremost to collect and confine subjects that could bring chaos into the social order. Beggars, vagabonds, madmen and the disorderly would have formed their regular population.

⁶⁸ Engels, *Zur Wohnungsfrage*, p. 187.

⁶⁹ Engels, *Zur Wohnungsfrage*, pp. 194 ff.

⁷⁰ Hillmann, 'Einführung', pp. 22-4.

Foucault describes their architecture as being inspired by the geometry of fortresses, since their inmates were to be observed and spatially fixed. Their appearance would have been given a palace-like ostentation to set a visible sign of the political powers. Such enclosed institutions would have turned inwards merely to arrest, break communications and suspend time. But during the 19th century, there would have developed the need for architectures that would also allow for an internal, articulated and detailed control in order to categorize and transform its inmates.⁷¹ He famously uses Jeremy Bentham's Pauper Panopticon from 1797 as an architectural diagram for such "disciplinary machines" aiming to enhance individuals' utility and obedience. More than specific building types, however, Foucault is interested in the principle of power relations, which he sees pervading in the social body. He calls such principle "panopticism" which would serve to improve the exercise of power by making it lighter, more rapid, and more effective. Foucault foresees a "disciplinary society" to come, in which people would have embodied the feeling of being constantly observed, valued and categorised and in response would adjust their behaviour.⁷² His analysis is important to bear in mind when analysing today's persuasive technology, which claims to support individual behaviour change on the basis of voluntary participation. In the following, I will observe how Chadwick's plans for a sanitary reform starting off from the new workhouses foremost intended to serve the established powers.

For Thomas Markus, it was precisely the relative good measure of comfort, tolerant rules, and often civilised working conditions, which in the eyes of the New Poor Law commission would have made old workhouses far too desirable.⁷³ As a result, the commission intended to stop the old system including partial poor relief or any assistance outside its institutions and proposed the new principle of "indoor poor relief." Benevolo explains, the proposal would have foreseen to send every man without waged employment to workhouses under the premise that their lives should be made "less eligible" than a live outside.⁷⁴ Architecture played a key role in achieving this goal. As Assistant Commissioner, Sir Francis Head specifies in his *Plan of a Rural Workhouse for Five Hundred Persons*:

"[The] construction of an Rural Workhouse, the height of the rooms, the thickness of the walls, etc., shall not exceed the dimensions of the cottage of the honest, hardworking, independent labourer; well built, substantial, rooms being a luxury, as attractive to the pauper as food and raiment."⁷⁵

After the bill had passed, within a short period an extraordinary rate of buildings in this fate were erected. As Markus accounts, many architects would have followed for example Kempthorne's cruciform models, which the contemporary architectural press praised to

⁷¹ Michel Foucault, *Discipline and Punish - The Birth of the Prison*, trans. by Alan Sheridan (London: Penguin Books, 1977), pp.172 ff.

⁷² Foucault, *Discipline and Punish*, p. 205-9.

⁷³ Thomas A. Markus, *Buildings and Power. Freedom and Control in the Origin of Modern Building Types* (London: Routledge, 1993), p. 99.

⁷⁴ Benevolo, *The origins of modern town planning*, p. 90.

⁷⁵ Cited in Markus, *Buildings and Power*, p. 142.

“excellently” arrange separation and classification.⁷⁶ Walls, partitions, iron grills and gates sliced up the wings and courts and the classification of inmates was enforced with an increasing precision (Figure 4). The idea of the “general mixed workhouse” was to embody many different institutions (schools, orphanages, bride wells, prisons, hospitals, alms houses, asylums and factories) under one roof. Within its confines, I like to highlight, Foucault’s two images of discipline seem to collide. On the one hand, it should be a “pauper palace”, an economically efficient coulisse to deter people from poor relief. On the other hand, it started to become a sophisticated apparatuses to transform its inmates.

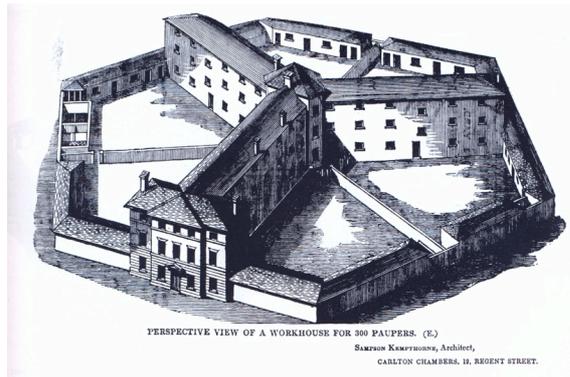


Figure 4 Sampson Kempthorne, A Workhouse for 300 Paupers, 1835.

Aerial perspective of Kempthorne’s model workhouse for 300 inmates. Courts divide inmates into sexes, adults and children, and first and second class. The hexagonal boundary contains workshops and service buildings, while the Y-shaped main building houses “day rooms”, kitchen and school on the ground floor. On the upper floor the adult’s dining room telescopes into the chapel and the several bedrooms. The central master’s quarters open into these rooms and overview each court.

The developing empirical science was to find the most efficient economical standards in poor relief. Whereas Bentham would have already admired Rumford’s experiments in scientific nutrition, leading to the infamous “Rumford soup”, Chadwick further cut the expenses for workhouse diets based on own “research” in prisons that less food would be healthier than more.⁷⁷ Apart from the provision of lower material standards, the reformed workhouses imposed a “disciplinary regiment”, developing Bentham’s principle significantly further. The discipline of work, a rigid timetable, separation of the sexes (including married couples other than the aged), sometimes even separation of young children from their mothers, and abstinence from tobacco and alcohol would have been key elements of the proposed New Poor Law.⁷⁸ It seems important to note that the building type of the mixed workhouse soon was abandoned. So many further refinements of classification had been introduced to provide for each “class” of inmates a different day, night and outdoor space, that the resulting layouts were expensive and caused immense planning problems. As early as 1849, the City of London workhouse adopted a more dispersed model, with many small, detached blocks on one site. In 1868, separate buildings on one site were recommended and by the end of the

⁷⁶ Markus, *Buildings and Power*, p. 143.

⁷⁷ Hamlin, *Public Health and Social Justice*, pp. 31-2.

⁷⁸ Markus, *Buildings and Power*, p. 141.

century, the Commission recommended separate sites throughout the city.⁷⁹ In Foucault's view, the "pauper palace" loosing its power towards the outside by spreading its institutions throughout the city, may be an indication that the principle of panopticism would take over.

Chadwick might have agreed with the strict "disciplinary regime" within workhouses, however, he seems to be more concerned with its effect towards the outside. Having cut the costs of diets, Chadwick was co-responsible for the lower material standards that caused fever and many diseases in the workhouses. According to Hamlin, Chadwick would have ignored voices, which pointed to the catastrophic situations in the new workhouses. As an assistant poor law commissioner noted: "The successful workhouse is the empty workhouse."⁸⁰ Reforming the old workhouse did not aim for a more effective new workhouse, but they targeted the public: They were to provide a persuasive picture towards the outside that would effectively deter paupers from seeking assistance, with a minimum of costs for the majority.

The birth of the sanitary movement is closely connected to the history of the workhouse reforms. In 1838-1839, the Poor Law Commission was asked to investigate on the causes of a fever spreading in London's poor East End. Chadwick asked three physician-friends to join the investigation; one of them was Dr James Phillip Kay, who had become an assistant commissioner due to his report of 1832. As Hamlin notes, Kay played a key role in the making of the Sanitary Report, which were to warrant Chadwick's claim to represent the views of practitioners. Hamlin states that the three doctors were to give to Chadwick's case study the medical authority for his previously intended outcomes.⁸¹ Initially, the involved practitioners would have mentioned a wide range of causes for the fever outbreak including malnutrition, fatigue, cold, and damp. But Kay and Chadwick would have been highly selective with *some* explanations and Kay's final list would leave out factors such as poor nutrition and emphasised keywords such as drainage, filth, and other physical causes. Kay would later claim credits for this selective compilation as the "sanitary idea".⁸²

As Hamlin suggests, it seems likely that the reports would have been undertaken less to facilitate some public actions than to undermine others. Politically, the focus on sanitation would have been a counter strike to the upcoming forces of Chartism, who fought for more participation for the working class, and claimed for medical relief (including food) for those who asked for it. Chadwick would have been extremely successful in saying that the lack of fresh water and sanitary provision would have caused the fever outbreaks. He was commissioned to enlarge the investigation to the whole country.⁸³ According to Hamlin, the making of the reports from 1838-39 shows why Chadwick would have become one of the most effective writers of these essay-like reports, which were so widespread among reformers of very different political agendas. He would have produced and compiled empirical, data to

⁷⁹ Markus, *Buildings and Power*, p. 145.

⁸⁰ Hamlin, *Public Health and Social Justice*, p. 32.

⁸¹ Hamlin, *Public Health and Social Justice*, p. 85.

⁸² Hamlin, *Public Health and Social Justice*, pp. 107 ff.

⁸³ Hamlin, *Public Health and Social Justice*, p. 103.

underline his political mission and mixed his surveys with features on social, moral and physical conditions. In 1842 this investigation led to the “Report on the Sanitary Conditions of the Labouring Population“, which became a foundational text of modern public health.⁸⁴ Unlike for instance Engels’ studies of 1845, the Sanitary Report excluded economical or social causes for disease.

The success of Chadwick’s “sanitary idea“ cannot be explained without accounting on the political agenda behind it. Chadwick attested that unclean physical conditions have negative effects on the moral behaviour, varying from political agitation, immoral sexual activity to alcoholism. The strong connection between cleanliness and morality was summed up in his credo: “Cleanliness comes next to godliness“. As Rodenstein suggests, he would have successfully linked environmental improvement with an expected increase in performance by industrial workers. That would have saved him the support by the political and economical elite. The distribution of water closets and canalisation would not only stop spreading “pauperism“, but also help to impose the bourgeois hygienic and moral lifestyle on the working class people. Public health initiatives would have been sold through the following formula: For the small invest of bigger, cleaner lodgings with fresh water provision, the manufacturers might expect better health and discipline of workers, necessary for modern industrial labour.⁸⁵ As Anne I. Hardy puts it, Chadwick’s focus on sanitation would have transferred the health discourse from a social and political to an engineer terrain, in which occurring problems could be solved by technical progress.⁸⁶ Despite the improvements for many people, it is important to note that they were bought with the price of wider political or economical reforms.

Markus attests that hygiene would have been the natural focus of “reformatory regimes“. Its reform attempts would target both body and soul and the sanitary idea would be able to overcome spatial boundaries. Within the boundaries of institutions, disciplinary as hygienic regimes could be enforced by coercion. Outside of their confines, policies would have to apply different technologies of “persuasion”.⁸⁷ Markus refers to the development of public hygienic facilities, baths and washing houses for the poor, which had developed from the 1840s in Britain. Their users were segregated regarding sexes and classes and distributed with different fees and entrances. The layouts for the poor did not only include showers and bathing basins, but also washing facilities for clothes, drying and ironing rooms and a wash-house for infected clothes. Within these public buildings the problem of “sociability“ occurred for the authorities, which spent much money in order to install individual washing cubicles, in order to prevent users to socialise and agitate against the authorities (Figure 5). Chadwick would have been particular suspicious of any technology of “sociability“ - were it public washhouses, pumps or ovens. In his view, it would have been best to avoid any

⁸⁴ Hamlin, *Public Health and Social Justice*, p. 84.

⁸⁵ Rodenstein, *Mehr Licht, Mehr Luft*, p. 78.

⁸⁶ Anne I. Hardy, *Ärzte, Ingenieure und städtische Gesundheit* (Frankfurt am Main: Campus, 2005), p. 90.

⁸⁷ Markus, *Buildings and Power*, p. 146.

arrangement, which brings families into close contact with each other.⁸⁸ Therefore water provision must be provided in each worker's home. Chadwick's concept of providing wider access to health technology at home was as well one of partitioning and separation.

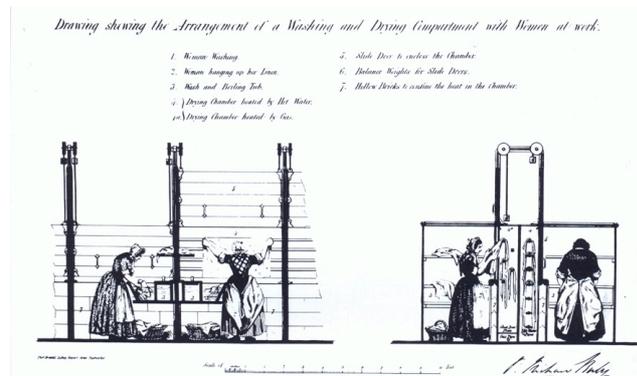


Figure 5 Baly, Washing and drying compartments, 1852.

Drawing showing the highly mechanised individual washing compartments for a public washhouses. The sanitarian Chadwick was suspicious of all technologies of sociability such as washhouses, pumps or ovens and hence supported fresh water supply and water closets for each household.

Chadwick suggested that factory owners in the future might inspect the morality, cleanliness and discipline of their employees by simply walking through the streets and must not visit them in their homes anymore. In his view, the distribution of water provision, water closets and public washhouses would enable anyone to wash clothes and their bodies. Therefore a quick glance on their workers' appearance would document not only their body hygiene, but also their moral discipline.⁸⁹ Hamlin suggests, the making of the Sanitary Report indicates that Chadwick's public health reforms were based on an ideological manifesto, rather than empirical surveys. As he puts it, far from representing any kind of radicalism it was thoroughly conservative in seeking to solve a problem through minimal changes maximally acceptable to established interests.⁹⁰ Sarasin sums up the ambiguity of public health care neatly: Medicine and hygiene had been discovered as a key instrument for imposing the moral standards of bourgeoisie onto the working class. Public health policies would have helped to protect citizens from the greed of private entrepreneurs and from cholera epidemics. At the same time, they would have helped to regulate the physical existence of people up to many aspects of everyday life.⁹¹ I have described the birth of the sanitary idea as well using spatial strategies what Markus has called persuasive architecture and Foucault has described as the principles of power relations. In the next section, I will show how many of these principles are being materialised in Haussmann's Paris. To present it as a "sanitized city" will illustrate the dangerous alliance between reformative regimes and technocratic urban planning, but also show early attempts to subvert and augment its mechanisms.

⁸⁸ Markus, *Buildings and Power*, pp. 156 ff.

⁸⁹ Hamlin, *Public Health and Social Justice*, p. 178.

⁹⁰ Hamlin, *Public Health and Social Justice*, p. 187.

⁹¹ Philipp Sarasin, *Reizbare Maschinen - Eine Geschichte des Körpers 1765-1914* (Frankfurt am Main: Suhrkamp, 2001), p. 115.

Haussmann's Paris, flaneurism and a health-orientated stroller club

In the years following the European revolutions of 1848, in various countries conservative regimes regained power. As Benevolo accounts, the new Tory governments of Disraeli in England, Bismarck in the newly unified German states and the Second Empire under Napoleon III in France would have abandoned the long tradition of non-intervention by the State in the private sector. They enforced a transition from what he describes as the “liberal city“ such as early 19th century London in which Chadwick had to fight for his plans to implement his reforms, to an era of the “post-liberal“ city with vast town building activity.⁹² It was the bureaucrat and city planner Haussmann, who would make Paris a model for many modern cities in the whole world. As Chadwick's “sanitary idea”, Haussmann's large-scale intervention followed foremost the political agenda of the established power and was hardly concerned with peoples' health. I will present Haussmann's Paris as a prototype for a “sanitized city” in which to accentuate the ambiguity of urban health reforms.

As one of his first tasks, Haussmann implemented a range of urban technology: Sewers, water mains, gas lighting and public transportation. Several private interests had competed for being in charge of these services, but Haussmann insisted on public control and his view prevailed. Paris existing hydraulic network was doubled in size and the amount of fresh water supply was tripled. The sewer system was completely rebuilt in the same period of time and the number of gas jets for public lighting was tripled. A service of horse drawn omnibuses and a cab service were introduced. Haussmann modified Paris' old street network cutting through the medieval quarters in all directions and removing 50 kilometres of the old, narrow streets. He would become known as the “demoliseur“.⁹³ Haussmann enforced the development of Paris' “secondary“ infrastructure, building public institutions as schools, hospitals or prisons, markets and parks. Four large public parks had been opened up, among them the “Bois du Boulogne“ in the Western part of the city and the “Bois de Vincennes“ in the East of Paris.⁹⁴ He therefore introduced a large amount of these services and urban infrastructure that we consider today as crucial for the life in dense populated formations.

Giedion, the Swiss secretary of the International Congress of Modern Architects (CIAM) of the 1920s and 30s, has seen Haussmann's project as distinctively modern. All buildings on chief streets, for example around the Place d l'Etoile, would have been obliged to have unified and neutral, facades. They would have featured high French windows, with accents provided by lines of cast iron balconies like those used in the Rue de Rivoli under Napoleon I. Whereas many contemporaries found the new streets boring and dull, Giedion admires Haussmann's rigidity of “neutral facades and general uniformity”.⁹⁵ For Giedion these facades combined with the wide pavements would make the streets themselves, not squares

⁹² Leonardo Benevolo, *The history of the city* (London: Scolar Press, 1975). p. 765

⁹³ Benevolo, *The history of the city*, p. 787.

⁹⁴ Leonardo Benevolo, *The European City*, trans. by Carl Ipsen (Oxford: Blackwell, 1993), p. 172.

⁹⁵ Sigfried Giedion, *Space, Time and Architecture - the growth of a new generation* (Cambridge, MA: Harvard University Press, 1941), p. 769.

or single buildings dominate the scene. However, more than with the urban street life, I suspect, Giedion was concerned with Haussmann's cult de l'axe, which would allow people catch a glimpse of nature in the city. Whenever possible, he states, Haussmann would have tried to offer great views on either restored historical buildings or newly erected modern monuments such as the Gare de l'Est. For Giedion, these chief streets were only just too long, these monuments and fixed end points of the views would blur away in the distance (Figure 6).⁹⁶ Key for Giedion was what would await behind that blur in the distance in Haussmann's wide boulevards—the promise of a life close to nature for the masses.



Figure 6 Felix Thorigny, Boulevard Malesherbes - Paris, ca. 1860.

Boulevard Malesherbes in Paris: Neutral facades, tree lined, clean & wide pavements, great views towards the countryside.

Giedion was a great admirer of Haussmann, who would have been doomed to the tragedy of any great planner that his undertakings could only be justified by the future. For Giedion, Haussmann's great transformation ultimately would have sought "to enable a great mass of people to live outside of the city."⁹⁷ For all those, who would remain in the city centres, Haussmann would have introduced the parks. Giedion states Haussmann's "great talent as an organizer" would be still evident in the great parks of Paris, of which he gives the following description (Figure 7):

"They derived from that class of English landscape gardens which imitated nature, often with romantic aim, encompassing within their limits miniature mountains, valleys, lakes, and brooks. Their function was to give Paris the lungs that it lacked. They were designed for the *promeneur*, the workman on his day off, the Sunday stroller, who was thus enabled to take the air along their broad paths like a seigneur walking in contemplation through his estate."⁹⁸

Giedion emphasises Haussmann introducing views towards the countryside, but also his introduction of cultivated nature right to the city in the form of parks. The tree-lined

⁹⁶ Giedion, *Space, Time and Architecture*, p. 770.

⁹⁷ Giedion, *Space, Time and Architecture*, p. 773.

⁹⁸ Giedion, *Space, Time and Architecture*, p. 760, italics added.

pavements, which had been implemented into the city, would meet people half way on their track out of the city. The famous machine for transplanting full-grown trees might illustrate how the cultivated, engineered nature made its way into Haussmann's Paris. As Giedion explains through its tree lifting mechanism thirty-year-old trees would have prang up on the boulevards overnight.⁹⁹ I like to stay for brief moment with this snapshot of Haussmann's Paris: A white, uniform facade, forming a long Boulevard with wide, clean pavements, aligned with trees, in which all dirt and smell is flushed away in a hidden infrastructure of canals and sanitary tubes. It appears as the very materialisation of Chadwick's "sanitary idea" and yet I like to throw more light on its political motivations.



Figure 7 Bois du Boulogne, ca. 1860.

The Bois du Boulogne, which Haussmann modified and enlarged as one of the green lungs of Paris. In such strips of nature close to the city, the German physician Klenke describes, that members of what he called "Morgenpromenanden-Vereine" (Morning Stroller Club") would meet to stroll early in the mornings in order to keep fit.

Napoleon III had been to London in the 1830ies and 1840ies and mentioned the public works on parks and infrastructures by the sanitary movement. According to Benevolo, the cleaning up of the old quarters and alleys "intended to facilitate *both* sanitary measures and troop movement." Haussmann would have operated with the help of the Senate decree of 1852, authorizing expropriation by executive order, but also with the 1850 public health law on his side.¹⁰⁰ However, as I have shown in the making of the sanitary idea, public health measures have been used to pursue political agendas in such reformative regimes. The spatial transformation itself has been seen as a repressive policy seeking to regain urban order. The wide boulevards intersected and demolished especially those narrow streets of the old Paris, where the socialist uprisings of 1848 had been particularly successful. As Engels notes in July 1848, the army could have hardly entered the curved, narrow labyrinth streets, in which barricades had been erected very quickly and each house would have become part of the resistance.¹⁰¹ Haussmann himself emphasized in his *memoires* in 1893:

⁹⁹ Giedion, *Space, Time and Architecture*, p. 758.

¹⁰⁰ Benevolo, *The European City*, p. 172.

¹⁰¹ Friedrich Engels, 'Die Junirevolution - Paris 1848', first publ. in "Neue Rheinische Zeitung" (1 + 2 July 1848), in *Über die Umwelt der arbeitenden Klasse: Aus den Schriften von Friedrich Engels*, ed. by Günter Hillmann (Gütersloh: Bertelsmann, 1970), pp. 151-8.

“That was the effective dissection of the old Paris, this district of revolts and barricades, through wide, central streets, by cutting through this unusable labyrinth.”¹⁰²

Where Chadwick had transferred the social discourse on health to the terrain of engineering and urban planning, Haussmann seems to have taken over. As Benevolo puts it, Haussmann gave himself the aura of a pure administrator, who claimed to objectively and independently manage the necessary urban reform works. Haussmann would have set the pattern for a “town-planner as a specialist worker, who declines all responsibility for initial choices,” and precisely therefore would serve the established authorities.¹⁰³ Haussmann’s views had been strictly conservative: Anyone, who would not appreciate the “great principles” of Napoleon, could not expect any acceptance by him.¹⁰⁴ Haussmann agitated against the slums of Paris, yet he emphasised their instability and insecurity, and hardly their unhealthy condition for the people living there.

Several cultural changes have also been important within the development of the “sanitized city“. The French historian Alain Corbin points to an important cultural precondition for its success in the emerging interest in cleanliness and hygiene by the bourgeois society. He speaks of a “revolution of smell perception“ between 1760 and 1840. Unpleasant smell ever since had warned of disease, but the discovery of gases by medical-chemical research would have enforced the increase of sensitiveness and attention towards smell. For Corbin, bourgeois sanitary campaigns in the 19th century had mainly the aim to abandon all annoyance by smell out of the public spaces.¹⁰⁵ Moreover, the increasing importance of personal hygiene within the bourgeois class sought to be expressed and represented in the city’s appearance. Anne I. Hardy points out that the actual integration of fresh water provision and a sewage system in rich German bourgeois cities had been driven by a competitive aura of technical progress and what was considered as civilisation. In the 1860s, the sanitary movement as well as urban technology would have become a prestigious symbol of modernity. She sees health threatening cholera outbreaks as a catalyst rather than an actual cause.¹⁰⁶ Haussmann’s Paris to me looks like the ”sanitized city“ per due to a diffuse mix of cultural and political circumstances in which public health seems to have played only a marginal role.

I have stressed the ambiguous character of early public health policies earlier in this text: On the one hand, urban reforms do have the positive impact for individuals’ health. On the other hand, the same reforms produce a combination of persuasive architecture and pervasive technology, which intervene into people’s everyday life. Haussmann’ Paris needs to be seen

¹⁰² Memoires du Baron Haussmann, 2nd edition, Vol. 3 (Paris, 1893), p. 54, transl. by MK, cited in Kieß, *Urbanismus im Industriezeitalter*, p. 120.

¹⁰³ Benevolo, *The origins of modern town planning*, p. 135.

¹⁰⁴ Cited in Benevolo, *The European City*, p. 171.

¹⁰⁵ Alain Corbin, *Pesthauch und Blütenduft. Eine Geschichte des Geruchs* (Berlin: Wagenbach, 1984) quoted in Rodenstein, *Mehr Licht, Mehr Luft*, p. 94.

¹⁰⁶ Hardy, *Ärzte, Ingenieure und städtische Gesundheit*, p. 375.

as a transitory stage for public healthcare, which would increasingly embrace urban design. I will conclude this chapter with two very different figures which emerge within the sanitized city and may point to early forms to protest and augment such authoritative regimes: On the one hand, I will discuss briefly the figure of the anti-bourgeois flaneur, who protested against the modern society leading a turtle through the arcades. On the other hand, I will conclude members of “Morning Stroller clubs”, who flee the scientific bio-medical medicine using the newly provided parks as playground for their fitness regiments.

There had been many literates within the critics of Haussmann’s Paris. Its straight boulevards and neutral facades were nothing but boring and stupefying for them. Charles Baudelaire was one of these critics as documented in his famous work, “The flowers of Evils“. After a stroll over the building sites around the Louvre, he mourns over the loss of his beloved old Paris in that short time.¹⁰⁷ In his book about the lyric Baudelaire, Benjamin contrasts two types of pedestrians in modern cities. On the one hand, there would be these, “who wedged himself into the crowd,” but there was also the flaneur, “who demanded elbow room and was unwilling to forego the life of a gentleman of leisure.”¹⁰⁸ Benjamin observes the flaneur’s uncertain existence and its “irregular life whose only fixed stations were the taverns of the wine dealers.”¹⁰⁹ But, whereas Baudelaire would have been anti-bourgeois, he also would have known “what the true situation of a man of letters was: he goes to the marketplace as a flaneur, supposedly to take a look at it, but in reality to find a buyer.”¹¹⁰ As Benjamin accounts, after 1848, many were not only annoyed and bored by the bourgeois regime, but also restricted and haunted by the new structures of the modern, administrative Paris. New streets, postcodes, street names and house numbers as well as postmarks for each private letter made it hard to escape from taxes and the street policy.

In the case of the chronically broke lyric Baudelaire, he would have probably fled into the crowd, as it is often accounted, because he owed money to several people. He had sometimes six or seven addresses in Paris at the same time. The flaneur fled into the public and made the facades of the streets his “interiors“. Even before Haussmann’s wide pavements appeared, Paris’ arcades would have served as ideal playground for flaneurs. Covered with glass roofs, enlightened by the gas lamps at nights, safe from the street traffic, aligned with shops and the shiny emailed signs. The arcades would have become a mix between interior and street, “an artistic device“ for a re-use of the city:

“[W]alls are the desk against which he presses his notebooks; news-stands are his libraries and the terraces of cafes are the balconies from which he looks down on his household, when his work is done.”¹¹¹

¹⁰⁷ Charles Baudelaire, The Swan, dedicated to Victor Hugo, in *The Flowers of Evils*, first published as “fleurs du mal” in 1857 (Middletown, CT: Wesleyan University Press, 2006).

¹⁰⁸ Walter Benjamin, *Charles Baudelaire: a Lyric Poet in the Era of High Capitalism*, trans. by Harry John (London: New Left Books, 1973), p. 54.

¹⁰⁹ Benjamin, *Charles Baudelaire: a Lyric Poet in the Era of High Capitalism*, p. 12.

¹¹⁰ Benjamin, *Charles Baudelaire: a Lyric Poet in the Era of High Capitalism*, p. 34.

¹¹¹ Benjamin, *Charles Baudelaire: a Lyric Poet in the Era of High Capitalism*, p. 37.

It would have been precisely the flaneur's leisurely appearance as a personality, which was his protest against the division of labour making people into specialists like Haussmann. The flaneur would have protested solitary and "heroically" against industriousness and Taylorism, which to him were embodied by the modern Paris. As Benjamin stresses:

"Around 1840 it was briefly fashionable to take turtles for a walk in the arcades. The flaneurs liked to have the turtles set the pace for them. If they had had their way, progress would have been obliged to accommodate itself to this pace."¹¹²

The arcades of the modern Paris, represented for Benjamin modernity itself. It is therefore important to note that they gave birth to the figure of the flaneur, which in Benjamin's would finally disappear within the shops and products of the modern capitalism. When I will come back to spatial practices of re-using and appropriating public places, it is important to recall that Benjamin was not too optimistic about the flaneur's subversive powers.

As Göckenjan observes, in the second half of 19th century, mainstream medicine would have abandoned any holistic approach towards health and with it any "emphasize on personal lifestyles". This impulse would have manifested itself on the edge of the discipline in the form of the then emerging Naturopathy (in German: "Naturheilkunde"). Göckenjan observes a diffuse association of amateurs, doctors and writers, who would have produced popular advisors in this period in order to save a rest of bourgeois self responsibility and liberal pathos within a "bio-chemical", modern world.¹¹³ The alternative medical advisor for an "art of physiological everyday life" by the German author and medical man Dr Hermann Klencke would have presented one of these heroic figures. In 1868, Dr Klencke stressed the importance of daily exercise for the mental and bodily health. Personal initiatives, activity and exercise would have become obligatory and so everyone, especially the modern office worker, who would be captivated to his writing desk and a "sitting lifestyle" should walk for health reasons. Klencke advises every morning for an hour disregarding the weather. Unfortunately, he states, it is not like in the old days, when one just had to pop out of the door and could have walked in a nearby forest, an open field or the mountains in order to enjoy some fresh air and sunlight.¹¹⁴ Such mourning about the loss of access to nature seems to anticipate some of the modernists' claim to bring back nature to urban life, as for instance Giedion praised in Haussmann's reforms.

Klencke meanwhile welcomes what he calls Morgenpromenaden-Vereine ("Morning strolling clubs"), which would have formed in various great cities in the German states. Their members would meet in the early mornings at a fixed time and venue to stroll outside of the

¹¹² Benjamin, *Charles Baudelaire: a Lyric Poet in the Era of High Capitalism*, p. 54.

¹¹³ Gerd Göckenjan, *Kurieren und Staat machen - Gesundheit und Medizin in der bürgerlichen Welt* (Frankfurt am Main: Suhrkamp, 1985), pp. 88 ff.

¹¹⁴ Hermann Klencke, *Die physische Lebenskunst oder praktische Anwendung der Naturwissenschaften auf Förderung des persönlichen Daseins* (Leipzig: Kummer, 1864), p. 76.

smell and the dirt of the city in a natural environment. According to Klencke, such clubs followed a strict protocol: Members, who would miss a session without giving notice had to fear “conventional punishments“. But the modern man, as Klencke claims, obviously would need such a strict regime, since he needs to be encouraged and moreover would be reminded to get up early in the morning. The results of the dietetic regiment could be seen at once and would appeal to everyone. The Morning Strollers would be at best health and moods, but also best prepared for their daily business.¹¹⁵ As the account by Goeckenjan suggests, Klencke might have addressed exactly these bourgeois, who moved in to the newly built flats around the Place de l’Etoile of Haussmann’s Paris.¹¹⁶ I may speculate that the paths between miniaturised hills and lakes of the Bois du Bolougne would have served as the perfect playground for the Morning Strollers. It was a natural environment, yet highly cultivated and close at hand to apartments and offices. The emergence of clubs, however, which organize exercise, even punish members for not following their regiment, indicates that its members begin to feel overwhelmed by the requirements of a rational, strict, and performance focussed lifestyle. Whereas the flaneur fled the sanitized city into the shops of the Parisian arcades, the Morning Stroller fled into the cultivated nature of Parisian parks, where a club waited for him, which promised to support and enhance his health.

¹¹⁵ Klencke, *Die physische Lebenskunst*, p. 76.

¹¹⁶ Goeckenjan, *Kurieren und Staat machen*, p. 88.

Obesogenic Environments

In the last chapter, I have shown how early sanitary reforms were hardly based on scientific research, but on political agendas and cultural changes. In the following section, I will focus on architects of the 1920s, who envision decentralised, pacifistic and healthy living areas due to their latent antagonism against great cities. I will show how they often automatically attributed their anti-urban designs to be health promoting, which seems to be an influential credo of health orientated planning up until today. I will point to organic architects, who criticised the functionalist city as probably sanitary, but purely rational and lacking of any higher aim social agenda. More recent critic on the functionalist city has pointed out their lack of cultural and social exchange and increasingly a-political and private character. I will show how in the face of today's studies into the walkability, neighbourhood design and obesity many concepts of the functionalist city, which were distinctively health-orientated at their time and need to be re considered. Indeed, I will show how Ebenezer Howard's Garden Cities – a tool kit for “moderate” urbanism – carefully obeyed walking distances and stressed cultural density. Presenting today's research on obesogenic environments with a claim for temporary and urban designs.

More Light and More Fresh Air

Marianne Rodenstein points to a “paradigmatic change” within healthcare from pre-modern, holistic and individual dietetics to a scientific, environmental-orientated hygiene within the second half of the 19th century. Hygiene would have shifted its focus from therapy to prevention and would have started to adopt scientific working methods from other modern disciplines such as chemistry, physics and zoology. The former would have already celebrated their first success.¹¹⁷ I have mentioned above how some enthusiasts in more holistic dietetic regimes responded to this new focus in medical research with their own practices of self-improving such as Morning Strollers Club. Particularly the direction of physiological hygiene would on the other hand increasingly contribute to health orientated building processes.

Max Pettenkofer's research for instance focussed on environmental influences on the organism. He stressed traditional topics of hygiene such as air and light, but began to see them in the perspective of physical measurements such as temperature, speed of circulation, contents of oxygen, carbohydrate and water. It seems important to note that his experiments addressed the large variety of shells and materials, which are surrounding the body. For Pettenkofer clothing and buildings had the same function to regulate the exchange of air and humidity between atmosphere and our body. As he puts it: “The cloak and the tent are cousins.”¹¹⁸ In particular, Pettenkofer was interested in making visible and perceivable the passage of the elements through building materials. He was aware that what he called

¹¹⁷ Rodenstein, *Mehr Licht, Mehr Luft*, p. 79.

¹¹⁸ Max Pettenkofer, *The Relations of the Air to the Clothes we Wear, the House we Live in, And the Soil we Dwell on*, trans. by August Hess (Ludgate Hill: N. Trübner & Co., 1873), p. 36.

“intercourses“ needed to be demonstrated to an audition, which could not perceive them with mere human senses, in order understand its crucial impact on the organism.¹¹⁹ Pettenkofer’s understanding of health and wellbeing was very much narrowed down to the efficient functioning of the organism.

One of Pettenkofer’s most famous experiments was the respiratory-apparatus (Figure 8). It illustrates how closely the search for the perfect healthy environment had encountered the human body. Developed at his *Institute für Hygiene* in Munich around 1867, the respiratory-apparatus consisted of a closed cabin with one window, a chair, table and a bed. Its air circulation was delivered by a steam engine; while the exact amount of provided fresh air and soaked in used air (between 200,000 and 500,000 litres a day) had been measured. According to Pettenkofer’s biographer, the whole set up was designed to house “one test person or one dog” within the cabin for the test phase of 24 hours.¹²⁰ Pettenkofer suggested the content of carbon dioxide as a guide to show the level of air pollution. Within his experimental set up, he needed merely to alter one of the numerous parameters in and around the cabin. The difference of temperature between interior and outside, the speed of air circulation, or the size of windows could be iteratively measured and varied. In this way empirical experiments produced numerous facts on how a room needs to be designed to provide a “physiologically sufficient“ shell for the body. For example, one could assume the minimal size for a window or, in turn, was able to calculate the maximum number of inhabitants, which should be allowed per bedroom.

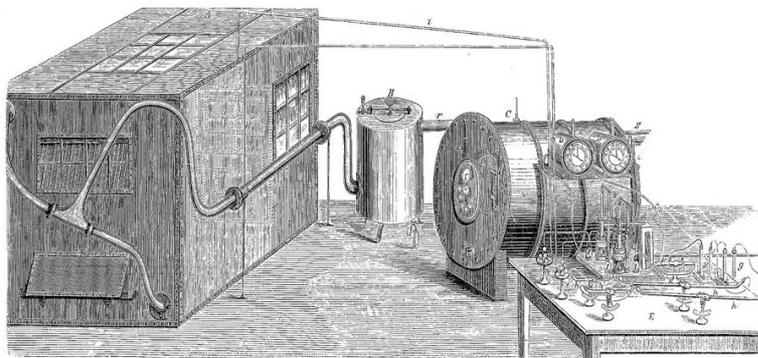


Figure 8 Max von Pettenkofer, Respirationsapparat, 1867.

Pettenkofer’s respiratory apparatus to find out the measures of the room and windows to provide people with sufficient air and light.

As Rodenstein points out many of the findings of Pettenkofer and his colleagues found their way to first manuals on the emerging discipline of “scientific” town planning. Summed up under the simple claim for More Light, and more fresh Air, they would have been used to agitate against the overcrowded lodging houses, which were still prevalent in Berlin in the 1890s.¹²¹ Like the early urban health reformers in Britain, town planners in the late 19th

¹¹⁹ Pettenkofer, *The Relations of the Air to the Clothes*, p. 39.

¹²⁰ Hardy, *Ärzte, Ingenieure und städtische Gesundheit*, p. 123.

¹²¹ Marianne Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', in *Macht Stadt krank? Vom Umgang mit Gesundheit und Krankheit*, ed. by Dittmar Machule, Olaf Mischer and Arnold Sywottek

century saw unhealthy environments as the main cause for disease. Reinhard Baumeister, who wrote one of the first manuals of “scientific town planning“ in Germany, intensely quoted medical authorities and hygienists including Pettenkofer. In 1876, he stated:

“It had been shown by various medical men that many diseases are caused by bad housing conditions; other environmental influences, irregular lifestyle and insufficient nutrition can be disregarded.“¹²²

In response, Baumeister claims for many of interventions, Chadwick had fought for in Britain: He suggests sanitary provision, waste disposal and traffic planning. This list is enhanced by a great emphasize on sunlight and air circulation. He sought to underline his “scientific“ approach by presenting various formulas, which should inform future incremental projects. One of them restricts the height and density of buildings. In order to promote public health and to provide flats with sufficient sunlight and air circulation, the ratio between the lengths of streets to the heights of buildings would have to be one to one. Lodging houses were to be regulated to a maximum number of four stories.¹²³ He adds that many factors as topography, sanitary provision and lifestyles would have an impact on people’s constitution and therefore the relation between death rates and building density would be not “exactly congruent“. However, as a tendency, he was ready claim that the less densely populated, the more health-promoting cities would be.¹²⁴ Results of experimental hygiene therefore were directly used to underline claims for less populated living areas.

Baumeister’s chapter *The Housing Question* reveals his political agenda. For him, an ideal model for working class dwelling would consist of “family houses“, smaller units that can be possessed by workers with low incomes.¹²⁵ One of his main arguments for this model was the positive influence of property on its inhabitants’ moral and discipline. Referring to “the famous example of Mühlhausen“, initiated by Haussmann, he claims that in such suburban housing, workers would have “learned” to stay at home in the evenings and weekends. They would keep busy with gardening, saving their money and leading a healthier life than their peers in the city.¹²⁶ For Baumeister it was a mere give in to the economic situation that his family homes for everyone, for the moment, would stay an idealistic dream. New urban lodging houses would be needed and it would be the highest duty of modern planning to reduce “the greatest evil“ of urban by introducing detailed building.¹²⁷ For the latter, Pettenkofer’s experiments with the respiratory apparatus would become crucial to determine minimal room sizes and opening measures.

(Hamburg: Dölling & Galitz, 1996), pp. 19-31, pp. 24-5.

¹²² Reinhard Baumeister, *Stadt-Erweiterungen: in technischer, baupolizeilicher und wirtschaftlicher Beziehung* (Berlin: Ernst & Korn, 1876), p. 17.

¹²³ Baumeister, *Stadt-Erweiterungen*, p. 319.

¹²⁴ Baumeister, *Stadt-Erweiterungen*, p. 334.

¹²⁵ Baumeister, *Stadt-Erweiterungen*, p. 32.

¹²⁶ Baumeister, *Stadt-Erweiterungen*, p. 27.

¹²⁷ Baumeister, *Stadt-Erweiterungen*, p. 32.

As Rodenstein suggests, town planners used their findings to fight through reform concepts against capitalistic investors. The many scientific facts would have been used to determine what was crucial to provide an environment that would just keep people healthy. They would have largely set the tone for modernist architects' claims for minimal standards for living.¹²⁸ For Rodenstein, Baumeister's claims as much as the Garden City designs and the 1920s vision of healthy living would share a latent anti-urbanism. Even though claiming to be scientific, these visions for urban planning would have merely used the health topic to push totally different health agendas.¹²⁹ I fully agree with Rodenstein on her account on how closely political agendas are interwoven to health-orientated town planning. In the following, I will have a closer look into 1920s arguments into healthy living in the following.

Garden Cities' moderate urbanism

In the following I will pay more attention of the later urban visions Rodenstein is referring to: Ebenezer Howard's Garden City, Bruno Taut's claims to decentralize cities and Hilberseimer's Highrise City, which would all claim health as a major agenda. I will first confront them with architects' own criticism regarding user participation, and increasing private and a political character of the functional city. 1920s claims by architects such as Bruno Taut to dissolve and decentralise cities went further than Ebenezer Howard's *Garden City*, which still had held on to urbanism in general. In a second step I will show how some their principles must also be reconsidered in terms of their effect on people's health.

In 1902, Ebenezer Howard presents his Garden Cities as an alternative to the inhuman and immoral conditions of urban living areas in London. For him, the main cause for these conditions was overpopulation and therefore people should stop streaming into dis-functional great cities.¹³⁰ His concept of the Garden City was meant to combine the best sides of both worlds. By combining the advantages of most energetic and active town life with the beauty and delight of country life, Garden City was to become a *Town-Country* magnet. It is important to note that even though Howard wanted to attract people back to "kindly mother earth", he still held on to the model of urbanism.¹³¹ Living in closer relationship to nature was to Howard the source of all beauty and wealth and would, as he hoped, unfold the cities' full economic and cultural potential. Attesting the countryside certain "dullness", people would benefit from urban advantages such higher wages in his Garden City, more opportunities of employment, and better prospects of advancement. For him urbanism in general would provide "social opportunities", which would include places of amusement and uplifting architecture.¹³² For his Garden Cities, I may note, Howard claims to provide a moderate version of urbanism.

¹²⁸ Marianne Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', in *Macht Stadt krank? Vom Umgang mit Gesundheit und Krankheit*, ed. by Dittmar Machule, Olaf Mischer and Arnold Sywottek (Hamburg: Dölling & Galitz, 1996), pp. 19-31, pp. 24-5.

¹²⁹ Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', p. 28.

¹³⁰ Ebenezer Howard, *Garden Cities of Tomorrow*, 2nd edn (London: Swan Sonnenschein & Co., 1902), pp. 10 -1.

¹³¹ Howard, *Garden Cities of Tomorrow*, p. 14.

¹³² Howard, *Garden Cities of Tomorrow*, p. 15.

In several ways, the Garden City movement wanted secularize 19th century claims for a “perfect blend of nature and town“ by fashionable health resorts, to which I will have to say more about later in this text. The object of Garden City was as Howard puts it “to raise the standard of health and comfort of all true workers of whatever grade.”¹³³ Good health was one of the key selling arguments for the Garden City and town planning was to deliver Howard’s ambitious goals. The planning schemes for up to 32,000 workers carefully balanced housing, recreational and working areas with a significant amount of green, natural and airy spaces. Town and country life was to be combined in a “healthy, natural and economic“ way.¹³⁴ Howard stressed the importance of all these areas being well accessible to all inhabitants. Particularly interesting in our context seems that Howard highlighted the low walking distances within his scheme of the city centre (Figure 9). The Central Park for instance was to be located within 600 yards (ca. 550 meters) for the furthest removed inhabitants. Smaller parks were to be located no further than 240 yards (220 meters).¹³⁵ I may note in passing that it might have been precisely his acknowledgement of a certain density of cultural and social opportunities – that makes his Garden City appear particularly healthy from today’s perspective.

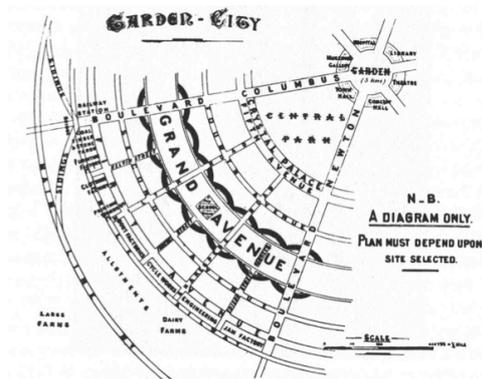


Figure 9 Ebenezer Howard, Diagram 3: Ward and Centre of Garden City, 1898.

Ebenezer Howard insisted his Garden City would have the best of both worlds including cultural exchange of an urban character. He stressed easy access and walking distances of all public buildings and recreational facilities for all inhabitants.

Howard may have hardly anticipated that low levels of physical activity would become a major health issue one day. I may speculate, that Howard would have defined health largely as the absence of disease. For the working classes, thus meant to be free from predominantly bacterial and respiratory diseases of the late 1900s. At the same time, Howard already seems to acknowledge the necessity for recreation activities. Obviously, in Garden City it would remain crucial to compensate a demanding and stressful working life. According to Howard, the central public park would include - next to a town hall, schools, museums, a hospital and

¹³³ Howard, *Garden Cities of Tomorrow*, p. 21.

¹³⁴ Howard, *Garden Cities of Tomorrow*, p. 22.

¹³⁵ Howard, *Garden Cities of Tomorrow*, pp. 23-4.

galleries - “ample” recreational facilities such as cricket fields and tennis courts.¹³⁶ Again, I may note, it is a mix of uses, Howard claims for in his diagrams.

Finally, Garden Cities were to attract people with a holistic and sustainable concept of political reform. He hoped to convince workers to pay themselves in to their communities with a thorough fully worked out economic model. All rents would be paid to a communal board of trustees, managing interests and organising the construction and maintaining of all infrastructural and building works. Any surplus would have to be invested in a pension and health insurance system.¹³⁷ Howard insisted that his concept was not be seen as a socialist’ or as a radical communist experiment. In contrast to earlier in his view “extremist” projects, he stressed the importance of “two inherent principles to human being”. On the one hand, that was to him social collaboration and on the other hand individual initiative.¹³⁸ Howard did foresee a flexible usage of his planning schemes. Whereas he clearly defined its positions and meanings, for instance by indicating walking distances, he barely intervened into architectural design. De Bruyn attests Howard’s diagrams an unprecedented grade of urban complexity. They would show remarkable features of interpretation and openness towards topography, economical development and aesthetical preferences. As de Bruyn puts it, it may have been their adoptable, scalable and flexible models that secured Garden Cities a considerable amount of success.¹³⁹ His “third alternative” provides me with a helpful starting point in terms of urban density for the two following urban reform concepts to be discussed in this chapter.

Taut’s “Dissolution of Cities”

When Bruno Taut claimed for “The Dissolution of Cities“ in 1920, most European avant-garde architects and urban planners were deeply impressed by the horrors of the First World War.¹⁴⁰ As a response to the capitalist great cities, which factories had produced the weapons for the war, most of them envisioned living in anti-urban, rural communities. Decentralisation was key for Taut to develop a peaceful, socialist and healthy society. He presents 30 drawings together with more than 80 pages of collected literary references, which as he mentions would be supposed to add proof to his concept.¹⁴¹ As I have shown earlier in this text, many Utopian urban visions were underlined with medical facts. I will therefore have a closer look into Taut’s concepts of health.

The subtitles reading “*Mother Earth: A good dwelling*“ and “*Towards Alpine Architecture*“ may point to an attempt to live “in tune with nature“ and set Taut close to more “holistic” life reformers. In order to defame great cities, Taut starts to cite the German hygienist Albert

¹³⁶ Howard, *Garden Cities of Tomorrow*, p. 58.

¹³⁷ Howard, *Garden Cities of Tomorrow*, pp. 20-9.

¹³⁸ Howard, *Garden Cities of Tomorrow*, pp. 88-9.

¹³⁹ De Bruyn, *Die Diktatur der Philanthropen*, pp. 180-1.

¹⁴⁰ Bruno Taut, *Die Auflösung der Städte oder Die Erde eine gute Wohnung oder auch: Der Weg zur Alpen Architektur* (Hagen: Folkwang, 1920).

¹⁴¹ Taut, *Die Auflösung der Städte*, frontispiece.

Weiss, who brings forward statistics on the conditions of overcrowded urban living areas in Berlin. According to Weiss, the average amount of fresh air per worker in dwellings and workshops was highly unsatisfactory and led to consumption and tuberculosis.¹⁴² Moreover, Taut cites the English doctor and public health author George Vivian Poore, within his *Essays on Rural Hygiene* of 1893 shows a close relation to Howard's "moderate" Garden City approach, but in my view conducts a slightly more radical tone.¹⁴³ Both sanitarians would have related health closely to political circumstances. Indeed, Taut leaves the health topic quickly moving on to what seems to be his main field of concern. Start off from various backgrounds, most of his references would conclude in political statements including studies by zoologist and anarchist Peter Kropotkin, extracts of socialist manifestos by Landauer and Engels, the constitution of the Soviet Republic, quotes by Nietzsche and prose by Taut's friend Paul Scheerbart.¹⁴⁴ All pieces seem to be arranged to persuade the reader of the necessity to design alternative, peaceful, anti-capitalist, anti-urban and decentralised society.

What these might look like is presented in the first part as Taut's utopia of "dissolved cities". The new society to come would consist of rural communities of 500 to 600 people. His description of the political, economical and social life suggests a pre-industrial lifestyle. Everyone would work in gardens and manual workshops helping each other and sharing all products and services. Work would be a pleasure, but as if to make sure, Taut sets up what he calls recreation temples close to all work facilities.¹⁴⁵ The economy would be based on agriculture and craftsmanship with light workshops in low densely populated areas.¹⁴⁶ For Taut, such a new lifestyle would bring forward new forms of living. Houses would take on the character of nomadic living units, which may help to get over urbanity and would foster to experience nature. They are complete with mobile, individually coloured wall units, sheltering the body from rain, cold and heat. Their modesty contrasts the monumental character of community buildings, to which Taut referred to as the "houses of ideas."¹⁴⁷ Taut wanted to educate people through a solitary and at the same time communal life as his structures were thought of for "communities and oddballs".¹⁴⁸ Characteristic for this amalgam of public facilities was his emphasis on free access. As he states, in the peaceful society to come, the national state - to him responsible for warfare and nationalism - was to be overcome with its inherent model of big cities. In this view, any boundaries must be

¹⁴² Cited in Taut, *Die Auflösung der Städte*, appendix, pp. 2-3.

¹⁴³ George Vivian Poore, *Essays on rural hygiene* (London & New York: Longmans, Green & Co, 1893) Cited in Taut, *Die Auflösung der Städte*, appendix, pp. 5-9.

¹⁴⁴ Taut, *Die Auflösung der Städte*, appendix, pp. 9-81.

¹⁴⁵ Taut, *Die Auflösung der Städte*, plate 2.

¹⁴⁶ Taut, *Die Auflösung der Städte*, plate 3-4.

¹⁴⁷ Taut, *Die Auflösung der Städte*, plate 7 (Original in German, transl. by M.K., italics added: "Andere Lebensinhalte erzeugen andere Lebensformen. Feiner werden die Sinne. Das 'Urbane' stossen sie ab und machen aus Allem ein Erlebtes. Zum konkreten selber als ein Konkretes strebend u. in ihm das Geistige aller Dinge nehmend. [...] Die Wohnung, [...] Im Prinzip eine "Schachtel" mit einem einzigen Wohnraum. [Homogene Wandteile, immer anders zusammengesetzt. [...] Kein Schrank hindert ihn; denn Schränke sind überall eingebaut, und alles andere sind *mobilsten Mobilia*. Jede Wand hat eine andere Farbe, auch aussen, die Decken ebenso. [...] Wandlungsfähig ist das Haus wie der Mensch, beweglich und doch fest. [...] Aber die Kapseln um unsere Leiber müssen einen weiten Abstand halten von der Wohnung der Ideen.")

¹⁴⁸ Taut, *Die Auflösung der Städte*, plate 10.

dissolved, these between the town and the countryside as well as those between institutions and private properties.¹⁴⁹ I like to highlight his idea of social change through solidarity here, for which he claims to design attractive and accessible community buildings.

In terms of health, Taut's *Die Auflösung der Städte* stands somewhat in the long tradition of representing Utopian society as having overcome health problems. Accordingly, bacterial and respiratory diseases seem to be successfully diminished in Taut's utopia. Taut does not depict particular sanitary measures having successfully prevented diseases, but presents the rural lifestyle itself as healthy. De Bruyn points to Taut's fascination with the austere and physically demanding lifestyle imposed on occupants within traditional Japanese houses. With his publication in the 1930s, Taut could have anticipated the massive popularity of Asian health and well-being advisory among verdicts of today's civilisation diseases. But, as de Bruyn puts it, it was precisely Taut's rationalist Western origin, that made him advocate for Japanese houses for a peculiar reason: their potential health benefits. Being the product of ritual, mystic, and organic processes, these constructions hardly intended to be foremost a healthy habitat. Any narrow definition of "health" - be it measured by the absence of bacteria or accounted by the sufficient amount of daily activity - seems to miss the point of a more holistic Asian understanding to well being. De Bruyn attests Taut – even one of the most articulated and self reflected avant-garde architects - a fundamental misconception of the broad influences at work in a genuinely "organic architecture".¹⁵⁰ Taut sensed strong correlations between environments and modern lifestyle diseases. However, he was neither able to fully grasp them nor develop this approach any further, since he was looking into (Japanese) houses through the lenses of a (Western) sanitarian.

Suburbanisation, in Bruegmann's view, is an indivisible part of urbanisation. As the exodus from the countryside stopped in Western societies in the mid of the 20th century, the ongoing suburbanisation led to an overall decrease of density in urban areas. As Bruegmann points out, this is true for both, developed and developing societies. As a result, urban living areas nowadays are understood as a network of communities, integrated into an *ex-urban* region.¹⁵¹ Though dispersed to large areas, they are interconnected socially precisely through the technologies. As Bruegmann states, professional planners and theoreticians have often ignored this development, though it seems to have become a matter of fact in reality. For a long time they would have developed several stereotypical denunciations against "urban sprawl". As Bruegmann lists, suburbanisation was said to be economically inefficient, social regressive, environmentally degrading and aesthetically ugly.¹⁵² Bruegmann interestingly seems to leave out positive or negative impacts on wellbeing for its dwellers. Urban sprawl had been criticised for its "car-friendliness" since the 1970s. Initially, this argument focussed

¹⁴⁹ Taut, *Die Auflösung der Städte*, plate 12.

¹⁵⁰ See Bruno Taut, *Das japanische Haus und sein Leben = Houses and people of Japan*, 5th edn (Berlin: Gebr. Mann, 2010) and Gerd de Bruyn, *Fisch und Frosch oder Die Selbstkritik der Moderne* (Berlin: Birkhäuser Verlag, 2001), pp. 76-7.

¹⁵¹ Robert Bruegmann, 'Broadacre City and Sprawls', in *Multiple City: Stadtkonzepte 1908 - 2008 / Urban Concepts 1908 - 2008*, ed. by Sophie Wolfrum and Winfried Nerdinger (Berlin: Jovis, Berlin), pp. 54-7. pp. 54-5.

¹⁵² Bruegmann, "Broadacre City and Sprawls", p. 56.

on the effect for pedestrians in terms of lack of safety, pleasurable experiences and social interaction on deserted streets and public places. Recently, that research tries for instance to relate the walkability of a living area with its prevalence of obesity. I will deal with these attempts in the following excursion on today's obesogenic environments and lifestyle diseases.

Hilberseimer's deserted pedestrian levels

Not all avant-garde architects and planners demonized urbanism. A few criticised unhealthy big cities and at the same time emphasised their role as a motor of economic, technical and cultural progress. Unlike Taut's decentralised city, they claimed for hyper-dense and reformed urban organization. Thomas Sieverts has observed three motives behind such organisational cities in the biography of architect and urban planner Ludwig Hilberseimer. Born in 1885, Hilberseimer shared the criticism on "chaotic" late 19th century cities, in which he himself had grown up. Second, being born as the child of workers and committed to socialism, he would have felt close to the working class movement. Third, having worked as an art critic, Hilberseimer would have been closely affiliated to the anti-historical and aesthetical agenda emerging from modern arts of that period. For Sieverts, it would be foremost the latter "reductivist" approach, seeking to base any cultural and social discussion on a strictly objective basis, which would have resulted in what has been widely criticised as the "dogmatic character" of the modernist movement.¹⁵³ A focus on people's health would become a main advocate for the leitmotiv of the functional city from the 1920s. In the following, I will pay more attention to Hilberseimer's understanding of health and will contrast it to Howard's Garden Cities and Taut's "Dissolved Cities".

For Ludwig Hilberseimer, great cities were crucial to economic and cultural progress. He saw the chaotic, unsocial and unhealthy conditions of the 19th century American and European city centres not caused in urbanism per se, but by an abuse of it by unrestricted, free capitalism. In contrast, he suggested that democratic capitalism would help to unfold the natural potentials of cities as motor of economical growth and any cultural progress.¹⁵⁴ Hilberseimer refers to Henry Ford and suggests assembly line techniques and scientific management to be applied to the production of cities and buildings. Believing in the necessity of urban nodes, Hilberseimer's credo was to achieve better living conditions for a maximum amount of people while using the least possible space. In his view, Le Corbusier's scheme for a Contemporary City of Three Million People¹⁵⁵ would have lacked of consequence - providing better organisation and more green spaces - but hardly any increase of population density.¹⁵⁶ I will have to say more about Le Corbusier's vision of urban living and healthy machines later on in this text.

¹⁵³ Thomas Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', in *Architektur im 20. Jahrhundert - Deutschland*, ed. by Romana Schneider, Winfried Nerdinger and Wilfried Wang (München: Prestel, 2000), pp. 12-20, p. 14.

¹⁵⁴ Ludwig Hilberseimer, *Groszstadtarchitektur* (Stuttgart: Julius Hoffmann, 1927), p. 2.

¹⁵⁵ Le Corbusier, *Urbanisme* (Paris, 1925).

¹⁵⁶ Hilberseimer, *Groszstadtarchitektur*, pp. 15-6.

In contrast, Hilberseimer presents his scheme for a Hochhausstadt, a High-rise City, which would increase population density through a vertical organisation. It would simply pile two different kinds of cities on top of each other. In contrast to the chaotically agglomerating individual skyscrapers in American city centres, Hilberseimer aims for a thorough fully planned organism. Replacing small-scaled house units with huge communal buildings, one block would take on the size of 600 m x 100 m providing all crucial functions of modern life. Up to 9,000 people would work in the five-story high *Geschäftsstadt* volumes and live in two fifteen-storey apartment slabs directly above (Figure 10). As Hilberseimer highlights the two apartment slabs are located on the ends of each block, so that they benefit from a maximum amount of fresh air and sunlight.¹⁵⁷ We can see how the 19th century town planners' credo of More Fresh Air and Light echoes resonates in Hilberseimer even though his Hochhausstadt inverts their anti-urban dogma.

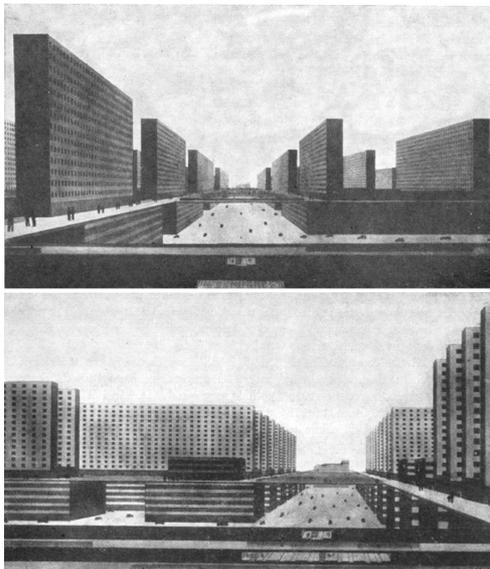


Figure 10 Ludwig Hilberseimer, Schema einer Hochhausstadt, 1924.

Hilberseimer suggested an hyper dense populated scheme for High Rise City. Even on Hilberseimer's own drawings, the pedestrian levels five stories above ground level look not as lively as one might have hoped for.

Living in the Hochhausstadt would be organised around the idea of a hotel. Apartments would consist of a flexible amount of rooms with on suite service rooms, where staff would take care of the laundry and cleaning. For Hilberseimer, modern city dwellers needed to be flexible and mobile. They would have to be able to respond to economic changes for instance to move for a job. Due to its hotel like organisation, people would be able to do so as Hilberseimer emphasises “by merely packing their suitcases“.¹⁵⁸ Whereas Taut claims for a nomadic lifestyle in order to foster a life in tune with nature, Hilberseimer organises a system of individual flexibility to enable city dwellers adapting more easily to economic requirements.

¹⁵⁷ Hilberseimer, *Groszstadtarchitektur*, pp. 17-8.

¹⁵⁸ Hilberseimer, *Groszstadtarchitektur*, p. 18.

As most activities are being transferred to the interior of the communal block, public space in the Hochhausstadt is drastically altered. Outdoor space seems to be now foremost concerned with distributing traffic. A system of 60 m wide motorways channels all automobile traffic. Below, buried in the ground, railway and tram networks connect city dwellers with other blocks and cities across the country. Eighteen meters above street level, between business and residential area, spans a 10 m wide outdoor pedestrian level. Hilberseimer hopes to release citizens from the danger of urban traffic, which in his view was the mixed crossing with cars on the same level. In contrast, the pedestrian level sought to provide a network of alleys connecting the main entrances to business and living units with shops and restaurants.¹⁵⁹ This description reminds of Leonardo's Two Level City, in which, as I have shown earlier, Leonardo has hoped to provide a safe, clean and sunny environment for noblemen to socialise and stroll. Kilian makes me aware of the impact on public spaces in Hilberseimer's organisation, which would be most tellingly revealed by his drawings. The diagram-like perspectives would show us a deserted public space unfolding between the large community blocks. The few pedestrians using the huge alleys seem to be somewhat lost, while not many more cars are depicted driving along the main motorways below (Figure 10).¹⁶⁰ I may therefore emphasise that Hilberseimer's pedestrian levels are likely to become deserted places, of rare quality and attractions.

Hilberseimer seems not too much concerned with the way people are spending time while travelling throughout the city. He is foremost concerned with organising traffic on a large scale and reducing it to a minimum.¹⁶¹ As Kilian points out, Hilberseimer did hardly specify any internal organisation of his communal buildings, too. The few hints given suggest a rather conventional system of necessary stairs and elevators. The only plan dealing with interior space would show the organisation of its flexible private living units.¹⁶² This would have seemed of particular interest as he suggests a new vertical organisation and traffic system. There is no mentioning of pedestrian ramps or connections, nor any public or communal used space specified within the two huge apartment slabs. Public space within the communal blocks, housing up to 9,000 people, fulfils foremost the task of a corridor, guiding people to their destinations in the most efficient way.

In 1926, Häring criticises Hilberseimer's *Hochhausstadt* and Le Corbusier's *Ville Contemporaine* precisely for their "clean" aesthetic. Häring confirms that both proposals may provide optimal sanitation in terms of providing fresh air and daylight. Nevertheless, Hilberseimer's dedication to strict discipline and method would lack of any goal or essence of its own. Le Corbusier, on the other hand, would merely celebrate his fascination with technology in a "slightly pathetic" gesture of monumental heroism. Le Corbusier would have produced a "sanitized world" whereas Hilberseimer, who was a friend of Häring, would have

¹⁵⁹ Hilberseimer, *Groszstadtarchitektur*, p. 19.

¹⁶⁰ Markus Kilian, 'Großstadtarchitektur und New City - Eine planungsmethodische Untersuchung der Stadtplanungsmodelle Ludwig Hilberseimers' (PhD Dissertation, Universität Karlsruhe, 2002), p. 65.

¹⁶¹ Hilberseimer, *Groszstadtarchitektur*, p. 20.

¹⁶² Kilian, *Großstadtarchitektur und New City*, p. 72.

achieved an ambitious illustration of profound but “sterile” character.¹⁶³ Häring attests both cities to be health promoting, obviously applying the right measures to prevent infectious diseases. However, he doubts anyone may actually feel well living in such sanitized cities. He points to various negative social effects being caused by geometric principles, such as leaving no room for life and being of a suppressive, humiliating character.¹⁶⁴ Though Häring points to negative impacts of such sterile cities on people’s body and mind, he does not argue that modern lifestyle may cause diseases or would be “unhealthy“ a priori.

In a conference paper given for the “German Research Association“ in 1929, Häring made a remark that may underline his traditional definition of the word health. For him, what constitutes functionality would have none of the certainty that would exist for instance in health matters.¹⁶⁵ He acknowledges the numerous facts that had been produced by medical and psychological research in the past decades. However, he ridicules colleagues, who for instance would seek to narrow down question of colour in architecture and design to the mere technical matters of “psychological hygiene”.¹⁶⁶ To design a house on merely rational (medical) knowledge for Häring by no means guarantees the result of a functional house. Since Häring most valued a holistic view on wellbeing, it seems plausible to me that Häring intentionally abandoned the word “health“ from his writings. For him, health was increasingly defined by and associated to the world of medical, psychological and hygiene research. To speak of health or in turn of disease, therefore might have counteracted Häring’s attempts to see planning extended to more spiritual, social and cultural factors. Häring seems to avoid the medical notion of health in order to replace it with the softer sound of wellbeing, of life-fulfilment, and living according to natural principles. The concept of “lifestyle diseases“ that is in a way seeing the sphere of *life* through the lenses of *disease*, or exclusively from the perspective of medicine and technology was exactly the approach, Häring opposes in the two cities. He names physical and mental harm inflicted by progressive mechanisation, however, it is important to note that Häring’s language becomes considerably vague, when it comes to health.

According to Sieverts the radical re-thinking in avant-garde urban planning was partly a response to the societal paradigmatic shifts, which had already been on their way in the 1920s. Public space would have lost its meaning in society, since “public life“ had disappeared from streets and places. Progressive labour division and optimized productivity had already resulted in new daily routines, which became increasingly spatially and timely separated. Moreover, the fast growing amount of traffic had occupied public space and

¹⁶³ Hugo Häring, 'zwei städte: eine physiognomische studie, zugleich ein beitrag zur problematik des städtebaus', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 20-22, p. 21. (first publ. in *Die Form*, n. 8, May 1926).

¹⁶⁴ Häring, 'zwei städte', p. 21.

¹⁶⁵ Hugo Häring, From a report published by the RFG of contributions to *The Technische Tagung* in Berlin, 15-17 April 1929, Gruppe 1, Grundrißgestaltung und Hauswirtschaft, p. 3 as cited in Jones, *Hugo Häring*, p. 81.

¹⁶⁶ Häring, *Contributions to The Technische Tagung*, pp. 6-7.

diminished most of its traditional qualities.¹⁶⁷ As Sieverts points out, the sanitarian answers given by Hilberseimer and his colleagues, which would contribute to the concept of the functional city, appeared to be reasonable measures against the conditions of the time.

Way more critical for Sieverts is an on going socio-cultural trend toward privatization or “domestication“. As Sieverts puts, for Hilberseimer the city would become house and machine, in which all functions would be organised as smooth as possible, having been made redundant of any socialising, or indeed politics in order to make it “function“. The new city would be considered as one entire building being a single air-conditioned, clean, controlled, smoothly and perfectly run service machine.¹⁶⁸ As Sieverts insists, one may hardly blame Hilberseimer for any further “perversion“ of his vision that would take place in following periods. But Sieverts outlines how many of these ideas found their way in today’s urban planning reality. For a start, there would be a close affiliation to many re-urbanisation projects in the post WW II period - featuring compact apartment volumes within natural landscapes. Second, its tendency of privatization materialised in urban Estate blocks such the Barbican Estate in London in the 1970s.¹⁶⁹

Hilberseimer’s anticipation of any further progress in radio and communication technologies in order to reduce public traffic would have found its conclusion in today’s media technologies. Easily traversing space, diminishing traditional notions of publicity and privacy, for Sieverts, their success would point to an emerging “media publicity“, which would result from people’s “exodus“ to domestic, interior spaces. On the one hand, media publicity consists of all sorts of communication through digital media available for instance to the domestic living room. On the other hand, public life seems to have abandoned to private, corporate and mostly interior places. In this view, urban entertainment centres, combining shopping, hotels, restaurants, cinema and theatres seem like the actual version of urban machines, offering centrally directed, choreographed and simulated experiences often within corporate contexts.¹⁷⁰ Since the concepts of the functional city are still so influential to our time, I will revisit these three projects after I will have introduced more recent research on the relation of environmental causes on diseases as obesity.

Frank, Engelke and Schmid have observed how those urban solutions of the late 19th and early 20th century would have been implemented to help fighting public health problems of their days, but ironically would contribute to current health problems and the onset of chronic diseases.¹⁷¹ Any critic on health-orientated planning, I am convinced must therefore make sure to re consider these concepts in the light of new challenges and research. In the following I will briefly introduce the main concepts of today’s research on obesogenic environments, before I will contrast them with principles of 1920s planners.

¹⁶⁷ Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', p. 15.

¹⁶⁸ Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', p. 18.

¹⁶⁹ Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', p. 17.

¹⁷⁰ Sieverts, 'Stadt aufräumen - Eine Begegnung mit Ludwig Hilberseimer', p. 18.

¹⁷¹ Lawrence D. Frank, Peter O. Engelke and Thomas L. Schmid, *Health and Community Design: The Impact of the Built Environment on Physical Activity* (Washington, DC: Island Press, 2003), p. 36.

Today's Obesogenic Environments

It is important to note that obesity has been noted as an epidemic disease merely since the 1980s. As Philip James and colleagues point out, until then, obesity would have not been recognised as a problem to be tackled by a variety of disciplines. They highlight that genetic disposition would make a major difference in individual susceptibility to weight gain among people living in comparable environments. In their view, it would be most important to oppose the numerous prejudices and immense pressure that is put on obese children and adults' excess weight. The most appropriate response to them would be to consider environmental circumstances and peoples' particular needs for help.¹⁷² In their view, obesity is described as a normal biological response to the changed energy balance in Western societies. People's metabolism would face a decreased energy need resulting from low levels of physical activity. At the same time, one's metabolism would be confronted today with an increased energy intake through changed nutrition, which would provide us with more calories, e.g. more energy. In order to tackle obesity it would be crucial to balance calorie intake reduction per day with a sufficient increase of energy need. Regarding those environmental factors, James and colleagues divide contributors to less physical activity into "inevitable" factors such as broader social, cultural and economical developments and "optional" factors, which are therefore worth further consideration. Next to road and community design, recreational facilities, they list location policies for supermarket and fast food chains, but also marketing policies as contributing to the obesity epidemic.¹⁷³ Whereas I follow their analysis and conclusion to emphasis the research on environmental causes, I may point out that what they describe as inevitable and optional factors is closely related with each other. I would therefore not exclude the possibility to influence broader cultural, social and economical context with urban interventions.

Traditionally, research on health orientated town planning has focussed on the physical shape of cities and its influence on people's wellbeing. Townshend and colleagues see their research in the tradition of the "sanitary revolution", which would have their undoubted success to fight medical wise by combining knowledge from various newly emerging disciplines. They stress that with the notion of obesogenic environments, urban planning seems to act as a reference point to all sorts of interdisciplinary attempts, which would nowadays address increased calorie intake and decreased energy need. Whereas most studies on obesity so far would have focussed on separate contributing aspects, they would have hardly investigated any interconnections. They therefore claim for a broader and transdisciplinary research approach, in which disciplines would evolve and collaborate with

¹⁷² W. Philip T. James, Rachel Jackson-Leach and Neville Rigby, 'An International Perspective on Obesity and Obesogenic Environments', in *Obesogenic environments: complexities, perceptions, and objective measures*, ed. by Amelia Lake, Tim G. Townshend and Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 1-10, p. 4.

¹⁷³ James and others, 'An International Perspective on Obesity', pp. 4-8.

regards to a shared aim.¹⁷⁴ I would like to emphasise that urban design and research within such a transdisciplinary approach must consider a wide range of spatial practices.

In the following, I will briefly introduce how the shape of a city has been seen more recently to influence people's physical activity. As Frumkin and colleagues note, it would be therefore useful to specify the latter into different purposes, intensities and participants. People would get physically active with utilitarian or recreational motives. Those activities may be classified in moderate and vigorous intensities, on the basis of physiological measures. A third distinction would be helpful to account of the different social groups, which do or do not get involved.¹⁷⁵ In our context, I will foremost refer to what one may call "spontaneous" physical activity including everyday routines of utilitarian or leisure purpose and of foremost moderate intensity. Examples may be people walking to their job or going for a run in their living area.

Frank, Engelke & Schmid have presented a framework to understand the way built environments shape physical activity. They have identified three crucial dimensions as a city or region's transportation system, its land use patterns, and design characteristics. As transportation system they see the network of all physical infrastructures within a specific area including streets, transit and separated systems for non-motorised users such as cycling lanes.¹⁷⁶ Transport systems would influence the ease with which one can reach destinations within a neighbourhood or a region. In contrast, land use patterns would determine the presence of destinations to go to. They would result from the arrangement of built structures such as proximity between residential, retail, commercial, industrial and service destinations, but also the type of transit people use to reach these destinations. Good, cultural rich and diverse land use patterns would largely result from well-connected street layouts. Such would provide a relatively direct route and various alternatives to reach a specific destination. That would be a particular problem of suburbs with their many cul-de-sacs arrangements. The straight-line distance to a destination would be often considerably shorter than the actual distance using the main streets (Figure 11).

¹⁷⁴ Tim Townshend and others, 'Towards Transdisciplinary Approaches to Tackle Obesity', in *Obesogenic environments: complexities, perceptions, and objective measures*, ed. by Amelia Lake, Tim G. Townshend and Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 11-20., p. 11.

¹⁷⁵ Frumkin and others, *Urban Sprawl and Public Health*, pp. 92-3.

¹⁷⁶ Frank and others, *Health and Community Design*, p. 100.

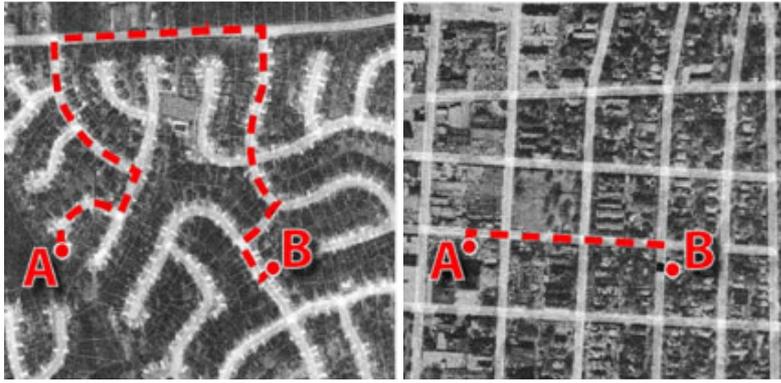


Figure 11 Disconnected and connected street networks, c 2000.

Connectivity, the amount of attractive destinations on the way and public transport has been shown key to the walkability of a living area.

The mix of different types of land uses such residential, commercial, retail would be crucial to provide a density of attractive destinations. Finally, Frank et al. attest urban design would also “a micro-level infrastructure“ such as sidewalks, trees and benches, but also reliable surveillance and the characteristics of traffic lanes, which would make a neighbourhood feel safe and attractive. In turn, such neighbourhood design would have an impact on peoples’ decision to walk or cycle to certain local destinations.¹⁷⁷ In the following I would briefly like to revisit the three modernist city concepts in order to re evaluate them in the light of these more recent studies.

To confront modernist projects of anti-urban living by Howard, Taut and Hilberseimer with today’s research on obesogenic environments has to point out that there concepts have responded to the most prevalent urban health issues of their time. They hardly could have anticipated today’s chronic or even lifestyle diseases. Since their visions contributed to such a long lasting misunderstanding that low-dense populated green living areas are healthy environments, it seems important to reconsider these concepts. In fact, Howard’s moderately urban Garden City might have provided the most “walkable“ and health promoting environment from today’s view. In this light, the most dispersed, low dense and mechanized vision of anti-urban living such as imagined by Bruno Taut or Frank Lloyd Wright may appear as the least healthy. Precisely for this aspect of urban sprawl, the time we spend commuting or the time we spent in cars, the correlation to sedentary lifestyle ad obesity has been shown by several studies. Yet, as Sieverts points out, it would be unjust to damn Wright’s emphasis on decentralisation for anticipating the sprawl without noting that he thought of his “organic architecture“ as a completely different social and political organisation.¹⁷⁸ One may point to his emphasis on a holistic life reform, with designs for more natural food supply, recreational activity and less stressful life. Precisely Wright’s project of decentralisation may not be grasped without his notion of the modern mobile life, of truly modern cars and “going“ places. I will have to come back to Wright’s notion of prosthetic architecture, and mobile technology late in the text.

¹⁷⁷ Frank and others, *Health and Community Design*, pp. 102-4.

¹⁷⁸ Sieverts, *Zwischenstadt*, p. 113.

Hilberseimer's claims to organise and minimize traffic would result in decreasing levels of every day non-leisure physical activity. Today's sports medicine would argue that specialised forms of physical activity might well compensate a sedentary lifestyle. Public health recommendations advise adults to get involved with moderate-intensity physical activity for a minimum of 30 min on five days each week. Alternatively, one may also do more vigorous-intensity physical activity for a minimum of 20 min on three days each week.¹⁷⁹ This recommendation merely deals with the given fact that more active periods are confined to separate time slots and places and would contrast a mostly inactive time spent in offices or apartments. Its main concern seems that accumulating and combining various intensities and time slots over the week could compensate lack of exercise during the rest of the time.

For the concept of the functional city, I have presented various attempts to provide sufficient and equal access to recreational facilities. At the same time, the increasing gap between private and public, attractive and deteriorated, attractive and non-attractive places in today's post-urban regions may well mirror in places of physical activity and those of none. Since statistics underline that work-related, leisure time and overall levels of physical activity are falling specific daily routines become of particular interest. A further passage of the health recommendation cited above, updated in 2007, highlights the possibility for people to combine various kinds and accumulate separate portions of activity throughout the day:

“For example, a person can meet the recommendation by walking briskly for 30 min twice during the week and then jogging for 20 min on two other days. Moderate-intensity aerobic activity, [...], can be accumulated toward the 30-min minimum from bouts lasting 10 or more minutes.”¹⁸⁰

Emphasis given to “embrace” everyday routines within such fitness profiles may indicate the increased recognition to make use of the whole cityscape and not merely separated activity environments. As Hilberseimer suggested, city dwellers would foremost walk on the clean and light pedestrian level. Apart from that, most travelling would be taking place through individual and public transports. However as Hilberseimer's illustrations might make clear even those pedestrian level remained deserted. Recent public health policies tackling lifestyle diseases seem to update the notion of the functional city. They start off from slicing recreation into timeslots of more suitable portions for users to accumulate throughout the week. But they also recommend exercises to take place on way more heterogeneous places in the whole cityscape.

As Robertson-Wilson et al. have reviewed the growing body of research projects, which have investigated the relationship between neighbourhood design features, its “walkability” and peoples' weight status. According to them, the literature suggests that more walkable areas - characterised by higher population density, more diverse mix of land use and better

¹⁷⁹ William L. Haskell and others, 'Physical Activity and Public Health: Updated Recommendation for Adults From the American College of Sports Medicine and the American Heart Association', *Circulation*, 2007, pp. 1081-93, p. 1081.

¹⁸⁰ Haskell and others, 'Physical Activity and Public Health: Updated Recommendation', p. 1083.

connectivity – would be associated with a reduced risk of overweight and obesity.¹⁸¹ Robertson-Wilson and Giles-Corti argue a closer look on the studies would reveal rather mixed evidence. Especially when studies have tried to break down walkability and neighbourhood design to single features, outcomes have hardly shown a clear picture. Statistics on walkability would not be able to highlight any particular design feature to have a more or less influential role on weight status. Furthermore, the results would differ significantly regarding participant groups of different age, gender and social background. For instance, an inverse correlation between land use mix and obesity may have been shown for middle-aged male academics. At the same time, the same factor - proximity of shops or service destination - may have little or null impact on physical activity of preschool aged children.¹⁸²

Robertson-Wilson and Giles-Corti therefore point to a general issue of such cross-sectional empirical studies. Statistics merely showing relations between walkability and obesity may hardly resolve the “chicken and egg“ question. For them, it appears possible that certain design features shape physical activity in its occupants. However, overweight and inactive persons could also prefer to move to areas, which are car-friendly and therefore suit one’s lifestyle of choice. Understandably, they insist on the necessity of clear evidence for any guidelines for neighbourhood design, since those would provide a blueprint that will influence generations of local residents. Robertson-Wilson and Giles-Corti claim for further research and an improved study design in order to gain deeper scientific insight.¹⁸³ This is an important hint for all studies in which data is retrieved through automated technology without any possibilities for participate to comment on and interpret data.

Obesogenic research points out that physical activity and calorie intake may not be seen apart from each other. Social and built environments need to be analysed in close relation, since the multiple and complex causes cannot be understood and in turn inform policies. It is important to note, that within the notion of obesogenic environments building policies are recommended next to economical policies. Street layouts and sidewalk designs are recommended next to legislations for the proximity of fast food restaurants, as an outcome of the same research approach. In my view, health promoting urban design must realise that built and social circumstances are closely related to each other. Building up on such transdisciplinary research, design would also develop more heterogenic, spatial and socially effective, interventions. So far, design policies appear to stick to rather traditional forms: Street layouts, usage patterns and sidewalk design. Mobile technologies are employed to gain data, but are hardly thought of as part of urban design projects. In the following chapter, I will still look into historical examples for health promotion, but will pay particular attention to spatial strategies that started to augment traditional health orientated architecture and town planning.

¹⁸¹ Jennifer Robertson-Wilson and Billie Giles-Corti, 'Walkability, Neighbourhood Design and Obesity', in *Obesogenic environments: complexities, perceptions, and objective measures*, ed. by Amelia Lake, Tim G. Townshend and Seraphim Alvanides (Oxford: Blackwell, 2010), pp. 21-40, pp. 23-9.

¹⁸² Robertson-Wilson and Giles-Corti, 'Walkability, Neighbourhood Design and Obesity', pp. 24-6.

¹⁸³ Robertson-Wilson and Giles-Corti, 'Walkability, Neighbourhood Design and Obesity', pp. 28-30.

II. EPIDEMIC ENTERTAINMENTS

Above, I have discussed the relationship between early modern town planning and health promotion. Specifically, I have been focussed with the various political agendas behind urban and anti-urban vision for a healthy living. Having reviewed critique at the functional city and having confronted the former with more recent studies into obesogenic environments, I have highlighted claims for moderate urbanism, featuring culturally dense, “walkable” and adaptable spatial organisation. Considering the variety and complexity at stake in health-orientated town planning, I have stated, researchers should also develop heterogenic, and goal-specific design strategies. In contrast to more traditional building practise, I will point to further spatial strategies to promote health including tourism, dramaturgy, mass media industries and education. I will pay particular attention to kind of play that has emerged from fashionable health resorts, which developed in close relation to big cities. From then, I will go on showing how bacteriologists’ mobile technologies contributed to the focus to individual behaviour in public health education. The emerging Epidemic Entertainment in the early 20th century, I will show have used a wide range of media and spaces to teach on health matters. I will conclude this chapter with a temporary education centre by Hanes Meyer and a mobile cinema van employed by Bermondsey Council to teach about personal hygiene.

Health-conscious hedonists

Rem Koolhaas points to Coney Island as the laboratory for New York’s culture of hyper dense urbanism. He opposes “hedonistic urbanites”, designing and running amusement parks to urban reformers establishing health resorts. Whereas Koolhaas has observed how the urbanites would take over in New York’s architecture and design, I will show how health-orientated town planning had learned to integrate play and entertainment before. The fashionable health resort Baden-Baden, celebrated its heydays precisely when Haussmann started off to transform Paris into a modern efficient city. Called a “pleasure exile“, Baden-Baden attracted these, who wanted to escape the city for health reasons, but also those fleeing the boredom and of Haussmann’s reformed Paris. I will show how these temporary towns provoked new forms of entertainment, (controlled) affections and cultivated nature. In this perfectly arranged and structured everyday life, games and healthcare coexist: Bathers strolled along promenades, drinking halls, spas, and landscape gardens in the morning and visited gambling halls, theatres, dance and conversation halls in the evening. Soon, popular seaside resorts such as Blackpool developed the concept of healthy tourism further. They suggested visiting a pleasurable and health promoting environment and then returning to the city, revitalised for the rest of the working year. I will pay particular attention to what kind of play seems to occur in health resorts and will highlight what Caillois describes as games of chance and vertigo. I will present health resorts as a laboratory for a health-conscious hedonism, in which entertainment and health education have met.

For Rem Koolhaas, New York's unformulated program and unspoken destination would be to exist in a world totally fabricated by man.¹ What he calls hyper-dense urbanism would have been first tested on Coney Island, a small island south of Manhattan. From there, Koolhaas unfolds the antagonism between "hedonistic urbanites" and urban reformers, which would have led in the early twentieth century to the showdown between anti-urban modernist architecture and the hyper-dense architecture of "Manhattanism".² It was hardly Koolhaas' intention to mediate between *health* and *urbanism*, in contrast for him on Coney Island places the "confrontation between the reformist urbanism of healthy activities and the hedonistic urbanism of pleasure."³ Koolhaas stresses these antipodes in order to show how the one principle would begin to succeed over the other. In his fictional conclusion, he presents an outlook on a flourishing urbanism of Manhattan presenting speculative architectural projects in a "culture of congestion".⁴ Following Koolhaas, I will show how health orientated urban reforms have likewise embraced play in particular on the threshold of cities.

First, Koolhaas' account on Coney Island will serve me as a blueprint to understand the development of resorts towns in general. As he states, resort towns would share their close relationship to cities. The rise and fall of resorts largely depends on connectivity and transport technology. Whereas Manhattan had started to become a major city since the beginning of the 19th century, Coney Island would have remained untouched from urbanisation for a long time. With the first artificial connection, the Coney Island Bridge, established in 1823, the two different sites entered their productive relationship:

"Coney is the logical choice for Manhattan's resort: the nearest zone of virgin nature that can counteract the enervations of urban civilization. A resort implies the presence, not too far away, of a reservoir of people existing under conditions that require them to escape occasionally to recover their equilibrium."⁵

Health resorts are not presented as anti-urban or escapist. They develop in close relation to cities and as essential to urbanism and urban health. As Koolhaas goes on, Coney Island would have started to attract two very different communities: In the Eastern part, several luxury resort hotels would have been built increasingly frequented by well-off cosmopolitans. These would have appreciated its isolated, unspoiled scenery and would have chosen the spot since it was well exposed to sunlight and fresh air, but also was the furthest away from the city centre. In contrast, the opposite side of Coney Island would have attracted criminals, corrupt politicians, dropouts, gamblers and prostitutes. They choose the island as a refuge that had been so far unspoiled by the law. Koolhaas stresses these two positions clash in the

¹ Rem Koolhaas, *Delirious New York - A Retroactive Manifesto for Manhattan* (New York: Monacelli Press, 1978), p. 10.

² Koolhaas, *Delirious New York*, p. 70.

³ Koolhaas, *Delirious New York*, p. 70.

⁴ Koolhaas, *Delirious New York*, p. 293.

⁵ Koolhaas, *Delirious New York*, p. 30.

large middle part of the island after the first railroad had arrived in 1865. The exclusive circle of nature seekers would have faced an invasion of new visitors, bringing along an infrastructure of bathhouses, food supplies, taverns and cheap accommodations. The previously untouched, calm beaches in the East would have become the destination for a weekly exodus of the masses. Within these boom years, Koolhaas states the need for pleasure would have dominated. Coney Island would have soon developed its own magnetism by attracting a range of special facilities to provide entertainment for the masses.⁶ Coney Island would attract visitors through providing a contrast to Manhattan, yet health was merely one selling point among many.

The following mutation of Coney Island into an entire artificial environment points to the key mechanism of hyper-urbanism:

“To survive as a resort - a place offering contrast - Coney Island is forced to mutate: it must turn itself into the total opposite of Nature, it has no choice but to counteract the artificiality of the new metropolis with its own Super-Natural. Instead of suspension of urban pressure, it offers intensification.”⁷

Whereas Howard’ Garden City would latter synthesize the best of both worlds –nature and urbanism - in a moderate form of urbanism, the temporary resort towns seeks to attract through an “intensified” experience. As Koolhaas goes on, this intensification would be first tested in the many amusement parks developing since the 1880s. Attractions such as the elephant-shaped hotel would have first annexed nature in order to turn it into mere iconic symbols. Koolhaas presents for instance The Inexhaustible Cow as a machine as being constructed to service the masses of visitors. It would have been merely “disguised” as a cow. Its milk however was seen as superior to nature, since it would deliver milk more reliably, in better hygienic quality and in controllable temperature.⁸ As Koolhaas notes, amusement parks would have consisted of high tech infrastructures such as electric lighting, modern communication networks and mass catering. The Inexhaustible Cow has been informed by contemporary experimental research, undertaken by experimental hygienists.

As Koolhaas accounts, in the early stages, amusement parks would have consisted of rides, which merely simulated natural experiences through mechanical instruments. Their program would have moved on beyond mere imitation of physical experiences such as horse riding and progressed to combine previously separate categories of experiences.⁹ Suggesting a cosmopolitan lifestyle, amusement parks would offer journeys, entertainment, education as well as preventive healthcare. At least their advertising suggests the latter. The Tango – one of the many mechanical rides – would be a convenient way to learn the dance, but also a cure for many digestive ills.¹⁰ I may note that it were the amusement parks on Coney Island,

⁶ Koolhaas, *Delirious New York*, p. 32.

⁷ Koolhaas, *Delirious New York*, p. 33.

⁸ Koolhaas, *Delirious New York*, p. 35.

⁹ Koolhaas, *Delirious New York*, pp. 42-3.

¹⁰ Guide to Coney Island, cited in Koolhaas, *Delirious New York*, p. 42.

which employed experimental hygiene to provide an efficient, safe and clean infrastructure for its visitors. Later it moves on to designing experiences with a medical benefit. To me it seems helpful to bear their entertainment strategies in mind for today's strategies of health promoting.

Baden-Baden

The fashionable health resort had emerged as a new type of resort town in the 18th century. As Monika Steinhäuser accounts, they were to provide an appropriate set-up for an aristocratic summer residency for which amusement was the key principle. Originally, fashionable health resort would have been arranged for members of the courts only, but increasingly it attracted a broader audience of economical and political elites. They would have been less exclusive than one might expect being in need of glamorous visitors, but also a significant mass of applauding spectators. Baden-Baden would be a prominent example for such a mundane resort town rising to be the summer residency of Europe's elites in the 1850s and 1860s. Baden-Baden's particular connection to Paris had been established with the extension of railways and the construction of the bridge near Kehl. Since 1845, a direct train connection from Paris to Baden-Baden brought a broad mass of people to the resort.¹¹ As for the development of Coney Island, location and connectivity to big cities was key to the development of fashionable resorts.

Baden-Baden's opulent architecture and modern infrastructure had been largely funded by tax incomes retrieved from the many casinos in town. As a result of the banishment of gambling casinos in France in 1837, many of those had moved over the river Rhine to nearby German states. They funded the wealth of many spa towns such as Wiesbaden, Bad-Homburg and Baden-Baden. As Monika Steinhäuser notes, the numerous literature and guidebooks on Baden-Baden focussed on a light mixture of anecdotes, stories on celebrities, lightly entertaining political thoughts and reports on fashion and society. They were richly illustrated and so did effectively deliver its embedded commercial intention to attract visitors.¹² Whereas other health resort towns clearly emphasized their medical and therapeutic measures, Baden-Baden from its early stages on was recognized mainly for its amusement offers. The guidebook *A Summer at Baden-Baden*, published in 1853 states:

“The catalogue of the favours nature had lavished on this locality, the enumeration and description of its never-ending festivities, must suggest the idea that Baden is merely a city of pleasure.”¹³

The author proceeds by denying this as a mere prejudice and assures the reader that “watering“ would be more than a mere pretext to Baden-Baden's entertainment offers. The

¹¹ Monika Steinhäuser, 'Das europäische Modebad des 19. Jahrhunderts: Baden-Baden, eine Residenz des Glücks', in *Die deutsche Stadt im 19. Jahrhundert: Stadtplanung und Baugestaltung im industriellen Zeitalter*, ed. by Ludwig Grote (München: Prestel, 1974), pp. 95-128., pp. 96-105.

¹² Steinhäuser, “Das europäische Modebad...“, p. 105.

¹³ M. Eugène Guinot, *A Summer at Baden-Baden* (London: J. Mitchell, 1853), p. 194.

guide openly admits that the majority of guests would be enjoying perfect health when arriving to the city, but many patients would owe recovery and wellbeing to its mineral waters. All main diseases of the time could be treated by Baden-Baden's mineral waters, its mountains and mild climate. Conclusively, the guidebook emphasizes Baden-Baden's latest health facilities and praises the medical expertise, which would be provided by the most skilful physicians.¹⁴ However, regarding the prospect in its whole, health benefits are scarcely mentioned among the many attractions. Within its heydays, health and wellbeing seems therefore to be an essential but not explicit feature of the Baden-Baden experience.

According to the guidebook, Baden-Baden's core competence would unfold during the summer, when the pleasures would "exile" from great cities.¹⁵ Baden-Baden's heydays as summer residency coincided precisely with the Haussmann sanitation of Paris. With its promise of entertainment, its liberal policies and healthy environment, Baden-Baden attracted a broad, heterogenic group of "Bathers". While the guidebook welcomes millionaires and more humble visitors, great noblemen and artists,¹⁶ Peter Martin highlights a more exclusive circle. According to him, in the house of singer Pauline Viardot, politics, society and culture merged. Her receptions and concerts would have hosted some of the most influential personalities of the time: "Bismarck, Liszt and Wagner, the lyrics Storm and Tolstoi, the painters Feuerbach and Pietsch, the virtuosi Rubinstein and Rosenhain, next to Clara Schumann and Johannes Brahms."¹⁷ Reading through this list, one would like to speculate: Baden-Baden was meeting point for those policy makers, who would claim "to clean up the city", but also for those, who sought to escape the boredom and restrictiveness of the very same reform policies.

According to Burkhard Fuhs, resort towns specified their core competency in a wide spectrum between urban and rural living. They offered therapeutic measures as well as cultural amusement and did so either for a selected or a broader audience. Socialising was key to bourgeois health resorts, as it was to the mundane Baden-Baden.¹⁸ As Koolhaas has accounted for the remote part on Coney Island, Fuhs specifies for European bourgeois health resorts. They would have specialised as calm and intimate retreats and were often situated in the midst of deep forests, far away from urban centres. They would have attracted largely middle class people of the region, who emphasized a strong work ethic, asceticism and would have neglected the luxury and hedonistic life of Baden-Baden. Even these places of as Fuhs put it "melancholic introversion" hardly branded their environment as unspoiled or untouched wildlife. Nature would have had a compensatory and therapeutic character. It was seen as technical service, which had to be provided during their clients' holidays. Fuhs states these Puritanical resorts would have contrasted their competitor's urbanity with an extra emphasize on their cultivation of nature. Advertisements would have stressed the great effort that had

¹⁴ Guinot, *A Summer at Baden-Baden*, pp. 196-7.

¹⁵ Guinot, *A Summer at Baden-Baden*, p. 8.

¹⁶ Guinot, *A Summer at Baden-Baden*, p. 13.

¹⁷ Peter Martin, *Salon Europas* (Konstanz: Friedrich Stadler, 1983), p. 105.

¹⁸ Burkhard Fuhs, *Mondäne Orte einer vornehmen Gesellschaft: Kultur und Geschichte der Kurstädte 1700-1900* (Hildesheim; Zürich; New York: Georg Olms, 1992), pp. 342-7.

been spent by Embellishment-Clubs to construct landscape gardens and to cut kilometres of footpaths through the forest.¹⁹ I am convinced puritanical health resorts have set a different tone than their more fashionable sisters, but their design followed the same strategies of intensification and urbanism described in by Koolhaas.

Fashionable health resorts are widely seen as a “miniature city centre“ that had been simply transferred to a rural, naturalistic background. Steinhäuser points to the fact that Baden-Baden therefore could adopt several typologies of health resort towns, which had developed earlier in France and Britain: It embodied representative villas on intimate property units from luxury resorts such as Bath and featured the same mixture of colonnades, pavilions and cultural facilities, which had developed in London’s pleasurable Vauxhalls gardens.²⁰ Baden-Baden’s alleys tended to turn the whole city into an “interior“ space, to be conveniently explored by its Promeneurs, much like Walter Benjamin has shown for the Arcades in Paris (Figure 12). Baden-Baden’s network of promenades connected a wide range of public buildings: Spas coexist with casinos, drinking halls next to theatres, boutiques, cafes and concert-halls. Health resort wanted to provide a perfect blend between nature and the city, which materialises here as a convenient combination of entertainment, shopping and healthcare. In the following I will accentuate their design strategies of temporal and sensational architecture.



Figure 12 Urban life around Baden-Baden’s conversation house, ca. 1860.

Baden-Baden has been considered as miniature city, which provided its visitors with a dense experience of entertainment, health care and gambling.

Steinhäuser points to health resorts as “temporary towns“ with an inherently artificial character. Since they were to react on changing seasons, fashions and different groups of visitors, their design had to be provisional and flexible. Baden-Baden’s opulent mix of stylised facades and decorative interiors responded for a great deal to its visitors’ sought for affection and sensation.²¹ After all, they had travelled a long way to experience a contrast to Haussmann’s neutral and white facades. Ulrike von Hase points to the fact that as the Benazets had a huge impact on Baden-Baden, “a man from the theatre“ became most

¹⁹ Fuhs, *Mondäne Orte*, p. 364.

²⁰ Steinhäuser, “Das europäische Modebad...“, p. 99.

²¹ Steinhäuser, “Das europäische Modebad...“, p. 97.

influential for the spa town of Wiesbaden, too. As von Hase states Heyl would have planned a theatrical character for the sake of entertainment and distraction. The repertoire of bits and pieces would have increased permanently, enhancing the fantastic scenery of exotic escapism. In order to produce entertaining scenery, the offers of amusement - concerts, matinées musicales, dance parties and receptions - as well as the visual background would have been constantly intensified.²² What Koolhaas has observed as a cardboard reality being constructed in Coney Island's amusement parks, von Hase confirms for the spa town at the turn of the century. Health resorts developed their own form of temporary and highly affective architecture. Conclusively, I will deal with the kind of play that such resorts sought to sparkle.

Walter Benjamin has compared games of chance to the monotone working day of industrial tailor's in modern factories. For him, unskilled workers would experience a lack of futility, an emptiness and inability to complete a started product as part of an assembly line. Comparable would be the bourgeois' feeling of being robbed off what they consider as authentic experiences. Benjamin describes living within the alienated, anonymous masses in great cities as a series of "shock experiences", which workers would share with idler classes. He refers to the motif of the pedestrian in the crowded streets of London, which has been famously described in Poe's mystery *The Man of the Crowd*. The latter only would react, if being jostled, and then mechanically bows over and lifts his hat. According to Benjamin, a gambler's wish to escape from such a modern "life of automatons" would, however, lead him to a very similar system, that of the mechanical hazard game. Especially addicted players would worship affects such as anxiety, worries, impatience, greed or mistrust. But those experiences provoked by gambling, no matter how passionate the player might feel about them, would be mere reactions, triggered by shock moments.²³ Gambling in this notion hardly does break out of the rigid structures of daily life in a health resort. It augments and intensifies it.

Benjamin goes on, people would be particularly attracted to machines of automotive play, as they would genuinely structure their users' experiences into "consumable units". The hazard game would give immediate feedback, in a world that otherwise would render wishes far away from daily experience. The gambler therefore would find hope and pleasure in the iterative cycles between "Faits votre jeux" and "Rien ne va plus." To Benjamin, games of chance therefore would be narcotics with which gamblers would seek to submerge their consciousness of the flying time.²⁴ Following Benjamin's notion of mechanical play. I will illustrate how hazard games were being integrated to the everyday life of health resorts.

The guidebook "A summer at Baden" gives more evidence of the constructed and designed experiences, provided by an emerging tourist industry:

²² Ulrike von Hase, 'Wiesbaden: Kur- und Residenzstadt', in *Die deutsche Stadt im 19. Jahrhundert: Stadtplanung und Baugestaltung im industriellen Zeitalter* (München: Prestel, 1974), pp. 129-49, p. 144.

²³ Benjamin, *Charles Baudelaire: a Lyric poet in the Era of High Capitalism*, pp. 126-35.

²⁴ Benjamin, *Charles Baudelaire: a Lyric poet in the Era of High Capitalism*, pp. 136-7.

“Every day has its allotted pleasures, carefully distributed so as to avoid tedium or satiety; every instant of the day has its occupation, and the hours only have the fault of flying too fast. The morning is spent in walking about the environs of Baden, and the country is so full of picturesque landscapes, so well supplied with romantic ruins, so admirably embellished with proud old castles, green hills, pretty hermitages, dark forests, foaming torrents, and cooling cascades, [...]. In the afternoon, loungers stroll to look at the shops in the alley that crosses the park and leads to the Conversation-House.”²⁵

As I have seen above, Baden-Baden goes beyond to merely reproduce the pleasures of the old “urban“ Paris, which on the rural countryside. The summer capital provided a perfectly designed blend of nature and town, which aimed to combine the pleasures provided by the old with the commodities of the modern Paris. Baden-Baden increased the density of experiences in a totally man-made environment, providing amusements and state of the art preventive healthcare. On the one hand, it literally provoked the obsession for hazard games and gambling within its well off visitors. At the same time, it did undertake precautions to reduce any harm for individuals or any public disorder in the resort town. The guidebook informs:

“Nothing is to be feared from the pleasures, which the Palace of Conversation offers you. At Baden every thing is so arranged that amusement may not hurt the health; the ball finishes before midnight, when a bell rings as a signal to extinguish the lights, and under no pretext can the amusement be prolonged. Such is an unchangeable rule, wisely instituted in the general interest, to preserve flourishing health and to protect convalescence.”²⁶

Apparently, healthcare and play have not met within the fashionable health resort in the way today’s “games *for* health“ would suggest that participating may directly result in health benefits. Gambling in the health resorts was the antipode to More’s “profitable games”. Yet they contrasted and at the same time reinforced the bathers’ daily entertainment regime.

Gambling did finance the expensive town infrastructure and architecture of health resorts. In turn, planning was to protect its inhabitants, gamblers and “bathers“ from any annoyance and risks of too exhaustive play. Whereas the Haussmann’s sanitized city bans gambling, the health resort learns how to integrate it. Particularly because Baden-Baden’s well-off visitors were largely in an excellent constitution, it can be seen as the laboratory of a city, which would have to tackle very different health threats than bacteriological or respiratory diseases. The mechanical character of gambling itself as well as the integration of games into a rigid set of health regiments indicates how healthcare pervades into more aspects every day life. Its

²⁵ Guinot, *A Summer at Baden-Baden*, p. 182.

²⁶ Guinot, *A Summer at Baden-Baden*, p. 195.

strategies of layering and merging different experiences makes Baden-Baden the embryonic stage of a city, which thinks games and health as closely related.

Blackpool

So far, I have been operating with broad understanding of the terms play and game. Game scholars point to the clear distinction being made between the two words in English language. Salen and Zimmermann note that in French and in German, the phrase *to play a game* would be a mere variation of the same word. The French say *On joue à un jeu* and in German, one would say *Man spielt ein Spiel*. They emphasize the distinction and would like to take advantage of the effort been made to consider games and play as different ideas with distinct but related meanings. They describe two possible ways to set the pair in relation: First, games may be seen as “a subset of play“. To play could be thought of as a collection of many activities including dogs playfully chasing each other, over a child singing a nursery rhyme to a community of online role-players. But not all of these forms do constitute in games as a formalized set of rules. Second, in a rather conceptual point of view, game designers and researchers may assume that to play would be only one form of interacting with games. Here, the experience of playing a game is one way of looking at it, but one could as well have chosen to deal with its structure, its storytelling or participants.²⁷ Whereas I will return to the former perspective later in the text when describing different ways of playing health games in the city, in the following I will throw more light on the kind of games that have emerged from health resorts. Roger Caillois’ classic study *Man, Play and Games* provides me with some crucial insights to the very character of games and play. Interestingly, it is mainly two of his four categories of games, which appear in fashionable health resorts and later popular seaside resorts such as Blackpool.

For a start, I will have a look in the four categories of games provided by Caillois. They are based upon what he has observed as being Man’s attitudes and motivations for playing. His first category is that of games of competition, such as football or sports in general. Its players desire to win by their own merit and want to display their talent and abilities within a regulated competition (*âgon*). Very close to Huizinga, for Caillois modern sports are the defining model for “competitive games“. Players would be motivated by their sought to show and proof their talents and capabilities among peers and to an audition within a fair and equal environment.²⁸ In contrast to that, within games of chance (*alea*), players submit their own will in favour of a passive anticipation of fate or misfortune. Playing roulette or dices would negate all man-made qualifications and would put the decision over winning or loosing out of players’ control. As a third category, Caillois describes games of simulation and make-belief, in which players would desire to assume a personality strange to their ordinary life (*mimicry*). Players imagine being someone else and do invent their own made up universe. The fourth category presents the pursuit of vertigo (*illinx*), in which players would enjoy to

²⁷ Katie Salen and Eric Zimmermann, *Rules of Play – Game Design Fundamentals* (Cambridge, MA: MIT Press, 2004), pp. 72-3.

²⁸ Roger Caillois, *Man, Play and Games*, trans. by Meyer Barash (Urbana; Chicago: University of Illinois Press, 1961), pp. 12-4.

temporarily destroy their bodily equilibrium. According to Caillois, in games of vertigo, players foremost want to escape their ordinary perception and provoke the abdication of conscience.²⁹ These categories are important for my account since it allows me to compare the kind of games that have occurred in health resorts, to those that are being emphasised by health-orientated functionalist architects and eventually the those prevailing in today's digital health game practise.

John Wilson has pointed to the "problem of leisure" that resulted from the restructuring of the workday during the industrial revolution. According to him, after waged labour and paid leisure time had been introduced, in the perspective of industrialists, the development of "work discipline" in factories would have demanded for a corresponding "play discipline" in leisure time.³⁰ Towards the end of the 19th century, health reformers and healthcare entrepreneurs began to focus on paid leisure time. The secularization of tourism produced more and more hybrid versions of resort towns. They compiled various blends of healthy environments and urban pleasure, appealing to a broad range of visitors. Popular seaside resorts had evolved from traditional spa towns along the coast of Britain. Contrasting the mundane Baden-Baden or its pendant in the UK, Bath, they were increasingly dedicated to working class travellers. Booming at the turn of the century, seaside resorts emerged from a rising average income and early legislative working hour restrictions. Leisure time soon turned into a lucrative market, in which the crowd of industrial workers became customers of a fast developing tourist economy. One of the first entrepreneurs entering this market was Thomas Cook, whose company counted more than one million customers as early as 1864.³¹

Popular seaside resorts emerged especially in the industrial northwest of England with its huge density of "cotton towns". Boosted by the development of the railway system in the 1880s, seaside resorts had their heydays in the 1920s and 1930s. In contrast to what I have highlighted for Baden-Baden and Coney Island, according to Walton & Beckerson, their advertisement initially had been closely related to health benefits. It built on the various literatures emphasising healthiness of fresh seaside air having emerged since the 18th century. This lay medical knowledge had diffused and turned into common sense by the early 19th century. As Walton & Beckerson note, resorts' publicity did hardly attack the ill health of cotton towns, in which smoke still was seen as an unavoidable sign of industrial prosperity. In contrast the seaside resort was seen in the context of the nearby cities. Their marketing would have emphasised the of a week of clean, fresh air to recover from necessary pollutions of the working day and revitalise for another year of productive labour.³² These early seaside resorts seem to resemble to what Fuhs has described as Puritans health resorts emphasising recreation in their offers.

²⁹ Caillois, *Man, Play and Games*, pp. 36-44.

³⁰ John Wilson, *Politics and Leisure* (London: Unwin Hyman, 1988), p. 22.

³¹ John Urry, *The Tourist Gaze: Leisure and Travel in Contemporary Societies* (London: Sage, 1990), p. 24.

³² John K. Walton and John Beckerson, 'Selling Air: Marketng the intangible at British Resorts', in *Histories of Tourism: Representation, Identity and Conflict*, ed. by John K. Walton (Toronto: Channel View, 2005), pp. 55-68, p. 55.

As Urry make me aware, physical distance between city and health resorts, however was crucial to concept of such health-orientated tourism. Even for local visitors and day-trippers, holiday would have had to involve the anticipation of intense pleasures, delivered by landscapes that were to be distinctive from the known living and working areas. To him, tourism would about providing new or different experiences distinctive from those normally encountered in every day life. As a result, locations providing these services necessarily would need to lie outside of cities.³³ In my view, the development of health resorts in this perspective anticipates the modernist concept of the functional city, in which work, dwelling or recreation had to be separated in distinctive areas. In fact, through modern transport systems anticipated such zoning in a bigger Metropolitan region. The development of virtual environments augmenting physical cityscape will raise this question again: In order to play digital health games one must not leave the city nor one's home.

So far, we would like to speculate that tourism might well be seen as the organised transition of the spatial boundaries between city centres and holiday resorts. Within holiday resort towns, however, spatial boundaries became increasingly important. Koolhaas has pointed to walled-off amusement parks on Coney Island, which developed as theme parks with names such as Luna Park or Dreamland. In an analogue way, seaside resorts contained their own funfair or pleasure park. Tony Bennett points to the circular wall, separating the amusement park Blackpool Pleasure Beach from the rest of the "fun city". For him, still in the 1980s, it is precisely within the walls, where "the most streamlined" and modernised form of pleasure is provided in seaside resorts. Many of the excesses, which characterise consumption in the rest of Blackpool – giant foam-rubber Stetsons, carnival-like masks, and willy-warmers would not be available inside the walls Pleasure Beach park.³⁴ He points to the diverse, mystique forms of pleasurable experiences such as traditional fortune telling, amusement arcades, joke shops, quake medicine, freak shows and monstrosities that one could have observed along the promenades in the 1930s. For Bennett, the "uniform face" of modern entertainment contrasts these, providing for instance mechanical rides at Pleasure Beach, which had been established in 1896.³⁵

Since the site had been walled off in the 1930s, Pleasure Beach took on the role of a laboratory for its wider urban context. As Bennett points out, playing its game of inclusion and exclusion, Pleasure Beach had already assumed a role in local policies very different from that described by Koolhaas. Whereas Koolhaas had opposed Puritanical health resort and amusement parks to each other at its early stages, according to Bennett, Pleasure Beach would have become a key project to re-establish the Blackpool's image as a "respectable" seaside resort. Local authorities and entrepreneurs emphasised keywords as progress,

³³ Urry, *The Tourist Gaze*, p. 2.

³⁴ Tony Bennett, 'A Thousand and One Troubles: Blackpool Pleasure Beach', in *Formations of Pleasure*, ed. by Hazel Carby and others (London; Boston: Routledge & Kegan Paul, 1983), pp. 138-55, p. 139.

³⁵ Bennett, "A Thousand and One Troubles..." , p. 139.

modernity, future and America, which are closely related to the resort's advertise up to the 1980s and should appeal to middle-class families.³⁶

Bennett's analysis provides us with two further aspects of the relationship between healthy tourism and play. First, he points to its communal character, mentioned by Caillois for games in general. In contrast to the piers and promenades at Blackpool, characteristic to the Pleasure Beach Park would be no place for solitary or the "leisurely flaneur." Its experience would foremost appeal to groups or couples – to go their alone would be a something odd – a reminder of singularity in an environment that would address plural identities.³⁷ It is important to note that this communal experience Bennett describes for amusement parks defer from any form of collaborative play, which will crucial for mixed reality games later in this text.

Bennett goes on pointing to amusement rides' emphasis on the relation between the human body and machinery. Rather than harnessing the body to work as in industrial factories, thrilling rides apparently turn the world upside down and would have released the body for pleasure.³⁸ Bennett therefore points to most machinery at Pleasure Beach as being of almost prosthetic character. Playing them would involve to surrender the body by a whole set of apparatuses, which are designed to liberate from physical limitations, in particular gravity. Bennett contrasts the experience provided by mechanical rides with exploring the Fun House within Pleasure Beach. The latter's experience would consist of spinning wheels, centrifugal bowls and slippery slopes, which the visitor is invited to explore. However, the Fun House deals with the same theme of Body vs. Machinery.³⁹



Figure 13 Amusement Rides in Blackpool and Coney Island, 1960s.

Amusement parks such as Blackpool or on Coney Island have featured a variety of play experiences. As within this two picture of Mechanical ride or in a "walk through" ride such as the fun house, amusement rides emphasis the confrontation between body and machinery.

³⁶ Blackpool largely referred to American amusement parks and actually implied many features of Coney Island For instance the dodgem introduced in 1909 were billed as "the first in Europe and direct from America". See Bennett, "A Thousand and One Troubles...", p. 140.

³⁷ Bennett, "A Thousand and One Troubles...", p. 150.

³⁸ Bennett, "A Thousand and One Troubles...", p. 149.

³⁹ Bennett, "A Thousand and One Troubles...", p. 150.

Putting your body deliberately into risk, even if slightly offset by an assurance of safety and a common faith in technology, seems to follow the same psychological kick gamblers sought after in Baden-Baden. Playing on the tension of danger and safety, thrilling rides added an inherent attraction to the holiday experience of Blackpool. Graham Johnson points to the “construction“ of play within seaside resorts. Flipping through the various categories and variations of play provided by Roger Caillois, he locates the elements of mimicry - combining make-believe, illusion, imagination and escapism - in the “carnival-like“ outside of the amusement park. In contrast to that, he points to Pleasure Beach as the place for games of competition, chance and instability. Caillois would state that amusement parks clearly consist of all categories of play. Still, he says games of vertigo are prevalent. For example, he calls thrill rides “vertigo inducing machines“. For him, it was no surprise that it needed industrialisation to bring back vertigo to modern everyday life, now in the form of controlled, safety-checked and engineered mechanical rides.⁴⁰ It is important to note that it is in particular the latter categories of competition, chance and vertigo, which are being played in Blackpool. Furthermore, we feel reminded of the very socialist aspect in the hygienists’ agenda, when for Bennett, the “construction of pleasure“ within Blackpool foremost aims to foster fraternity. For him, competition and chance, mimicry and instability tend to elide differences. All seaside tourists in Blackpool would be open to be mimicked, all would be “panicky” on the roller coaster. To some extent these aspects of play would render its participants equal before each other. He therefore sees along with pleasure, equity and fairness are being constructed in Blackpool.⁴¹

Baden-Baden’s Hazard games and Blackpool’s thrilling rides can be hardly characterised as Caillois’ notion of free, wild and innocent form of play, he referred to as *paidia*. Quite the opposite, they are very much constructed. According to Caillois, *ludus* turns every game into an institutionalized framework of more and more sophisticated rules.⁴² Due to numerous precautions, Games of chances were fitted into the structured daily regimes of Baden-Baden. In a similar way, Blackpool’s Pleasure Beach was a controlled laboratory for the popular health resort. By the 1930s, amusement parks produced a distinctive form of play that put the spotlight on the human body and its relation to machinery. Planning and constructing thrill rides largely was based on the knowledge of experimental research. The latter had to make sure that the games of vertigo did not lead to any physical harm for its customers. Games can work as exclusive and distinctive laboratory set up. Whereas Caillois stated games would have to be restricted in terms of time and space, health entertainer by the end of the century had learned how to integrate games as one aspect to their tourism. Hyper-dense, intensified experiences, formerly developed at the outskirts of the city in order to escape urban reforms, now could be transformed under the eyes of entrepreneurs and local authorities within health resort towns. With the help of modern architects, as we will see below, health-conscious hedonism will be brought (back) to the city.

⁴⁰ Caillois, *Man, Play and Games*, p. 26.

⁴¹ Grahame Thompson, 'Carnival and the Calculable', in *Formations of Pleasure*, ed. by Hazel Carby and others (London: Routledge & Kegan Paul, 1983), pp. 124-37, pp. 130-1, italics in the original.

⁴² Caillois, *Man, Play and Games*, pp. 33-9.

Downtown Athletic Club

Introducing the American skyscraper to the European functional city, Hilberseimer's Hochhausstadt might well have reduced daily physical activity to a minimum. Exercise and sports, to say the least, would be confined to leisure time and distinctive recreational places. The latter made their way from outside and near cities to their very core of one of Manhattan's skyscraper. Rem Koolhaas points to the Downtown Athletic Club as opposing the stressful financial jungle of Wall Street with a complementary program of recreation and sociability.⁴³ On the one hand, European life reformers may have opposed the latter's exclusive and hedonistic character, mixing life reform and athleticism with the animosities of luxury. On the other hand, indoor urban health clubs would have fit perfectly well into Hilberseimer's project. His automated, hotel-like apartment slabs were widely inspired by the services and organisation of Manhattan's skyscrapers. Koolhaas touches upon an important change in the relation between the city and lifestyle diseases, when he states in 1978:

“[The] Downtown Athletic Club and the American way of life, know-how and initiative definitely overtake the theoretical lifestyle modifications that various 20th century European avant-gardes have been insistently proposing, without ever managing to impose them.”⁴⁴

I will follow Rem Koolhaas for a moment, suggesting that all health-conscious inhabitants of the Hilberseimer's Hochhausstadt, sooner or later, would have joined the American counterpart to European public recreational places - the urban fitness club.

Architects Starrett & Van Vleck and associate architect Duncan planned the skyscraper for the Downtown Athletic Club, which was built in 1931. Located on Washington Street, it is in walking distance from the nearby finance district of Downtown Manhattan. It consists of 38 stories, which are connected by a battery of 13 elevators forming the north wall of the structure (Figure 14.1). Providing a whole spectrum of facilities “to restore the human body”, as Koolhaas mentions, it would combine an intrinsic sense of athletics and health mindedness with the luxury social life (Figure 14.3). The lowest floors are equipped with rather conventional pursuits such as squash and handball courts, poolrooms. The 7th floor provides us with an interior golf course, complete with miniature hills and valleys, a narrow river, bridges and real grass (Figure 14.2). What Koolhaas describes as the most extreme undertaking of the American skyscraper - to transplant an English landscape into one of the indefinite layers of a building - shows how close health reform and urban hedonism have come together in the early 20th century. Unlike arranging play next to health regimes in European health resorts, the Downtown Athletic Club piles the various programmes above each other. The layout of the ninth floor may illustrate the unprecedented new typology of urban health care. Getting out of the elevators, club members first enter the central locker room without natural daylight. Undressed, they are dispensed into several boxing and

⁴³ Koolhaas, *Delirious New York*, p. 152.

⁴⁴ Koolhaas, *Delirious New York*, p. 152.

wrestling facilities. The same locker room, yet, is serviced by a luxurious oyster bar providing an impressive view over the Hudson River. It is this combination that Koolhaas contrasts to austere European life reform: “Eating oysters with boxing gloves, naked, on the nth floor – such is the ‘plot’ of the ninth story, or, the 20th century in action.”⁴⁵



Figure 14 Starrett, Van Vleck and Hunter, **Downtown Athletic Club, 1931.**

Whereas the European “functional city” divided into zones for work, recreation and housing, Manhattan’s skyscrapers layer different functions vertically. The indoor golf course is one of the many offers for entertainment, wellbeing, healthcare and socialising that are layered upon each other in the skyscraper of the Downtown Athletic Club in Manhattan.

From storey 10 to 12, members may join in all sorts of preventive medicine including Turkish baths, massages, artificial sunbathing and barbers. As Koolhaas accounts, an explicitly medical area provides a special treatment of “body manipulation”. Doctors oversee the insertion of synthetic bacterial cultures into the human intestines in order to rejuvenate and improve the metabolism.⁴⁶ Following the indoor swimming pool on the 12th floor, the next five floors are devoted to eating, resting and socialising. They consist of dining rooms, kitchens, lounges and a library. Platform 17 mainly houses a small rectangular dance floor, where the male club members would confront the opposite sex, banned from the lower floors. From floor 20 to 35, the club merely consists of one-bedroom apartments.⁴⁷ The Club’s management therefore advertised its apartments as the ideal home for its members – preferably male, well-off bachelors - seeking for the highest standards in luxurious living. Koolhaas describes the Club as a machine for “Metropolitanites – literally self-made – who used the full apparatus of Modernity to reach unique levels of perfection [...]”.⁴⁸

The Downtown Athletic Club points to an important change in urban healthcare with respects to emerging chronic diseases. In order to follow health-related regiments, health-conscious urbanites had not to escape the city anymore. They can use and even move into an Athletic club’s skyscraper supporting them in a variety of activities including personal health management. As the health resort towns and amusement parks on Coney Island and Blackpool, the Downtown Athletic Club has specific rituals of access. As clients vary considerably within the three temporary communities I have shown above, so do the kinds of

⁴⁵ Koolhaas, *Delirious New York*, p. 155.

⁴⁶ Koolhaas, *Delirious New York*, p. 155.

⁴⁷ Koolhaas, *Delirious New York*, p. 157.

⁴⁸ Koolhaas, *Delirious New York*, p. 158.

play that occur. While the majority of offers, rides and games in health resorts, would be foremost experienced communally, it is important to realize that there is need to provide space for individual experience, too. With Caillois four categories of play, I have identified that competitive games would have a less prevalent character in health resorts than one may have expected. As the development of such communities of health conscious hedonists pervades the city, until in the form of the Downtown Athletic Club it layers and intensifies various experiences on the stories of a skyscraper, I will look into spatial strategies that explicitly targeted the urban living areas.

Theatre of Proof

After having analysed the forms of play that occurred in temporary health resorts and clubs, I will deal with a new focus in public health policies. Specifically, I will highlight how bacteriologists' new visualisation technologies and mobile laboratories have laid crucial foundations for public health education. I will follow Latour's description of the Pasteurian "theatre of proof" as a mobile experimental set up, which serves to conduct research, but also stages persuasive performances for the interested public. By following a new agent of diseases, so-called microbes, bacteriologists also developed urban health measures that would traverse traditional spatial and social borders. Yersin, one of Pasteur's disciples became particularly interested in the everyday life of microbes and would follow and document people's everyday life in urban working class areas. I will therefore show the influence of mobile technology the bacteriologist-flaneur has paved the ground for public health education, which would increasingly begin to address peoples' individual health-related behaviours.

Pasteurians' new agents of diseases

By the end of the 19th century, experimental hygienists such as Pettenkofer have produced an incredible amount of health-related knowledge. As I have shown above, they have started to inform more and more aspects of building and urban design. Rodenstein has distinguished two groups in experimental hygiene – physiology and bacteriology - as having unfolded a huge contribution to fight back infectious diseases in our cities. It would have been foremost physiologist experiments such as by Pettenkofer, which would have been materialised in many building codes and design manuals. Despite physiologists' many flawed theories, it would be their credo of More Light and More Fresh Light, which would be still present in planning up to our days.⁴⁹ The influence of bacteriology on urban design seems harder to grasp. For me, one hint seems to be their new mobile sensor and documentation tools, with which they investigated the relation between urban environments, human behaviour and the circulation of microbes.

Latour points to a weakness in physiological hygiene, to which he refers to as the old hygienists' style of "acumulation and precautionary". As their ancient forefathers of

⁴⁹ Rodenstein, 'Stadt und Hygiene seit dem 18. Jahrhundert', p. 20.

experimental hygiene, physiologists would have been obsessed by the fear of ignoring one particular detail that might trigger diseases. Physiological hygienists would have set out to investigate everything at anytime in order to draw their conclusions for an environmental almost ubiquitous design. In their logic, if anything could cause disease, every single parameter of the spatial and social environment would have to be investigated. Since their main object of interest, the industrial city, would have become extraordinarily complex, Pettenkofer and his colleagues produced an unprecedented amount of facts, correlations and theories, which became hard to overview.⁵⁰ The only point, early hygienists seem to have agreed on was that it would be environmental change that would determine a healthier city. It is important to note that what Latour describes here as the old hygienists' style of accumulation and precaution is mirrored in the ubiquitous character with which scientific town planners embrace every small detail of the built environment. As every possible influence of environment must be considered, more and more details need to be designed based upon scientific findings.

Nevertheless, all building activities including infrastructural technology, restricted building heights to experiments on buildings, flats and materials did not protect hygienists of failure. As Latour accounts, surgeons and doctors would have become increasingly frustrated that however many precautions they took - observing everything, everywhere and at any time - they still would have had to accept major backlashes.⁵¹ The broader audience would have become increasingly impatient, since they were still being confronted with continuous epidemical outbreaks of typhus, cholera or yellow fever. Such epidemics seemed to disappear and return without any known reason. More data of epidemiology revealed new correlations and in turn resulted in a new theory to be added to the long list of causes for disease. According to Latour, this concept would have faced a decreasing acceptance within the scientific community. The old hygienists longed for a new structuring of the broad and unmanageable body of knowledge.⁵² Their far-reaching and expensive guidelines for design and building were therefore increasingly hard to legislate. As Latour puts it:

“[Hygienists] were at war and were fighting on all fronts. I had compared them to a small army given the task of defending an immense frontier and therefore obliged to disperse itself along a thin cordon sanitaire. They were everywhere, but everywhere weak.”⁵³

I like to note that this weakness in the hygienists' style that Latour describes here can be also observed in a health-orientated town planning that exclusively deals with the built environment. Even if cities are being armed with infrastructural technology, sanitary tubes, wide, clean boulevards and light and dry flats, any new epidemical outbreak could potentially render its measures ineffective and disputable.

⁵⁰ Latour, *The Pasteurization of France*, p. 49.

⁵¹ Latour, *The Pasteurization of France*, p. 34.

⁵² Latour, *The Pasteurization of France*, pp. 21-2.

⁵³ Latour, *The Pasteurization of France*, p. 43.

Latour argues that a big part of the bacteriologists' success lies within their strategy to follow a different agent of disease. In his view, Sanitarians would have addressed external agents on a macroscopic scale - climate, soil, air, flats ore food - and all social agents such as poverty, overcrowding or working conditions. On the other hand, doctors would have focussed on internal and individual practices such as constitutions, terrains, humours and wounds. In contrast, bacteriologists would have followed a new enemy, the microbe, which seemed to be situated between external and internal spheres, between the crowd and the individual. As Latour puts it, any weapon to tackle this new enemy would also have travel between these spheres.⁵⁴ As I have shown above, today's research on obesogenic environments would also stress a wide mixture of causes for chronic diseases such as obesity – from internal disposition to the physical shape and nutrition policies.

However, according to Latour, bacteriologists would have ignored the massive social and spatial structures that had been developed in the 19th century and caused the massive disparities between wealth and health. By being able to detect, modify and use bacteria, the new hygienists faced a type of enemy that hardly fit into one of the old categories. Bacteriology would have offered an instrument, which promised to help focussing hygienist interventions. By identifying the formerly invisible enemy of the microbes, bacteriologists would have been able to detect, what Latour frames the “obligatory points of passage“ in their fight against disease. By applying bacteriology, hygienists would be able to structure their knowledge and to reduce the factor of chance and misfortune to an acceptable minimum. Bacteriologists began to question the effectiveness of an health-orientated environmental design, which apparently failed to prevent infectious disease. As Latour puts it, any successful application of the new bacteriological measures would render most of the expensive old hygienists' measures as superfluous.⁵⁵ Bacteriologists, it seems, had to ignore the achievements of the ”sanitized city“ in order to advance the process of making the city a healthier place.

In 1887, the potential of this emerging technology led the physician Kirmisson to doubt of the necessity of new building activities. From the view of general hygiene, old hospitals would not have to be pulled down in order to build expensive new ones. As long as strict asepsis was applied, the old spatial structure would as well do.⁵⁶ In terms of infectious diseases, bacteriology seemed to simplify any measure to the following: Either the microbe gets through and all precautions of the “sanitized city“ are useless, or bacteriologists can stop the microbe by asepsis, vaaccination, etc. and all other precautions would become superfluous.

Persuasive experiments

⁵⁴ Latour, *The Pasteurization of France*, p. 103.

⁵⁵ Latour, *The Pasteurization of France*, p. 48.

⁵⁶ Cited in Latour, *The Pasteurization of France*, p. 48.

Latour emphasises as one genius of Louis Pasteur that he would have been the master of the “theatre of proof“. In contrast to many of his colleagues, Pasteur would not have practised exclusively in the laboratory. He would have made sure that his findings are being tested in the real world and approved under the eyes of a wide public audience. Pasteurians would not have contented themselves to pure science leaving the application of their results to others. Most importantly, Pasteur would have brought the laboratory to the people.⁵⁷ One of Pasteur’s most famous experiments was conducted on a little farm at the French countryside, called “Pouilly-le-Fort“, where he has shown the new method of Anthrax vaccination. As Philipp Sarasin notes, Pasteur had not even seen the Anthrax bacillus in the laboratory, before he started his experiments in the field. But what Pasteur would have seen in “Pouilly-le-Fort“, as Sarasin puts it, would have been 25 vaccinated living sheep, surrounded by 25 corps of unvaccinated dead sheep.⁵⁸ Pasteur made sure to invite many politicians and journalists to this experiments. The persuasive effect of Pasteur’s experiments may be attested by 1883 comment by a fellow hygienist:

“Pouilly-le-Fort, as famous today as all the battlefields. [...] Monsieur Pasteur, a new Apollo, was not afraid to deliver oracles, more certain success than the son of poetry would be.“⁵⁹

Pasteurians theatre of proof would produce scientific facts, but at the same time aimed to render its outcome most effectively. In the following, I will show how technology, architecture and scenography were crucial for both research and impact of the theatre of proof.

As Latour accounts, the success of Pasteur’s “theatre of proof” would have been the result of an extensive preparation process, in which Pasteur would have travelled between the rural countryside and the central laboratory in Paris. In its first stage, Pasteurians would have moved out in order to capture the bacillus. They set out to place their laboratory within a farm or any place of interest. Yersin, a disciple of Pasteur built a straw hut and placed it within the main hospital in Hong Kong during the catastrophic Bubonic Plague (Figure 15). As the second stage, Pasteurians would go back with some germs to the well-equipped laboratory in central Paris. There, the bacillus is being moved, purified and inoculated within an experimental set up. Pasteurians would attempt to gain domination over the microbes and would begin to vary its circulation. At the same time, they would strengthen the body of the animals by vaccination. Finding this vaccine obviously was the hardest part of the whole process, for which bacteriologists still were much in need of the factor of chance. In case of success, Pasteurians could return to the public stage and conduct the most spectacular part of their theatre of proof, the well prepared experiment.⁶⁰ Mobile and miniaturized technology,

⁵⁷ Latour, *The Pasteurization of France*, p. 85.

⁵⁸ Philipp Sarasin, 'Die Visualisierung des Feindes: Über metaphorische Technologien der früheren Bakteriologie', in *Bakteriologie und Moderne*, ed. by Philipp Sarasin and others (Frankfurt am Main: Suhrkamp, 2007), pp. 427-62, p. 431.

⁵⁹ Cited in Latour, *The Pasteurization of France*, p. 87.

⁶⁰ Latour, *The Pasteurization of France*, p. 89.

here in the form of a provisional, temporary laboratory huts were crucial to spot and track microbes in the first place.



Figure 15 Yersin's straw hut laboratory in Kennedy Town, 1894.

Bacteriologist Yersin in front of his mobile laboratory. He built and worked from the straw hut in order to investigate an epidemic of the burbonic plague on the spot in Kennedy Town, Hong Kong in 1894.

It is important to note that the environment to stage the theatre of proof had to be finely balanced, too. On the one hand, as Latour notes, the site must still look as if it was an ordinary farm in order to convince the public audience. On the other hand, the experiment cannot move too far from the approved set up in the central laboratory or it may risk to fail. As Latour points out, Pasteurians brought elements from the field to the laboratory, as much as they brought certain elements of the laboratory to the field. In order to show the efficiency of vaccination, the farm would have to be transformed to some extent into a laboratory annex. In “Pouilly-le-Fort“, the vaccinated animals were separated from unvaccinated ones and had to be marked by a hole in their ears. As Latour notes, temperatures would have been checked and recorded every day, but also syringes had to be sterilised. Several more measures had to be taken care of, which none would have happened on a normal farm.⁶¹ Pasteurians’ theatre of proof had to choose carefully its location, while at the same time interacting and responding to the context in their experiment and stage design.

As much as the theatre of proof relied on transcending spatial boundaries and dramatise their experiments, bacteriologists also benefited by new visual effects on a very micro scale. For Philipp Sarasin and colleagues, Robert Koch’s colouring technologies point towards a modern form of making the invisible visible. Using the light-microscope, an invention of the 17th century, Koch developed a method, in which only a certain section of cell tissue would be colourized within the famous Petri dishes. Aniline colours were delivered by the German chemical industry and in order to document his findings, Koch would have applied early methods of photography.⁶² Elsewhere, Sarasin notes that both groups of experimental hygienists, the traditional physiologists as much as bacteriologists would have emphasized a strict ethos of scientific observation. Both would have declared to give a positivistic, in-obscure and unrevised visualization of nature. But Koch would have elaborated a method of

⁶¹ Latour, *The Pasteurization of France*, p. 89.

⁶² Philipp Sarasin and others, 'Bakteriologie und Moderne. Eine Einleitung', in *Bakteriologie und Moderne*, ed. by Philipp Sarasin and others (Frankfurt am Main: Suhrkamp, 2007), pp. 8-43, p. 20.

making bacteria visible by intentionally sending the surrounding cell tissue to the background. It therefore significantly alter from those of the old style hygienists. Sarasin points for example to Rudolf Virchow, who criticised Koch for making use of what Virchow would have called a “magic cap“. In the latter’s view colouring only certain pathogenic cells would make any context disappear and therefor hide important keys to understand nature. In contrast, Koch would have considered prioritization as a precondition to objectivity and to any representation of nature.⁶³ The Pasteurian theatre of proof relied on these distinctive modern forms of visualization developed in the laboratory and brought them together with its dramaturgical talent to real world environments and to a wider public. I like to highlight the theatre of proof therefore as an important to step in health education.

Yersin - the bacteriological-flaneur

The mobile laboratory was not only to travel between the city and the rural countryside, but would also start to analyse different urban living areas. Mendelsohn shows how Alexandre Yersin as a young medical student in Pasteur’s institute enthusiastically would have crossed the two worlds of the old and the new Paris. Yersin would have been inspired by literature dealing with the flaneur in the Paris before Haussmann. In the late 1800s, Yersin would have walked and explored those poor living areas next to Haussmann’s boulevards, which still had the same miserable condition than in the 1830s. Yersin would have been armed with mobile instruments of the modern Paris: a velo, notebooks and test-tubes for collecting his bacteria. He would have been a “bacteriologist-flaneur.“⁶⁴ As Mendelsohn points out, Haussmann’s Paris had encouraged literates or painters to leave their traditional working places and explore the city. Likewise, Pasteurians needed to go to the least expected places, they developed temporary and mobile technologies to undertake their field trips. As Mendelsohn states, Yersin would have been obsessed with the microbes’ ”habits“ and their “everyday life”. Yersin would have become particularly interested in how the microbes would evolve after the patients of diphtheria had left hospitals. As a result, his research would have blurred the boundaries between the laboratory, the clinic and the city. Yersin would have considered these three spheres as one entire domain of knowledge, including urban and rural living areas.⁶⁵ With folling the habits of the microbes, however, Yersin also investigated the habits and everyday life of his patients. I therefore like to note that his research has drawn attention to individual behaviours and further away from finding any universal codes for scientific town planning.

According to Mendelsohn, bacteriologists would have largely considered the city as a model and particularly productive laboratory to study infectious diseases. For Yersin as for most of his colleagues urban life would have been unhealthy per se. The city would be confronted

⁶³ Sarasin, 'Die Visualisierung des Feindes', p. 434.

⁶⁴ J. Andrew Mendelsohn, 'Der Mikroskopiker des modernen Lebens: Alexandre Yersin als Flaneur in Paris um 1890', in *Bakteriologie und Moderne*, ed. by Philipp Sarasin and others (Frankfurt am Main: Suhrkamp, 2007), pp. 176-219, pp. 190-1.

⁶⁵ Mendelsohn, “Der Mikroskopiker des modernen Lebens...“, p. 193.

with contagions and potential infections, which would bring microbes to virulence.⁶⁶ It is important to note that Yersin's field trips to urban living areas foremost aimed to deliver proof for his preconception that rural life was more health promoting. In this vain, most bacteriologists, conducted their experiments on small, rural communities, where they would be able to exclude the social complexity of cities. As Sarasin and colleagues note, in order to proof the prevalence of the microbes in the cities, some of them would have revived the long tradition of hygienic-medical geo-reports.⁶⁷ The two doctors Aubert and Lapresté for instance undertook the long journey from the Swiss Alps to Paris in order to estimate the total amount of germs per volume of air on different sites, which were published in 1910:

“Altitude 2000 mètres à 4000 mètres: 0
 Sur le lac de Thun (560 mètres): 8
 Au voisinage de L’hotel de Bellevue à Thun: 25
 Dans une chambre du meme hotel: 600
 Parc de Montsouris [Paris]: 7 600
 Rue de Rivoli à Paris: 55 000”⁶⁸

A combination of the new mobile strategies and the visualisation methods therefore was to deliver visual proof for the picture of the unhealthy city. We may note in passing that what I have described as the visual blueprint for the sanitized city earlier – the Parisian Rue de Rivoli – is now being used to mark the biggest contamination with bacteria. But measures as vaccination, immunisation and new diagnosing were soon implemented into the established urban structures. They were efficient, flexible, mobile, cheap, additional and therefore quickly implemented to the administrative governments of the late 19th century. By the 1890s, findings of bacteriological hygiene were even used to justify high-dense living areas and lodging houses. As Rodenstein accounts, developers would have argued that vaccination and immunisation would control the danger of infectious disease by contact between inhabitants. Therefore there would be no need to abandon urban lodging houses any more.⁶⁹ Whereas physiological hygiene underlined claims for low-dense living areas under the credo of More Light and More fresh Air, bacteriology was used by people, who did not want to restructure the city.

Through bacteriological measures, health-orientated town planning concerned with infectious disease gained a good deal of independence with regards to population density. On the other hand, health prevention from now on shifted its attention from merely designing (built) environments to diagnosing, influencing and directing the behaviour of microbes. Seeing the prevalence of microbes also very closely related to peoples' everyday life and habits, bacteriology also found the basis on which an emerging public health education, which would foremost address individual behaviour. I have shown how physiological hygiene first contributed to modern cities by informing infrastructural technology, parks and building

⁶⁶ Mendelsohn, “Der Mikroskopiker des modernen Lebens...”, p. 216.

⁶⁷ Sarasin and others, “Bakteriologie und Moderne. Eine Einleitung”, p. 27.

⁶⁸ Cited in Sarasin and others, “Bakteriologie und Moderne. Eine Einleitung”, p. 27.

⁶⁹ Rodenstein, *Mehr Licht, Mehr Luft*, p. 138.

legislations. Following Latour, I have shown how bacteriological hygiene augmented these reforms with the theatre of proof as a combination of new mobile technologies and modern visualisation technologies. The account on Yersin has shown how the spatial practise of bacteriological-flaneurism blurs the spheres of the lab, the city and people's everyday life. It also opens up a perspective to today's interactive and multimodal maps, which as I will show later, intend to sharpen one's view on how the urban environments influences one's body. In the following sections, I will deal with how Epidemic Entertainments developed a mix of education and entertainment to promote health.

Popular Health Education

In this section, I will discuss how the emerging mass media in the early 20th century has reported on spectacular successes in bacteriology, meanwhile informing on health-related behaviour and advertising healthcare products. First, I will pay particular attention to modernists architects conceiving buildings to program learning and education for the masses. Especially Hannes Meyer's ADGB school – a temporary training centre for union workers - was intended to prepare its visitors to push forward socialist reforms, but also featured advisory on health and fitness. I will show how Meyer's education centre largely celebrated media technology and will indicate the development of temporary "post sanatoriums". They were planned nearby but in close relation to great cities. I will conclude with a brief account on how municipal cinema has brought public health education to working class areas in the 1920s.

Hygiene pour tous

As Göckenjan points out the modern popular health education has its roots in the emancipative impulse of what would have been called the "medical Enlightenment." Referring to Kant, hygienists such as Osterhausen would have claimed for "man's emergence from his immaturity regarding his own physical wellbeing" in 1798.⁷⁰ Osterhausen wanted people to find their own understanding of the body and its constitution in order to set free from the paternalistic professionalism of medical men. The knowledge of the body and its parts were seen as the first step on this way and dietetics as the set of rules to improve and sustain one's wellbeing was to provide practical advisories regarding food, sleep, body hygiene and sexuality. As Hartmut and Gernot Boehme point out Kant himself is a prominent example for an intellectual of the time, who would have followed a strict regime of dietetic rules. Kant would have subscribed him a fixed amount of sleep, standing up each morning at 5 o'clock and going to bed at 10 o'clock in the evening. His room would have been heated to the same temperature, at any season of the year. He would have smoked foremost in order to support his digestion and considered walking as a comparable health-promoting activity. Kant would have led a detailed logbook on the daily performance of his body and is said to have talked exhaustively about ill health and diseases. As Boehme & Boehme show, Kant's constant care for the self indeed was close to turn into a serious psychological illness in itself,

⁷⁰ cited in Göckenjan, *Kurieren und Staat machen*, p. 84.

namely hypochondria.⁷¹ In a way Kant studying meticulously his own body, mirrors the research style of experimental hygienists, who as I have shown above, would accumulate environmental data on the city.

In the late 19th century hygienists addressed the public and attempted to turn the more introverted, self-educating approach of dietetics into a mass phenomenon. In 1880, Felix Bremmond claimed in his *Hygiene pour tous* to bring the benefits of hygiene to anyone regardless of age or class.⁷² For Sarasin, the second half of 19th century would have been the golden age of popular science and technology literature. Never before, he states, so many authors would have published such a large amount of non-fictional and non-religious literature for so many readers.⁷³ As Sarasin notes, it would have been the “vulgarisateurs” in France, who would have developed a highly popular mix of entertainment, education and practical advisory in the first place. Using the new mass press technology, they would have begun to publish texts about science in affordable periodicals and newspapers in order to increase their issue numbers. Due to stable prices in advisory books, hygiene knowledge was distributed to a broader audience of middle and lower middle class readers up to the World War I. For Sarasin, it was not trivial that it had been texts, which should direct bourgeois readers to their understanding of the self. Anyone, who wanted to learn about himself, believing in this modern form of truth by popular science, would have had to trust the media it was delivered on. He or she would have had to visit lectures, to study solitarily and had to figure out illustrations, for which it had been sometimes necessary to understand Latin. Far into the 19th century, it would have taken readers some effort to study rules of personal hygiene.⁷⁴ Obviously, in its initial stages books would have served as a medium, which appeared serious enough for its middle class audience.

With the further development in press technology, health advisory literature targeted a broader audience. Nancy Tomes framed the term of “Epidemic Entertainments” for this popular mix of education, entertainment and consumer advisory at the turn of the century. It would have been the “penny press” that pioneered a new kind of print journalism and would have redefined the conception of newsworthiness by including regular reportage on health and disease-issues. Tomes also points to the enormous impact on public attention and the popularization of the new science by photographs showing bacterial colonies. Articles reported on the latest news from what he describes as the mysterious world of bacteria, recently discovered by Pasteur and Koch. These articles were not merely meant to teach healthy behaviour and disease prevention. Epidemic Entertainments would have been so appealing that they were a selling argument in itself. They would have been included since they would attract readers and let the issue numbers rise. Such articles would have featured consumer advice and increasingly got encountered by healthcare advertisement.⁷⁵ It is

⁷¹ Hartmut Boehme and Gernot Boehme, *Das Andere der Vernunft - Zur Entwicklung von Rationalitätsstrukturen am Beispiel Kants* (Frankfurt am Main: Suhrkamp, 1983), pp. 389-97.

⁷² Cited in Sarasin, *Reizbare Maschinen*, p. 121.

⁷³ Sarasin, *Reizbare Maschinen*, p. 127.

⁷⁴ Sarasin, *Reizbare Maschinen*, p. 147.

⁷⁵ Nancy Tomes, 'Epidemic Entertainments: Disease and Popular Culture in Early-Twentieth-Century

important to note that the health content in epidemic entertainments originally had an attractive appeal in themselves.

One of the early health entrepreneurs in Germany was Louis Kuhne. A former carpenter's journeyman, he claimed to have suffered his whole life from chronic illnesses until he discovered the healing powers of natural therapy. His health care emporium included a clinic in Leipzig (Figure 16.1), a widely published health advisory book, called "The New Healing Science"⁷⁶ and a large collection of healthcare products. As Michael Hau states, Kuhne and his fellow businessmen would have managed to merge two directions in the developing market of personal wellbeing. First, Kuhne's esoteric, "pseudo-religious" style would have appealed to customers, who like him, would have felt disappointed by mainstream medical research and in response turned to alternative medical therapies. Second, Kuhne would have successfully persuaded customers to having "simplified" the necessary health regimens. Hau points to a "bewildering array" of austere therapy measures, offered by the various lifestyle reformers of the day. In contrast to them, Kuhne would have suggested: All you really need is several of our articles and to lay down in one of our steam baths (Figure 16.2).⁷⁷ The healthcare industry, which developed along Epidemic Entertainments, did embrace esoteric and naturalistic life reform. But they offered their clients health gadgets and medical machinery to be used in the city and conveniently next to their everyday lives.



Figure 16 Louis Kuhne, Establishment for the Healing Art Without Drugs and Surgery, 1898.

Add for steam bath devices distributed by the alternative healing science entrepreneur Louis Kuhne of Leipzig. As early as in the 1890s, Kuhne realized the close relation between healthcare, advertisement, infotainment and retail service.

I have shown earlier how Dr Klencke's Moring Stroller clubs may have started off to escape the city and mainstream modern research, but ended up in their offices to be fit for the day. Kuhne's natural medicine was by no means anti-urban, too. Buying bathing tubes, electrical massage beds, home water filters, or bathroom porcelain did not oppose urban lifestyle but were to be integrating easily into every household. As Tomes shows for the early 20th

America', *American Literary History*, XIV (2002), pp. 625-52, p. 629.

⁷⁶ Louis Kuhne, *Die neue Heilwissenschaft oder die Lehre von der Einheit der Krankheiten und deren darauf begründete arzneilose und operationslose Heilung* (Leipzig, 1898).

⁷⁷ Michael Hau, *The cult of health and beauty in Germany: a social history, 1890-1930* (Chicago; London: University of Chicago Press, 2003), p. 19.

century, in this fast developing market, the boundaries between public and private interests, between social welfare and personal economic profits are hard to distinguish. The numerous mass products such as cellophane, sanitary paper goods or disposable cups and dishes became successful on the American market especially during the interwar years, when their aggressive marketing strategies could build on massive advocacy by public health educators.⁷⁸ Hygiene products, based on experimental science, were closely associated to civilisation and progress. Public health education and healthcare market by the early 20th century had already targeted an increasingly urban population. The mix of interests at work in Epidemic Entertainments was part of its appeal of being entertaining and informative. The more it got hygiene pour tous, it needs to be noted, the farer away it moved from Kant's / Osterhausen's claim to educate one self.

Meyer's ADGB school: The temporary education centre

After having shown how health educators began to focus individual behaviours on the basis of bacteriological research, I will highlight two approaches to support health education. First, I will show how modernist architects designed buildings and equipment for educating workers. As Michael Hays points out, the avant-garde movement aimed at a restructuring of the subject in modern society with the means of architecture and design. What would have been framed as the emergence of a "posthumanist subject", Hays observes in particular in the projects of Hannes Meyer and Ludwig Hilberseimer.⁷⁹ I have shown Hilberseimer's scheme for an automated environment earlier in this text that indeed seems to emphasis organisation over individual emancipation. First, Hays illustrates the posthumanist subject with respect to how architects would have seen themselves in relation to their designs. More libertarian characters such as Le Corbusier would have wanted to restore a humanistic notion of the artist as an autonomous and poetic author. As I will show later in more detail, Adolf Loos might have aimed for contemporary formulation of individual subjectivity by providing his clients safe, private interiors. In contrast to that, Meyer would have questioned the subject as a psychological autonomy.⁸⁰ Especially Meyer's ADGB school – a temporary training centre for union workers - was intended to prepare its visitors to push forward socialist reforms. I will show how Meyer's education centre largely celebrated media technology and indicate the development of temporary "post sanatoriums", which would be built nearby but in close relation to great cities.

Hays roots Meyer's origin as an educator in his early involvement with more artistic practises. He for instance shows Meyer's affiliation to the Dada practise in his early works of the *Co-op* series. The *Co-op Vitrine* of 1925 for instance, would merge the formal language of avant-garde "high culture" - assemblages, repetition and series - with icons of popular mass products. Featuring Havana cigarettes, Gillette's razor blades or Ford's T model and including their wide spread advertisement graphics, Meyer aimed to reach for a broader

⁷⁸ Tomes, *The Gospel of Germs*, pp. 250 ff.

⁷⁹ K. Michael Hays, *Modernism and the posthumanist subject: The architecture of Hannes Meyer and Ludwig Hilberseimer* (Cambridge, MA: MIT Press, 1992), p. 6.

⁸⁰ Hays, *Modernism and the posthumanist subject*, p. 6.

audience, hitherto unfamiliar with the art circus.⁸¹ For Hays, the resulting artwork is not a mere representation produced by a distant observer, but an immersive illustration and appropriate metaphor for modern production methods.⁸² Meyer's installation would have aimed to enable visitors to experience the virtual language of modern cities, which was about to change so radically. In addition to modern city life, the *Co-op interior* of 1926 presents the essential items of the New Dwelling: Next to some medicine like food presented in glasses on the wall, there is a gramophone (playing the "adequate" modern records as bespoken in *Die Neue Welt*), a cot and a foldable chair hanging on the wall (Figure 17). As Hays points out, the project of the Co-op interior was in fact the photograph itself, illustrating the spatially arranged objects, presented at one of the Bauhaus exhibitions. It would have never been meant to become a real interior. The Co-op interior depicts the gadgets required for a modern lifestyle, one that would have become more mobile than ever. It illustrates Meyer's essays on the aesthetic of standardization, repetition, mechanized media, advertisement, nomads, impersonality and collectivism.⁸³ This projects use architecture to express an educational program.

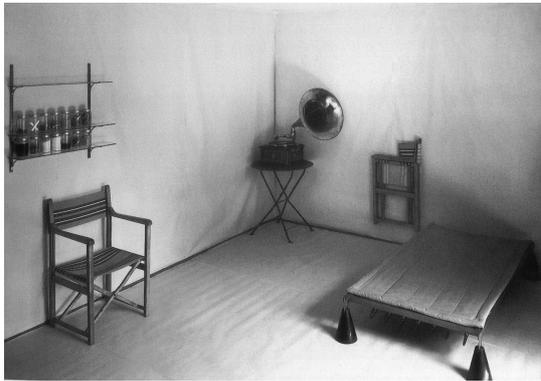


Figure 17 Hannes Meyer, Co-op Interieur, 1926.

Hannes Meyer's necessary equipment for a modern lifestyle: Medicine, a foldable chair, a gramophone and a cot.

In these early works, Hays shows to which extend Meyer, the virtual artist, had been influenced by Dada practise. The Co-op projects would appear like Dada photomontages, providing immersive illustrations, yet an "exterior" view on a reality of estranged objects.⁸⁴ Meyer wanted people to experience and learn the virtual language of a modern world, in which the posthumanist subject would have to get along. In this light, Meyer already appears as the physical educator and optimistic designer, who would later portray himself as a sportsman architect in front of a planning board. For Meyer, the Modern Man would not get annoyed or overwhelmed by contemporary urban life. On the contrary, the new reality would train and sharpen his senses. Meyer's illustrative Co-op projects were meant to be instruments of "cognitive retooling".⁸⁵ I like to follow Hays on that observation seeing

⁸¹ Hays, *Modernism and the posthumanist subject*, p. 38.

⁸² Hays, *Modernism and the posthumanist subject*, p. 45.

⁸³ Hays, *Modernism and the posthumanist subject*, pp. 65-8.

⁸⁴ Hays, *Modernism and the posthumanist subject*, pp. 168-70.

⁸⁵ Hays, *Modernism and the posthumanist subject*, p. 72.

Meyer's Co-op projects as an artistic practise to that explores the limits of lowbrow and highbrow culture. I like to highlight the mixture between entertainment and education in his Co-op interior in which the gramophone is next door to the medicine supply.

As Hays states, one of Meyer's most important projects realized in his time as Bauhaus director was the Federal school of the General German Trade Unions Federation (ADGB). It was built in 1928 to 1930 at Bernau near Berlin (Figure 18.2). Financed by the ADGB, the school was to house members and officials attending short courses for one to two months. Its design was to become a model facility for a series of centralised institutions by the ADGB.⁸⁶ As Adolf Behne states, Meyer had to accomplish a delicate task there. On the one hand, the architect had to develop a modern facility that teaches participants effectively in the Unions operational work and underlying ethics. On the other hand, as participants were mostly volunteers, they shall be rewarded by a high standard of modern design. It would contrast overcrowded apartment houses, where most participants would normally live. Behne's describes the balance of ADGB school would have to avoid becoming a *Schulkaserne* stressing the picture of a closed, oppressive 19th century education institution. At the same time, it must not be drawn into any representative luxury, which would remain strange to workers' movement.⁸⁷ It is important to note that Behne considers modernist, minimal architecture as a reward by itself. The resulting design is very much focused on its educational program.

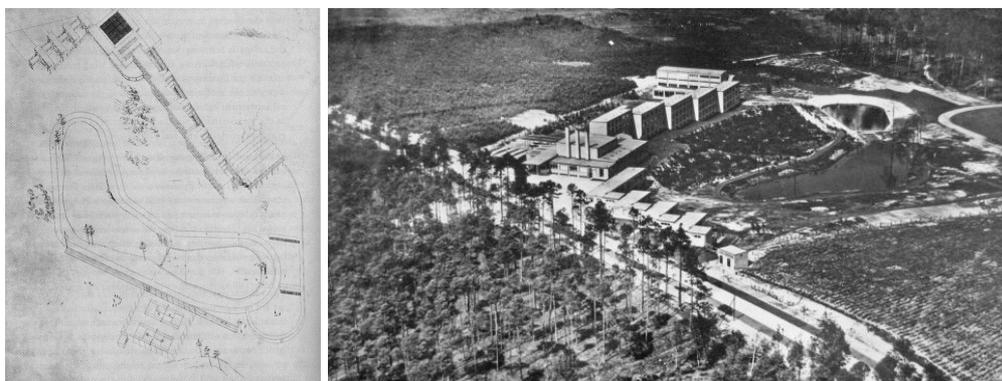


Figure 18 Hannes Meyer and Hans Wittwer, ADGB school, 1928-1930.

Plans and diagrams showing Meyer's interest in forming learning in his education centre for workers. Architecture was to increase efficiency in terms of learning, motivation as well as recreation for its guests.

According to Meyer, he would have won the competition for he would have put forward a new form of socio-educational organization. In order to foster social interactions, Meyer suggested housing the 120 male and female students in cells of 10. Five double rooms were assembled in one cell, which were distributed over four building blocks of three stories (Figure 18.1). Members of these cells would sit together in the dining room and attend classes

⁸⁶ Hays, *Modernism and the posthumanist subject*, p. 135.

⁸⁷ Adolf Behne, 'Bundesschule in Bernau Bei Berlin. Von Architekt Hannes Meyer.', *Zentralblatt der Bauverwaltung*, LI (1931), 211-22. Reprint in Hannes Meyer, *Architekt 1889-1954 Schriften der zwanziger Jahre* (Baden: Lars Müller, 1990), p. 213, translation my own.

together. As Meyer notes, this organisation was to foster camaraderie and communal experience during the relatively short period of the stay. According to Meyer, the ADGB School layout would be a direct “plastic translation” to the “socio-pedagogic functions” of such an institution.⁸⁸ If the Coop-interior was to be an illustration in order to teach people about modern lifestyle, The ADGB school was a built program.

Meyer would seek to translate these functions through interplay between standardised, cheap materials, and automated media technology. In his own words, the pervasive character of his architecture may be described as follows. Next to mechanical devices such as an automatic shading system on the verandas, it would include “producers of effects” such as graphic systems as diagrams, organizers. Those have become architectural devices themselves:

“A colour system helped the visitor to find his way. In this concourse were light signals (reminiscent of railways signals) which shone green, yellow, blue, and red, and inside the three-storey residential wings the basic reddish colour changed, as one mounted, from scarlet to vermillion to pink, and to the three ‘cell’ colours on the wall of the entrance to each corridor. [...] At the touch of a button the lecturer could increase or decrease the size of the 45-ft. wide hall window like a camera shutter. Another button set in motion the three elements of the end wall so that maps, diagrams, pictures, etc. slipped noiselessly into position. Another button controlled the lighting system and could produce any degree of illumination from the dim light of the diffusers to the dazzling glare of the stage lights. The flooring was red, the furniture black, and the cellophane material of the walls silver. The lecturer himself appeared as a silhouette against a white square of rear wall.”⁸⁹

Architecture in the traditional sense is pushed to serve in the background. Meyer seems to be way more concerned with spatial organisation and supporting visitors’ focus on learning. Thus, Meyer seems to play here on an extended architectural language including all sorts of media able to produce psychological effects.

The psychological apparatus seeks to program certain behaviour and knowledge with an entirely designed and artificial environment. Though Meyer did emphasize that his design consists of transparent parts, giving great and uplifting views to the countryside, it can potentially be based anywhere. Being decorative but not compulsory, a site placed in a beautiful landscape or by sea was mere add-on. The AGDB School introduces a new type of modern education centres. However, whereas Meyer’s building was to be used for the Trade Unions Federation, it did not address health-related content explicitly. In a way, though Behne claims it would have a “healthy” effect on students, the ADGB is the post-sanatorium. Unlike the traditional sanatorium visited to recover from tuberculosis, for instance described

⁸⁸ Cited in Hays, *Modernism and the posthumanist subject*, pp. 135-6.

⁸⁹ Hays, *Modernism and the posthumanist subject*, p. 140.

in Thomas Mann's *Magic Mountain* in the Swiss Alps and "high above the flatlands,"⁹⁰ the ADGB School was to stay in touch with the real world. Its architecture seeks to simulate real world situations and in turn hopes to have an impact on participants' behaviour that may be sustained in their everyday life.

There is another difference to the sanatorium, which may be illuminated by Mann's novel, on which he worked from 1914 to 1924. Whereas its main character, the 22-year old Hans Castorp, initially plans to stay for 3 weeks in the Davos Mountains, his return eventually gets delayed by seven years. High above the chaos of the Modern world, Castorp begins to contemplate over the chaotic situation in the early 20th century. Originally planning a career as engineer, he begins to learn from various characters, being introduced to the philosophical positions of the time. As Sloterdijk puts it, Mann seems to deal with the question how the individual subject may face modern time, dealing with it while at the same time not losing its humanist heritage.⁹¹ Seen as a temporary education centre, Meyer's AGDB School is the socialist answer to Manhattan's Downtown Athletic Club. Whereas the one is an elitist club, the latter is meant for the new society of workers. Yet, whereas the former is situated within a skyscraper of Manhattan, the latter is (still) located *nearby* Berlin. These two models as being opposed to the sanatorium already overlapped in various aspects. They will approach each other in their attempt to become more and more pervasive and ubiquitous in order to educate users. The AGDB School is a temporary learning environment, it has determined functions and objectives with an arguable potential to support behaviour change. After their courses of one or two months students are dispensed into their real lives again, where they would remain learned behaviour until the next stay in a school. But one may hardly imagine a participant asking to spend an extra month in this post-sanatorium to contemplate about life as Mann's character choose to stay in Davos.

Mobile Cinema

In the early 20th century, public health policies discovered education as main instrument to improve people's health in the city. As Tomes points out, public health education would have originated in private initiatives, largely recruiting from middle class volunteers. He refers to "visiting nurses" for instance, who would have visited American households, dressed in clean, white aprons, in order to spread the knowledge about disease prevention, mainly housecleaning and food preparation.⁹² According to Tomes, the American Anti Tuberculosis movement would have been one of the pioneers in the field of health promotion. They would have explored new ways of making health education more accessible by largely borrowing strategies from the advertisement and entertainment industries. The picture of a 1920s street parade, complete with elephants wearing posters shows such early attempts to inform on the spread of tuberculosis and bring knowledge from laboratories to the street (Figure 19).⁹³ Including posters, cartoons, moving pictures, health exhibits, and parades, the movement

⁹⁰ Thomas Mann, *Der Zauberberg* (Berlin: S. Fischer, 1924).

⁹¹ Peter Sloterdijk, *Kritik der zynischen Vernunft* (Frankfurt am Main: Suhrkamp, 1983), p. 923.

⁹² Tomes, *The Gospel of Germs*, p. 143.

⁹³ Tomes, *The Gospel of Germs*, pp. 121-2.

clearly anticipates today's attempts to sell the serious content with strategies from advertisement and entertainment. Tome's example of the elephant parade illustrates that educational content (statistics on tuberculosis prevalence) and entertaining form of media can be totally disparate. In fact, one can imagine the same parades informing on trade union's rights or demonstrating against the war. I may note that the expressive power of such campaigns depends merely on the novelty of the media through which it is delivered. Even though the content is brought to the street, it hardly connects to people's routines or everyday environments.



Figure 19 American Tuberculosis Association, Streetparade, c 1920.

In the 1920s, the American Tuberculosis Association implemented many publicity strategies from the advertisement of early health entrepreneurs. Here we see a street parade that informed on tuberculosis statistics in New York, complete with elephants to catch attention.

The public health movement soon progressed in their techniques and reached high interest in publicity. Involving cinema and radio broadcasting, they commissioned a series of public health movies in the very early stages of Hollywood. Titles as *Temple of Moloch* in 1914 presented the fight against disease as high melodrama in which instructions about “proper” coughing, sweeping, and ventilation would have been woven into a rousing tale about a young public-health doctor trying to help a working class family.⁹⁴ Elizabeth Lebas has pointed to over 300 so-far identified films having been sponsored by local authorities in Britain from 1920s to the 1980. What she call municipal cinema projects would have aimed to boost the cinema culture and alternative projects, but also attempted to augment attempts in adult and school education in working class areas.⁹⁵ The content of these movies also documents the growing interest on the body, the individual, and its behaviours within public health policies. This shift of focus may be expressed by the following comment of a senior Public Health officer in 1926:

“Until recently preventive medicine was external and environmental - the removal of nuisances, scavenging, water supply, sewerage, housing and hospital accommodation, etc. Of necessity, a matter for local and central government in which the individual contributed its part indirectly as an

⁹⁴ Tomes, *The Gospel of Germs*, p. 121.

⁹⁵ Elizabeth Lebas, *Forgotten Futures - British Municipal Cinema 1920 - 1980* (London: Black dog, 2011), p. 14.

element in that government. But this objective is now to some degree fulfilled and in every direction the prevention of disease is becoming a personal concern rather than a matter dependant upon the central, or even the local authorities responsible for the supervision of Public Health.”⁹⁶

This comment reads as a forecast of a city, in which environmental causes for disease would have been taken care of by various policies and the focus of attention would need to go towards education and individual learning.

Lebas pays more attention to the making of these municipal cinema projects. Especially those movies produced by and in the south London Bermondsey Borough, which would have from one of the worst slums in 19th century to a model reformist project in the interwar years, are being described as self-made, almost participatory products. The movies would have never employed professional actors. All people participating would have been either member of the Council staff, in direct or indirect relation to them or indeed the targeted audience and spectators in the streets.⁹⁷

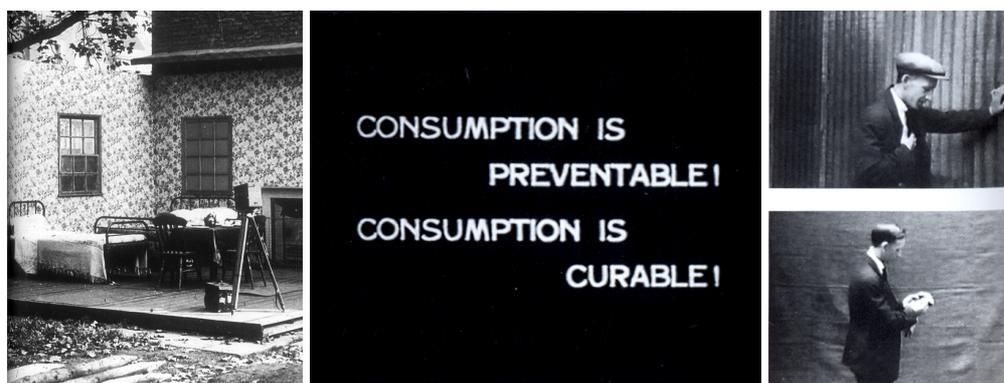


Figure 20 Bermondsey Borough Council, outdoor film studio, c 1930.

Municipal movies in the interwar years have been sponsored, produced and performed in close interaction with local authorities. They were produced in the local neighbourhood for instance in such temporary outdoor studios and featured laymen actors.

Lebas points to the enthusiasm by the amateur filmmakers. The style of the Bermondsey movies would have explored bricolage and pushed pragmatic problem solving. Yet their filmmakers would have also pointed to early rules of thumb for delivering persuasive messages.⁹⁸ As she notes, hardly any public health movie, produced by a council in Britain would have produced any material that seemed to be critical of local employers or working conditions. In fact, apart from a three examples dealing with the management of tuberculosis, and two dealing with the prevention of diphtheria, personal hygiene, food and exercise would have been the prevalent subjects.⁹⁹ One may have speculated that the content and plot of these movies would have corresponded to everyday life of the people it was produced by and

⁹⁶ Cited in Lebas, *Forgotten Futures*, p. 18.

⁹⁷ Lebas, *Forgotten Futures*, p. 86.

⁹⁸ Lebas, *Forgotten Futures*, p. 90.

⁹⁹ Lebas, *Forgotten Futures*, pp. 92-3.

for. If these movies can be seen as partially participatory, then health indeed was a major concern in the wider public, which such municipal movies expressed.

As Lebas shows, these early viewings often used public space to illustrate the relevance of their topic, but also provide a communal and entertaining experience. The Bermondsey Council would have purchased three generations of cinema vans in the period from 1924 to 1936 (Figure 21). Lebas describes the public showings in early and late summer months in various spaces in Bermondsey, mostly near Council facilities to use their provision of electricity. Particularly the showings in the courtyards of the newly built housing estates in her view must have made a surreal atmosphere of a broad appeal to many people.



Figure 21 Bermondsey Borough Council, Dental Health Publicity cinema van, 1927.

One of the cinema vans used by the Bermondsey Council to teach dental hygiene and show some of their health publicity films in the 1920s.

They would have provided the scene of an amphitheatre that at the same time was dedicated to modernity. Especially for school children she points to the fascination of such early open-air viewings:

“It is hard not to muse on the thrill of setting out at dusk with your friends to watch 'the council picture show' being held around the corner when there was school tomorrow. No doubt open-air film displays enlivened street life and provided a measure of organised fun - maybe a model counterpoint to the hop fields.”¹⁰⁰

Lebas' study on Municipal cinema of the 1920s points to a certain degree of user participation in such health propaganda movies, which seems astonishing in light of urban health policies. Through council staff and users being involved in the production of these movies, they point to a certain degree of participation in health education. Their performative character, which turned streets, courtyards and playgrounds into a cinema points to locative media and urban scenery that may have developed precisely from an amateur enthusiasm rather than from a top down approach.

¹⁰⁰ Lebas, *Forgotten Futures*, p. 99.

III. PROSTHETIC ARCHITECTURE

After I have shown how early 20th century public health activities have begun to focus on health-related behaviour and learning, I will pay more attention to the technologies and apparatuses that were meant to support health related behaviour change. After discussing functionalists' health machines that have sought to determine certain routines with the most specialised and customized objects, I will revisit the organic emphasis of participatory and open-ended design processes. By following up claims to develop personally tailored and expressive forms from inside out, I will highlight more contemporary prosthetic architecture as a participatory design tool that helps to reveal environmental influences on one's body and wellbeing.

Boxer and Engineer

The modernist architects' cult around the body and sports partly originates from the humanistic notion of universal education. In the late 19th century the Renaissance *Universal Man* was celebrated to have achieved an extraordinary variety of understanding and skills in different disciplines such as literacy, music, rhetoric, natural sciences, military and sports. The Florentine architect Leon Battista Alberti may give us an idea of what was considered as being well educated in Renaissance Italy. In his autobiography *Vita* of 1438, the reader learns that Alberti from early childhood on would have been devoted to the "proper and skilful handling of arms, horses, and musical instruments, as well as to literature, the liberal arts and all recondite and difficult knowledge."¹ According to his writings, Alberti must have been in an excellent shape. He goes on stating to have practised ball playing, the use of the javelin with thong, running, wrestling, and above all, He would have loved to climb up steep mountains. Alberti recalls that as a youth, he would have excelled in military exercises. With his feet tied together, he would have been able to jump over the shoulders of a standing man. He would not have pursued all these activities for play and sensual delight, but foremost for remaining and sustaining his health.² Alberti's *Vita* bursts out of accounts on the author's outstanding self-discipline and performances, which may underline some of the modernist psyche of hedonism and health-consciousness.

As Renée Watkins notes, Alberti occasionally would have admitted minor, personal weaknesses, but merely to show how he eventually would overcome them. "A man", that was Alberti's credo, "can become whatever he wants, if he has the will."³ For Watkins, Alberti's self-mastery, his drive to be innovative and creative at all time, being solitary but at the same time being so much concerned with his appearance to others, gives evidence of his distinctively modern character. Watkins states, Alberti's obsessive care for the self has much of what modern psychotherapy would diagnose as "narcissistic disorder".⁴ In her reading, what the romantic art historian Burckhardt have celebrated in the late 19th century as

¹ Renée Watkins, 'L.B. Alberti in the Mirror: An interpretation of the Vita with a New Translation', *Italian Quarterly*, XXX (1989), pp. 5-30, p. 6.

² Watkins, 'L.B. Alberti in the Mirror', p. 6.

³ Cited in Watkins, 'L.B. Alberti in the Mirror', p. 15.

⁴ Watkins, 'L.B. Alberti in the Mirror', p. 26.

Alberti's "heroic solitude", seems more like the necessary adoption of a Modern Man in an urban Florentine society. In the latter, instability of political units, but also rapid class mobility would have already been prevalent. That may be particularly true for Alberti, who had been a talented yet not gifted. According to his Vita, he was an outsider and illegitimate son, who had been deprived of his father's heritage, but never asked any of his more wealthy friends for favours. As Watkins concludes, Alberti would be a prototype of a Modern Man. He would have already begun to distinguish himself as an individual, who sees himself apart from any sense of social belonging.⁵ Walter Benjamin stresses the relation of modernity and heroism when he claims for the industrial worker as well as the modern writer in *Paris of the Second Empire*: "It takes an heroic constitution, to life modernity."⁶ Before I will go on discussing how many modern architects would build up their designs on simply assuming such a constitution for everyone, I will pay more attention to more critical sociological analyses.

By the early 20th century, the "new" middle class seems to have completely embraced this competitive attitude. Siegfried Kracauer has documented the climate of competition, substantial anxiety and at the same time escapism that became prevalent among the masses of office workers in Berlin in the 1920s.⁷ In his study *Die Angestellten: Aus dem neuesten Deutschland* ("White-Collar Workers: The Latest from Germany"), he frames the new and increasingly precarious German middle class, which enthusiastically embraced sports in their every day life and especially on weekends. On his journey across modern offices, Kracauer compiles quotations, publications, law cases and correspondences taking on the role of what Benjamin has described in 1930 as "a rag picker on the dawn of the revolution."⁸ By talking to the staff of the lower and higher management, to directors and their assistants, Kracauer gives us a picture of the somewhat dark side of the process of mechanization of the working life. Yet, as Benjamin puts it, Kracauer would be less concerned with the people, who are not miserable a priori, but would seek to reveal the social circumstances, that make people miserable.⁹ Benjamin's comments may render Kracauer's report even more important to better understand social mechanics behind an increasing emphasis on performance, sports and wellbeing.

Kracauer describes accounts on the early days of staff recruitment in which a climate of competition, health-consciousness and sport would have flourished particularly well. An

⁵ Watkins, 'L.B. Alberti in the Mirror', p. 27.

⁶ Cited in Fritz Neumeyer, 'Der neue Mensch. Körperbau und Baukörper in der Moderne', in *Moderne Architektur in Deutschland 1900-1950 - Expressionismus und Neue Sachlichkeit*, ed. by Vittorio Magnago Lampugnani and Romana Schneider (Stuttgart: Hatje, 1994), pp. 15-31, p. 15.

⁷ Siegfried Kracauer, *Die Angestellten - Aus dem neuesten Deutschland*, first published in "Frankfurter Zeitung" in 1929 (Frankfurt a. Main: Suhrkamp, 1971).

⁸ Walter Benjamin, 'Politisierung der Intelligenz - Zu S. Kracauer: Die Angestellten', in *Die Angestellten* (Frankfurt am Main: Suhrkamp, 1971), pp. 116-23, p. 122. (Original in German, translated by M.K.: So steht von Rechts wegen dieser Autor am Schluß da: als ein einzelner. [...] Ein Lumpensammler frühe im Morgengrauen, der mit seinem Stock die Redelumpen und Sprachfetzen aufsticht, [...] nicht ohne ab und zu einen [...] spöttisch im Morgenwinde flattern zu lassen. Ein Lumpensammler, frühe - im Morgengrauen des Revolutionstages.)

⁹ Walter Benjamin, 'Politisierung der Intelligenz - Zu S. Kracauer: Die Angestellten', pp. 116-8.

inflation of diplomas and graduate titles would have been considered essential to be armed within an unprecedented amount of young people, who would have sought to get one of the popular non-manual, clean and intellectually demanding jobs offered in modern companies.¹⁰ The recruitment process has been invented as an array of competitive working probes and psychological tests, in order to find the most suitable apprentice for an increasingly rationalized capitalistic system. Therein, as Kracauer states, people would have to sustain a “full-scale test“ of their talents being developed by the emerging recruitment psychology and agencies.¹¹ Kracauer stresses the importance of a pleasant appearance, which would have been demanded by employers. The latter would have openly stigmatized obvious disabilities, abnormalities and illnesses as decisive disadvantage in the struggle for jobs.¹² For Kracauer, the increasing success of beauty salons, healthcare products and sports, results from the new lower middle classes’ huge concerns to fall behind:

“Due to the fear to be considered as old and not of use anymore, ladies *and* gentlemen dye their hair, and forty-somethings get involve in sports to remain in shape.“¹³

According to Michael Hau, the life reform movement also mushroomed precisely in this period of economical uncertainty. For him, the popularity of life reform clubs can be explained largely as a result of a growing awareness of health as a precondition for success in a modern society.¹⁴ They would have attracted a wide range of the “salaried masses” including skilled workers, merchants, clerks, low-level administrators, teachers and the emerging technical professions of engineers. Hau points to a major shift in the role of health mindedness: Whereas the 18th century dietetics sought to distance themselves from the idle and debauched nobility, body cult and fitness in the early 20th century would have become increasingly used to underscore a bourgeois distinction to the lower classes.¹⁵ Life reformers experimented with a broad range of health regiments such as vegetarianism, therapeutic baths, and psychotherapies. They would have explored the therapeutic value of nudity and sunlight and whatever else may have been considered as health promoting.

As I have shown above, public health education had begun to spread the knowledge about personal hygiene, clean housekeeping and the benefits of pursuing healthcare products from the late 19th century on. According to Hau, life reform would have added the cult around the body, its outer appearance and ability to perform. As part of the secularization of bourgeois values, these values would have become accepted by at least some sectors of the working class, too. Hau points to a slight growth of percentage of workers, who became members for instance of natural therapy associations in Germany before the First World War and mentions

¹⁰ Kracauer, *Die Angestellten*, p. 19.

¹¹ Kracauer, *Die Angestellten*, p. 20.

¹² Kracauer, *Die Angestellten*, p. 23.

¹³ Kracauer, *Die Angestellten*, p. 25, translation my own.

¹⁴ Hau, *The cult of health and beauty in Germany*, p. 10.

¹⁵ Hau, *The cult of health and beauty in Germany*, p. 11.

the commercial success of medical advisory books.¹⁶ Particularly the latter document their close relation between life reform and modern architecture.

As de Bruyn shows, medical men, who authored medical advisors, seemed to stress the analogism between modern buildings and modern healthcare. Doctor and author Friedrich Wolf would have emphasized in his best selling advisor *Die Natur als Arzt und Helfer* that modern architecture shares many values with what he proposed as the “natural healing science“. Wolf introduced his health advisor with claims, usually stated by modern architects such as “Less is more!“ or “An end to the facade!“ For healthcare and for modern buildings the same principles would have to be applied. Wolf would have liked to see the attributes of “honesty“ and “clarity“ adapted to modern healthcare.¹⁷ At the same time, as Fritz Neumeyer points out, architects and designers likewise tended to impose the discipline and efficiency that characterised their structures onto users’ lifestyle. Avant-garde functionalist designers would have used to think of buildings and its inhabitants in an analogue way. Next to the efficient, mechanical, and rational sculptures for them would have come the trained, slim, productive body of its inhabitants. Neumeyer puts it neatly when he states that modern architecture and its optimized, transparent forms were to stage the new cult of the body. Neumeyer points to the role of sport as a tool to bring back sensual, bodily experience to a modern lifestyle, in which the body would have been seen in risk of becoming obsolete. Sport and life reform in an age of decreasing manual work and physical activity would have been to restore a sense of the body.¹⁸

Marcel Breuer, famous for his steel armchairs, delivered a most bespoke example for the New Dwelling with his apartment for the director Erwin Piscator in Berlin. Sigfried Giedion referred to Breuer’s interior in his pamphlet *Befreites Wohnen* (“Liberated Dwelling“) as showing “exemplary usage and living in the apartment house“. ¹⁹ Hygienist Müller-Wulckow comments on the same apartment in 1931: “Free space for physical training and breathing exercises - a necessary start of the day for the intellectual engaged worker - must be integrated to the interior within big cities.“²⁰ Breuer’s design counts on occupants’ self-mastery and devotion to physical education. It has an open plan and consists of mobile furniture, which at any time can be removed to make space for physical exercise. It provides several sport gadgets such as training balls and weights. On the right hand corner of the bedroom, we face a small foldable box containing Piscator’s bed. At the opposite side of the room with wooden floors, a clean, white wall bears a climbing wall and fits a punching ball (Figure 22).

¹⁶ Hau, *The cult of health and beauty in Germany*, p. 13.

¹⁷ Gerd de Bruyn, 'Am meisten enttäuscht war ich von Corbusier', *Stuttgarter Zeitung*, 13 July 2002.

¹⁸ Neumeyer, “Der neue Mensch...“, pp. 22-4.

¹⁹ Cited in Neumeyer, ‘Der neue Mensch’, p. 16.

²⁰ Cited in Neumeyer, ‘Der neue Mensch’, p. 16.

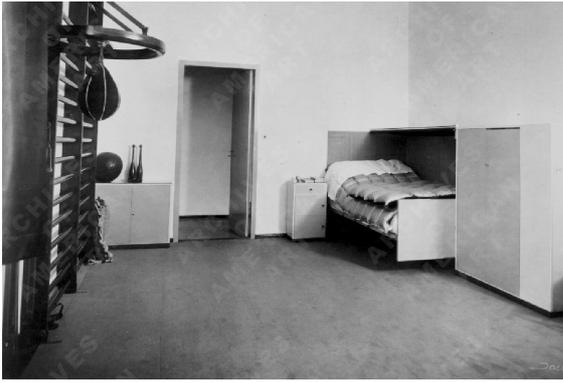


Figure 22 Marcel Breuer (architect), Piscator apartment, Berlin, 1926-7.

Marcel Breuer's design for the director Piscator's apartment in Berlin has been seen as an outstanding example for the New Dwelling. It devotes various equipment and a large amount of space to exercise indoors, which would have become crucial within an urban environment.

De Bruyn has pointed to Friedrich Wolf, who did not merely advocate for functionalist architecture theoretically, but also made physical exercise a crucial daily regiment. Originally, Wolf would have planned to move in to one of the model houses for the New Dwelling at the Weissenhof exhibition in Stuttgart. Being Jewish and active socialist, he would have been denied to buy the house by the local authorities most likely for political reasons.²¹ Wolf eventually managed to surmount all obstacles and moved for a short period into his house near the Weissenhof, which had been planned according to his visions of hygiene and healthcare by the befriended architect Richard Döcker (Figure 23). According to de Bruyn, visitors faced scarce, white walled architecture, without any ornament or pictures and in which they would have to sleep in beds without any pillows. As we can see on the cover of Wolf's pamphlet *Gesund trotz Tempo 1000*, he did apply a rigid daily regiment to him and his family. This would include morning showers of ice-cold water on his terrace that was exposed to the sun, but carefully concealed from the public view (Figure 23.2). Apparently, his life reform of rigid self-mastery seemed strange to more and more friends. As de Bruyn accounts, the Russian artist Sergej Tretjakow, a friend and visitor to Wolf's house in 1929, would have fled lately of what he called a "dogmatic household" into the nearby city centre.²²

²¹ De Bruyn, 'Am meisten enttäuscht war ich von Corbusier'.

²² De Bruyn, 'Am meisten enttäuscht war ich von Corbusier'.



Figure 23 Richard Döcker, House for Friedrich Wolf, Stuttgart, 1928.

Wolf's house in 1928 in Stuttgart, designed by Richard Döcker. Cover of Wolf's pamphlet for alternative healthcare, which shows him and his son at their daily personal hygiene on the balcony.

Fritz Neumeyer confirms Kracauer's description and points to avant-garde artists and architects as having characterised the modern society foremost by its daily competition between individuals. In their point of view, people would have been bound to make use of both - a sharp rational thinking and a competitive mentality. As Neumeyer puts it, the New Man, as framed in George Grosz' portrait of 1921, would be a sportsman and engineer at the same time. He would rush from a punching ball to a planning board, capable of a precise and productive mind as well as a trained, physically strong body.²³ In order to succeed in a Modern Life, avant-gardist architects seemed to assume, the Boxer and Engineer would have to train continuously his body and mind. Starting off from various political backgrounds – from communism, socialism to more liberal or bourgeois views – modern architects embraced sports as a game of which they hoped to support individual lives and chances, but also the society as a whole. Health, life reform, wellbeing, and sports moved to heart of the modernist movement and design agenda.

Biological Apparatuses and Artificial Limb Objects

Most avant-garde designers would have agreed to support the *Boxer and Engineer* in his struggle to adapt to an increasingly mechanised and economically optimized environment. Le Corbusier also aimed to support users in sustaining their health and referred to interiors as “artificial limb objects“. His optimized functional interiors were to provide users with more time and space to indulge in *recreational* activities for which he included rooftop jogging tracks, gyms, sport gadgets and extra large bathrooms to his designs. On the one hand, his buildings were to provide more people with access for what was widely considered a healthy lifestyle. At the same time, the minimalism and transparency of some of Le Corbusier's buildings were the ideal stage to display its inhabitants' fitness and health. Within the climate of competition and body cult described above, such an interdependency of play and display seems to shift the attention to peoples' self-responsibility. Modern sports particularly, from a game design view, have been criticised as foremost competitive play. Various public health educators have pointed to the counterproductive and often unintended results of competition in sports: Whereas only a few sporty types are doing exercises, a majority of people would

²³ Neumeyer, 'Der neue Mensch', p. 15.

participate foremost as spectators. I will argue that Le Corbusier's emphasis on healthcare equipment along with the notion of competitive play hardly encourages the people whose health would benefit the most but foremost attracted well-off hedonists already enthusiastic about sports and healthy lifestyles.

As Hilberseimer suggested applying Taylorism and scientific management to town planning, Hannes Meyer dealt with a science-based design process for buildings. For him, all designed objects would have to follow functional and economic considerations. Meyer claimed that the *Neues Bauen* ("New Building") would no longer have to follow aesthetic and artistic considerations, but was to be a "biological-functional process". In response, Meyer thought of houses as "biological apparatuses" serving the needs of its users' body and mind.²⁴ Meyer claimed that as a first step of any design process, architects must examine daily routines of each person to live in the house. A function-diagram would have to be assembled and needed to be set into relation to the outside world. Therefore any routine of the "postman, passer-by, visitor, burglar and neighbour" would become of interest and needs to be gathered.²⁵ Apart from these specific studies, architecture would embody the knowledge of a variety of related research disciplines. Meyer claims to involve a whole team of experts, recruiting from diverse disciplines such as economics, sociology, sanitary, ecology, management, as well as health care. In this view, architects become generalists with the main expertise to organise information provided by more specialised research disciplines. As Meyer concludes, the New Building is pure organisation, "social, technical, economical and psychological organisation."²⁶

As shown above experimental hygiene had produced numerous facts about the human body since the late 19th century. Meyer wanted to mediate this knowledge into his design process. He identifies twelve "main motives" for building:

"1. sex life, 2. sleeping habits, 3. pets, 4. gardening, 5. personal hygiene, 6. weather protection, 7. hygiene in the home, 8. car maintenance, 9. cooking, 10. heating, 11. exposure to the sun and 12. service."²⁷

Apart from "car maintenance" – which seems a brainchild of the time – almost each point can be traced back to classic set of rules of dietetics. According to Peter Blundell Jones, Meyer aimed to base building on a purely scientific and measurable basis. In his view, Meyer's dogmatic and reductionist approach was to reduce design to a series of measurable proceedings. Those would exclude "soft" factors such as local and cultural traditions, personal taste, emotions, and history, which would be hard to grasp with measures of natural science.²⁸ Jones does not criticise Meyer's general approach to build a house according to

²⁴ Hannes Meyer, 'bauen', *bauhaus zeitschrift für gestaltung*, II (1928), pp. 12-3. Translations are taken from Conrads, *Programs and Manifestos on 20th Century Architecture*, pp. 117-20.

²⁵ Meyer, 'bauen', p. 12, translation is my own.

²⁶ Meyer, 'bauen', p. 13, translation is my own.

²⁷ Meyer, 'bauen', p. 12.

²⁸ Jones, *Hugo Häring - The Organic versus the Geometric*, p. 80.

foremost health-related motives. What Jones points out is that each of Meyer's twelve motives for building would have been informed by a second and "inexhaustible" list of factors, which would also see building under the lenses of objectivity, science and measurement. Jones stresses that excluding personal flavours, needs, biographies, and history from this second list would result in an oppression of individuality. It is important to note, that he does not question Meyer's agenda of a biological apparatus in the first place.

As I have shown above, Thomas Sieverts has seen modernist dogmatism developing within Hilberseimer's work. Likewise, Jones points out that Meyer would have advanced the impoverishment that gave Modernist architecture such a bad name in the post-war years.²⁹ While Sieverts describes how he himself, as a young researcher in the 1960s, would have experienced Hilberseimer ignoring new insights from sociology and cognitive research,³⁰ Jones suggests in a footnote that "more pleasing results" in functionalist architecture may be achieved through more academic effort in psychological understanding of architecture.³¹ For Sieverts and Jones, it seems more the reductionist process through which modernist functionalists' designed urban machines and apparatuses respectively that bears issues. As both seem to suggest, these issues may be fixed by including more transdisciplinary research, in particular social sciences. In Sieverts view, scientific functionalism needs to be updated and modernist claims for "More Light and More fresh Air!" would have to be added with more social sciences. In order to see the whole band with of functionalist architecture, which claimed to be health-orientated, the Swiss architect Corbusier's adds a further approach.

Le Corbusier's everlasting ideal aesthetic was the golden ratio, which regulating lines he recognised as the basis of so many masterly compositions in painting and architecture.³² One of the major tasks of architects, for him was to mediate between these ideal, geometric forms and user's actual everyday concerns and physical requirements.³³ In this vain, Le Corbusier invented *The Modulor*, a measuring tool to support architects, engineers and urban designers developing standardized products to serve best both these claims. The Modulor inserted a 1.82 m (6 feet) tall man, with his arm upraised, into a geometrical system of squares, circles and right angles. When adjusting this system to what Le Corbusier identified as the human body's decisive points of its occupation of space, it appeared to him, that the underlying mathematical principles included the golden ratio and the Fibonacci series. Le Corbusier insists that this insight came to him while being encapsulated in a ship's narrow cabin on a trip to New York in December 1945. These cabins in Le Corbusier's mind served both incredibly well – the need to pack as many people as possible on a boat and to provide a minimum of luxury and convenience for its passengers. Nevertheless, Le Corbusier claimed his Modulor to be "anthropocentric". Due to his measuring tool, the New Man could be better integrated to a universal and harmonious system of geometry, rational thinking and

²⁹ Jones, *Hugo Häring - The Organic versus the Geometric*, p. 80.

³⁰ Sieverts, 'Eine Begegnung mit Hilberseimer'.

³¹ See footnote in Jones, *Hugo Häring - The Organic versus the Geometric*, p. 211.

³² Le Corbusier, *The Modulor: A Harmonious Measure to the Human Scale Universally Applicable to Architecture and Mechanics*, trans. by Peter de Francia and Anna Bostock (Basel: Birkhäuser, 2000), p. 26.

³³ Le Corbusier, *The Modulor*, p. 175.

aesthetics. In his view, The Modulor would not take away a particle of freedom from designers, but unfold plenty of possibilities to play with it.³⁴

However, Le Corbusier's approach started off from, in his own words, "what contains" (architecture) and then would subordinate "what is contained" (people).³⁵ As de Bruyn puts it, Le Corbusier's would have had a strict "Platonic" worldview, in which ideas would appear to be more real than material issues. For Le Corbusier, geometry, mathematics and rational thinking would represent an idealistic order that reveals universal truth. Such could hardly be surpassed by man's experience. Le Corbusier would have drawn the conclusion that artists therefore needed to address "primary" forms such as the square or the circle and would have been obsessed with geometric orders his life long.³⁶ Yet the results, machines for living, as de Bruyn points out would have hardly sold on their own. New artist-architects would therefore have to design dwellings according to new rational, economical guidelines so that they can be mass-produced. But on the other hand, they would have to provide propaganda for the new modern style by educating its potential occupants so that they would make themselves at home.³⁷ In order to promote his geometric forms, Le Corbusier seems to apply a rather esoteric approach. His designs therefore came in the whole package of the modernist style in which geometric, rational environments were shipped with the idea of a "harmonious" system, designed for world peace, health and regeneration.

Le Corbusier presented the advantages of his interiors through the collection of earlier articles in *L'art decoratif d'aujourd'hui* ("The Decorative Art of Today") in 1925. He claims that modern interiors in particular must be seen as "an extension of human limbs" or "artificial limb objects". Furniture would have to become "orthopaedic", since humans would be "insufficiently armoured" for the age of "mechanical systems".³⁸ As Kenneth Frampton notes, Le Corbusier's interiors were closer to the idea of equipment than any notion of furnishing before.³⁹ Even though important tools, interiors for Le Corbusier would be only a secondary problem. Ideally, they serve people to let them focus on things of primary importance, which in his view would be "true" art such as the paintings in the Sistine chapel:

"For our comfort, to facilitate our work, to avoid exhaustion, to refresh ourselves, in one word to free our spirit and distance us from the clutter that encumbers our life and threatens to kill it, we have equipped ourselves through our ingenuity with human-limb objects, extensions of our limbs; and by making use of these tools, we avoid unpleasant tasks, accidents, the sterile

³⁴ Le Corbusier, *The Modulor*, pp. 49 ff.

³⁵ Le Corbusier, *Modulor*, pp. 181 ff.

³⁶ Gerd de Bruyn, *Die enzyklopädische Architektur - Zur Reformulierung einer Universalwissenschaft* (Bielefeld: transcript, 2008), pp. 193-4.

³⁷ De Bruyn, *Die enzyklopädische Architektur*, p. 195.

³⁸ Le Corbusier, *The decorative art of today*, trans. by James I. Dunnet (London: The Architectural Press, 1987), p. 72.

³⁹ Kenneth Frampton, *Le Corbusier* (London: Thames & Hudson, 2001), p. 59.

drudgery [...]. [We] organise our affairs and, having won our freedom, we think about something - about art for example (for its very comforting).⁴⁰

Artificial limbs therefore shall be designed to optimize routines and reduce any superfluous physical activity to a minimum. His notion of the functional interior would define distinctive places and times to separate activities. For Le Corbusier, there would be a time for work, but also a time for meditation. Where in the former one, would exhaust oneself, in the latter, one would recover and rediscovers harmony. As he insists, there should be no confusion between them. In a time of extreme competition, in order to be productive, economic and healthy one would better follow a strict classification of tasks – one for work and one for meditation.⁴¹ As the functional interiors shall optimize every day routines, more time can be spend to enjoy what in Le Corbusier's view would be the more uplifting activities including arts or sports. In a way, Le Corbusier seems to have given up on fighting against an increasing mechanization. His artificial limb objects were to reduce the time people would spend in such a harsh environment, so that they can escape in to their free hours and weekends in nature.

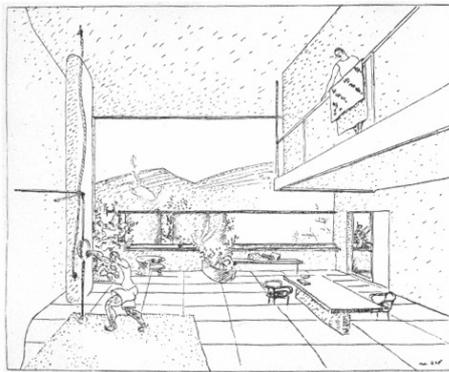


Figure 24 Le Corbusier, Apartment development for Edmund Wanner, sketch, 1928-9.

Le Corbusier imagined the modern Man to work out and study early in the mornings before heading off to work.

At the same time, according to Neumeier, Le Corbusier brought living and physical exercise together in the most consequent way. In 1929, he would have introduced the boxer to the field of architectural drawing. In his illustration of the interior for some living units, one sees a young male doing exercises with a punching ball on his terrace in the morning sun. An open book may suggest that the Modern Man had already studied before preparing himself physically for the working day. It is precisely this illustration that recalls the figure of a universally educated Man of Alberti's *Vita* (Figure 24).⁴² In his design for the *Villas Immeubles*, housing units of 2 storey mansions, flats included separate rooms, exclusively devoted to physical exercise and in service of a communal tennis court. Furthermore, on the roof of the *Unite d'Habitation* at Marseilles, he installed a running track, open air and complete with covered gyms and a paddling pool (Figure 25). Janson observes how the design and layout of details on the rooftop would make its a place for various activities

⁴⁰ Le Corbusier, *The Decorative Art of Today*, pp. 74-5.

⁴¹ Le Corbusier, *The Decorative Art of Today*, p. 84.

⁴² Neumeier, 'Der neue Mensch', p. 19.

beyond mere exercise. A shower, flower beds and a couch made from concrete would invite to run and play, but also to rest, sunbathing, and paddling and socialising.⁴³ Le Corbusier's new typology for sporty and urban living seems to feature a large variety of experiences physical exercise and beyond.



Figure 25 Le Corbusier, Rooftop Unité d'habitation, 1954.

Proportions of the rooftop facilities in Le Corbusier's Unité d'habitation including a running track, swimming pool and gym, which all have been designed upon the measuring tool of the Modulor. I may note in passing that the measure of the track (300 m) pays no attention to international sport standards (330 or 400 m).

From a sports medicine point of view, Le Corbusier's recreational programme seems to consist of an ideal mix between aerobic and anaerobic exercises, between moderate and highly exhausting sports. However, the question remains how Le Corbusier's sport equipment and communal spaces would encourage a majority of people to get involved with daily exercises. Following Janson's observation on the Marseille rooftop, I may state that Le Corbusier provided a possibility space offering a wide variety of activities to be staged and stimulated by an engaging design for daily performances, conversations and workout, which might appeal to many inhabitants. As Neumeyer suggests, however, the modernists' credo of maximum transparency and true constructions would reveal a building's structure behind its facade, but also display its inhabitants' constitution. In the following, I will show how sociologists have explained participation in traditional sports and specifically why they foremost seem to appeal to people already interested in healthy lifestyles. I will then move on showing how modernists' emphasis on transparency through large horizontal openings and panoramic windows plays would reinforce this effect.

Modern Sports: Competition vs. Fair Play

In the following, I will highlight how the emphasis on competition in modern sport has been seen critical in the perspective of sports sociology and game design. I have mentioned Roger Caillois' study on games earlier in this text. He may have well objected games *for* health as being designed to produce outcomes beyond entertainment. Caillois might have rejected the mere possibility of serious games since he has opposed the world of play to that of reality. In

⁴³ Alban Janson, "'Emouvant de jour et magique la nuit.'" Die architektonische Wirklichkeit der Unité d'habitation', in *Le Corbusier - Unité d'habitation, Marseille*, ed. by Axel Menges, 2nd edn (Stuttgart; London: Axel Menges, 2007), pp. 18-39, p. 34.

his view, play would be essentially a side activity free and separate from everyday life, being circumscribed within strict limits of time and space. The outcome of games would need to be uncertain and essentially unproductive. By definition, in Caillois' view, play may not create any material goods, nor wealth or elements of any kind. It must, except of the exchange of property among players, end in a situation identical to that prevailing the game. Caillois concludes his list of attributes of games with play being governed by rules, suspending ordinary laws and conventions and inventing its own reality.⁴⁴ None of these characteristics go well together with the notion of a "serious game" or traditional sports that were so important for modernists' architects.

Caillois deals with a potential interplay between play and serious. He addresses the question what would become of games when the sharp line between their ideal rules and the more diffuse laws of daily life would be blurred.⁴⁵ But he focuses on how games are being corrupted by what he calls "contaminations of ordinary life" and hardly considers asking how games may engage certain behaviour in real life. Caillois was more interested in showing how social and political structures influence play and in turn how studying games may retrieve sociology. For Caillois games can be seen in a continuum of poles, referred to as "paidia" and "ludus". Paidia is described as natural, free, innocent, anarchic, improvising and capricious form of play. Caillois compares it to the way a little child would play with a toy. In contrast, under the mechanism of ludus, all categories of games are being transformed into social institutions of complex rules and culture. Caillois demonstrates ludus at work particularly within the theatre, where the instinctive exploration of illusion, make-belief and simulation would be disciplined until it becomes an art of numerous routines, refined techniques and subtle complex resources. Confusingly, as he notes, this framework of rules directing mimicry in the theatre would be called "a play".⁴⁶ Terms as "disciplining" and "institutionalisation" underline Caillois' idea that games would progress towards the pole of ludus being more and more structured.

Partly, this development would originate in the fact that most games are being played in a community. Johan Huizinga's description of Homo Ludens – of Man the Player - has also pointed to the systematization of play in contemporary society due to the invention of modern sports such as football.⁴⁷ In a rather cultural pessimistic way, Caillois states that more free forms of play could surely not longer survive. One motive for play would have become prevalent over all others: competition, which to him was "a law of modern life" and would suppress all other motivations for play.⁴⁸ I have shown how functionalist architects saw sports as a measure to support the modern man in his daily struggle to compete for jobs. I have shown how Le Corbusier highlighted the need for functional, efficient ways to relax and get in shape in his writings on interiors. More socialist sport enthusiasts such as Hannes

⁴⁴ Caillois, *Man, Play and Games*, pp. 9-10.

⁴⁵ Caillois, *Man, Play and Games*, pp. 43 ff.

⁴⁶ Caillois, *Man, Play and Games*, p. 31.

⁴⁷ Johan Huizinga, *Homo Ludens - A Study of the Play-Element in Culture* (London: Routledge, 1949; 2002), pp. 197 ff.

⁴⁸ Caillois, *Man, Play and Games*, p. 44.

Meyer might have hoped that the values of equality and fair play being fostered in sports would influence the society at large. Whereas, for some modernist architects sports could not get serious enough, in contrast, game theorists such as Huizinga and Caillois argue that games and modern sports in particular would have become too serious.

Caillois warns that any game, which ignores the equilibrium between his four categories - competition, chance, make-belief and vertigo - risks to fail, and hardly would be enjoyable. Precisely, he constructs several pairs of necessary antipodes, which any game combines in order to appeal to players.⁴⁹ To him, the most prevalent interplays are those between competition and chance, respectively those of make-believe and vertigo. For him, any of these poles needs to be cautiously arranged in order to guarantee an open outcome game. Playing card games for instance, even a skilled player can be stricken by bad luck. As cards are provided randomly, beginners would remain the chance of winning. Ludification seen as the constant adjustment of rules is a necessary game mechanic, which ensures the equality of chances. For Caillois, if the equilibrium between competition and chance would be ignored, as the case in competitive sports, participation decreases. The interplay between competition and identification in games would explain why the majority of people follow competitive sports, but hardly gets involved. Especially in a world of communication, achievement-driven sports often would result in very uneven distribution of participants and spectators. Whereas only a few take part, Caillois points out, the majority would participate by watching and identifying with one of the competitors.⁵⁰ Sports in this view, are far away from the inclusive quality today's serious games are being associated with.

The work of Norbert Elias and Eric Dunning is widely recognised as having pioneered the field of sports sociology. Generally, their approach of figurational sociology stresses the notions of "individual" and "society" as interdependent objects, which hardly can be studied apart from each other. In their view, modern sports become a crucial showcase for cultural and social organisation in modern societies. By researching the social dynamics of football, for instance, Dunning has hoped to contribute to the wider understanding of sociological issues such as union management, class and international relations.⁵¹ Elias describes the development of modern sports as a process consisting of two phases. For him, it would have started off and was closely related to the emergence of parliamentary organisation of politics in 17th century England. One precondition for a parliamentary system would have been participants' commitment to a moderate form of organising power without violent outrages. Accordingly, this sense of rule bound fair play would have developed in early team sports such as cricket. Elias describes sports as events of "controlled tension", which would have managed to organise and display moderate conflicts among its participants. Originally, therefore an elitist group - aristocrats and increasingly businessmen – would have explored new forms of more differentiated and civilised social interaction through modern sports.⁵² In

⁴⁹ Caillois, *Man, Play, and Games*, pp. 71 ff.

⁵⁰ Caillois, *Man, Play, and Games*, pp. 157 ff.

⁵¹ Eric Dunning, 'Introduction to Some Concepts and Theories', in *The Sociology of Sport: A Selection of Readings*, ed. by Eric Dunning (London: Frank Cass & Co, 1971), pp. 3-10, p. 10.

⁵² Norbert Elias, 'Introduction', in *Quest for Excitement - Sport and Leisure in the Civilising Process*,

the 19th century a second wave would have taken place, which Dunning has covered more extensively. Team sports such as football and rugby, have been further rationalized and standardised in the bourgeois milieu of public schools. The latter institutions would develop sports as rule bound forms of releasing aggression and mediating conflicts. Moreover, games would have been to teach certain values of “sportsmanship“ since civilised and restrained ways of conflict solving would become a precondition for economical exchange in the early industrial society. Sports as a distinctive form of social interaction became therefore a crucial agenda of any bourgeois education.⁵³

Allen Guttmann points out that modern sports would be partly pursued for their own sakes, such as being a pleasurable experience and partly for equally secular reasons such as promoting one’s health. For Guttmann, modern sports’ have an “inherent“ tendency to equalise both the chance to participate and the conditions of the game situation itself to guarantee a “fair“ competition.⁵⁴ Apart from long-term processes described by Elias and Dunning, Guttmann points to disciplines, which had been invented on purpose. The physical educator James Naismith for instance would have presented basketball on 21st December 1891 at the Y.M.C.A.’s training facilities in Springfield, Massachusetts. The very fact that one can attribute to basketball the name of its inventor, the exact date and place would signal for Guttmann the modernity of the game.⁵⁵ Naismith responded to a challenge set up by the head of the International Training School, who had stated that young people needed some winter game to be played indoors. After a few experiments within the facilities, Naismith came up with a solution: A sport that would meet the requested requirement. For Guttmann, the game was a conscious invention, a cultural artefact to be designed, used, re-designed.⁵⁶ I will have more to say about cultural artefacts to be designed, used and re-designed in participatory design processes within digital games.

The rules of basketball, however, like those of all modern sports soon would have become “universal“. They are accepted all over the world by a web of “sports bureaucracy“ that would make sure those standards are widely spread and international contests are organised. Universal rules and condition would be a precondition to compare participants’ achievements to other participants, to relate results to former times and to different places on the globe. Quantification and bureaucratization combined with a huge emphasis on competition, for Guttmann, culminates in the concept of records, which would take on an “extraordinary place“ within modern sports. Records, in Guttmann’s view, must be seen ambiguous. On the one hand, they would motivate participants and spectators to get involved in competitive sports, but also would mark the point where any further progress of the discipline approaches physical limits of the human body.⁵⁷ In this view, precisely the focus on competition,

ed. by Norbert Elias and Eric Dunning (Dublin: University College Press, 1986), pp. 19-62, pp. 27-33.

⁵³ Eric Dunning, 'The Development of Modern Football', in *The Sociology of Sport: A Selection of Readings*, ed. by Eric Dunning (London: Frank Cass & Co, 1971), pp. 133-51.

⁵⁴ Allen Guttmann, *From Ritual to Record: The Nature of Modern Sports* (New York: Columbia University Press, 1978), pp. 26 ff.

⁵⁵ Guttmann, *From Ritual to Record*, p. 40.

⁵⁶ Guttmann, *From Ritual to Record*, p. 41.

⁵⁷ Guttmann, *From Ritual to Record*, pp. 47-51.

rationalization symbolised in the quest for records, outline why sports also may become unhealthy.

Ian Waddington reminds us that a huge amount of studies have shown that regular and moderate, rhythmic physical exercise such as brisk walking, jogging, gentle swimming, or dancing has a significant and beneficial effect on health. So called “aerobic activities“, including every day exertion such as climbing stairs or slowly cycling is clinically and epidemiologically proven to be effective in prevention and management of a large variety of diseases.⁵⁸ Moderate exercises as well as an increased activity level would be therefore largely promoted in public health recommendations. Since exercise and sports would be overlapping categories, these recommendations may include several forms of participation sports, too. But in Waddington’s view, it is important to distinguish between sports and physical exercise with regards to their varying consequences for health. The big difference for him is the competitive element in sports. Competition would be inherent to modern sport, but usually more or less absent from exercise. As a result, one could exercise alone, but one could not play sport alone, since one needs an opponent. Whereas individual participants involved in exercise could determine his or her own speed, intensity and duration of activity, even if exercising in small groups, in sports, particularly in team sports and even more in high-level team sports, participants would become part of a system of interdependencies. They take part in games that more than often appear to them as “having a life of their own.“ Waddington largely identifies this as a result of professionalization of sports, which imposes growing forces on athletes in the sports industry and international competitions.⁵⁹

Elias sets the two poles of “participation sports” and “achievement sports” into correlation, stating that professional sportsmen, on the one hand, depend on the enthusiasm of amateur sportsmen and spectators, who spend their money in the sports industry. At the same time, amateur participants are highly influenced by performances and records of professional players, which they try to achieve even though their training is confined to non-working time and their “performance” therefore must fall behind.⁶⁰ Waddington points to various personal accounts and statistics of increasing chronic and accidental injuries occurring in competitive sports. These, in turn, would go hand in hand with the abuse of drugs and painkillers. These developments, which would be by no means confined to professional sports but have spread to all levels of sports, would underline that modern sports may hardly be considered as being healthy a priori.⁶¹ It is the balance between competition and collaboration, which determines certain kinds and sets of rules modern sports as inclusive and indeed health promoting. This is crucial to bear in mind, when I will later in this text come back to “collaborative” digital health games.

⁵⁸ Ian Waddington, 'Sport and Health: A Sociological Perspective', in *Handbook of Sports Studies*, ed. by Eric Dunning and Jay Coakley (London: Sage, 2000), pp. 408-21, pp. 411-2.

⁵⁹ Waddington, 'Sport and Health', p. 413.

⁶⁰ Norbert Elias, 'Foreword', in *The Sociology of Sport: A Selection of Readings*, ed. by Eric Dunning (London: Frank Cass & Co, 1971), p. xiii.

⁶¹ Waddington, 'Sport and Health', pp. 414-5.

More recently sports sociologists underline this criticism on competitive play. Wolfgang Schlicht and Ralf Brand confirm that sports at least until the 1970s were mostly reserved for its records and competition. Attracting merely the talented and those who perform well, participation would have been confined to middleclass males and would have largely excluded women, the old and untalented.⁶² Today, however, they like to observe sports being conceptualised as “multidimensional”. Various sport models – from adventure to health-orientated activities, from physical exercises in fitness clubs to competitive sports - would please diverse demands from participants of all social milieus. To participate in sports would not be restricted anymore to a specific social or age group, neither to ethnic background nor gender. Yet, their actual form, circumstances and health benefits would vary considerably and may well be related to participants’ socio-cultural background. Large-scale surveys undertaken by the European Union would have shown that overall levels of physical activity have fallen over the last decades. Physical inactivity would be more common among small income groups and less educated social backgrounds.⁶³ It is crucial, I may highlight, to closely investigate and involve target groups in order to design sports activities.

Schlicht and Brand give emphasis to various socio-cultural studies, which would have shown that lifestyle preferences “learned” in the young age would largely persist within the middle age groups.⁶⁴ Therefore it seems of particular interest to address children and young adolescents, since “inactive children” would most often become physically inactive grown ups. The common assumption that children would move less nowadays, as a result of more time spent on sedentary activities such as sitting in front of the television or playing computer or console games seems plausible. Schlicht and Brand state it would be hard to underline with reliable data, since especially children would become active in various “informal” play activities, which would be hard to grasp by scientific surveys. What they highlight instead is that sports medicine would have detected changes in children’s physical capabilities. Studies for Germany would have shown children's motoric skills, physical strength, reaction and endurance in aerobic and anaerobic exercises decreasing within the period of 1975 and 2000.⁶⁵ Traditional sports we may note have evolved considerably since modernist architects imagined sports equipment, roof top running tracks and gyms for their picture of Man as a Boxer and Engineer. It is important to note that sports as well as more informal physical activities appeal to various social and age groups in different ways. To implement sports facilities to buildings and cities needs to consider this flexibility.

Conclusively, I would like to situate modern sports within our everyday life. Elias and Dunning would doubt that sports could actually be seen as *contrasting* the more serious, restrained work life. In their view, the emphasis on self-improvement and achievement in modern “highly differentiated“ societies would come along with social and personal mechanics of excitement control. They point out that to show openly any forms of excitement

⁶² Wolfgang Schlicht and Ralf Brand, *Körperliche Aktivität, Sport und Gesundheit - Eine interdisziplinäre Einführung* (Weinheim; München: Juventa, 2007), p. 42.

⁶³ Schlicht and Brand, *Körperliche Aktivität, Sport und Gesundheit*, p. 43.

⁶⁴ Schlicht and Brand, *Körperliche Aktivität, Sport und Gesundheit*, p. 43.

⁶⁵ Schlicht and Brand, *Körperliche Aktivität, Sport und Gesundheit*, p. 45.

- crying, screaming, jumping for joy - would be hardly seen as normal in modern societies. In pre-modern societies, religious and sacred events would have temporarily suspended this chain of interdependencies and micro rules. But the civilising process would have tempered compensatory functions of relief from personal and social restraints. In a secularised and rationalised world, rules of social interaction have an impact on every sphere of life including leisure time. In Elias and Dunning's view non-working life in a whole and sports in particular underlay the civilising process, therefore its compensatory function would diminish.⁶⁶ More than contrasting, modern sport in their view, complements work activities.

Elias and Dunning point out that the larger part of non-working time would be devoted to nevertheless serious and monotone tasks such as private work or family management. It would be spent to rest and to cater of "biological needs" including meals, hygiene, sexual life and sociability. According to Elias and Dunning, it would be merely a small part of spare time that can be associated to leisure and even a smaller part would be dedicated to physical exercise and sports. What Elias and Dunning frame as mimetic and play activities would also include going to the theatre or cinema, hunting, fishing, bridge, mountaineering, gambling, dancing or watching television.⁶⁷ The need for mimetic and play activities, as mentioned before, would hardly be explained sufficiently as escapism from the stress of everyday life. In contrast, they observe the search for an "intensified experience" for instance in the theatre of the 1970s. Certain plays would offer new grades, characters and combination of excitement, widely unknown from other spheres.⁶⁸ I like to note that Koolhaas uses the same formulation when he explains the success of Coney Island's amusement parks as an "intensification of urban pressure" that would have provided a choreographed experience of unknown density.⁶⁹ Whereas I have shown earlier how health resorts may be seen as laboratory for bringing together play and healthcare, I will pay more attention to the relationship between modernist architecture and modern sports in the following.

Health machines and communication gadgets

In her book *Privacy and Publicity*, Beatriz Colomina points to the "voyeuristic insights" to his buildings, that Le Corbusier would have been ready to give to the public. In the movie *Architecture d'aujourd'hui* of 1929, co-directed by Le Corbusier, the viewer would follow inhabitants throughout the villa Savoye and would at time gaze at them from the outside through one of the big openings (Figure 26).⁷⁰ Whereas we may note the blinds on Wolf's balcony in Stuttgart (Figure 23), Le Corbusier celebrated the views into people's buildings. At the same time, Le Corbusier was concerned with the opposite direction of sight, too. For him, in a society that lacks so much of authentic experiences, people would have to become active. As Neumeyer has pointed out, avant-gardists claimed to counter alienation with

⁶⁶ Norbert Elias and Eric Dunning, 'The Quest for Excitement in Leisure', in *Quest for Excitement - Sport and Leisure in the Civilising Process*, ed. by Norbert Elias and Eric Dunning (Dublin: University College Press, 1986), pp. 63-90, pp. 64-6.

⁶⁷ Elias and Dunning, 'The Quest for Excitement in Leisure', pp. 68-9.

⁶⁸ Elias and Dunning, "The Quest for Excitement in Leisure", pp. 79-90.

⁶⁹ Koolhaas, *Delirious New York*, p. 33.

⁷⁰ Colomina, *Privacy and Publicity*, p. 293.

modern sports and exercises. At the same time, Le Corbusier would suggest to experience nature in the form of carefully planned views out of his buildings. Ideally, people would not see the irritating complexity of sublime cities, he claimed, but a choreographed panorama of natural landscape. Gazing out of the window in Le Corbusier's view was to compensate for a stressful modern life as much as doing sports. As Colomina puts it, for Le Corbusier to watch included as well to perceive with the help of new media: taking photographs, filming or painting. The "intelligent and active man" would take record of the world.⁷¹ Windows, as Colomina concludes, meant for Le Corbusier foremost communication.

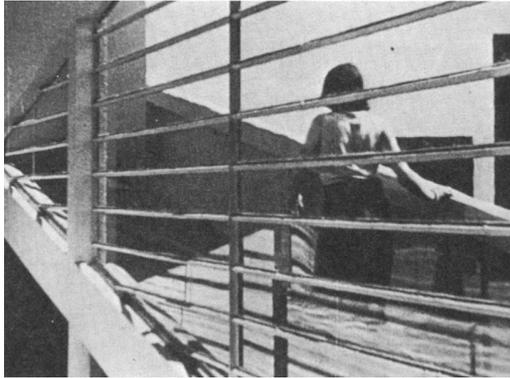


Figure 26 Le Corbusier (co director), *Architecture d'aujourd'hui*, 1929.

Colomina sees the large openings in Le Corbusier's buildings as means of communication. They would have provided an almost "voyeuristic" view onto inhabitants' lifestyle, fitness and shape.

Increased communication in the context of healthcare, however, raises several issues. Whereas the healthy New Dweller would probably more openly expose his performances, the "underachiever" – in this case patients or those subordinated to so-called risk groups - may be alarmed by the thought of communicating and publishing their body data. Transparent buildings awaiting people with sports equipment, but also displaying health-related behaviour anticipates some of patients' nightmares of today's information society. Yet privacy issues seemed to be hardly on Le Corbusier's agenda. His designs confronted dwellers with an immense publicity, stripping houses off walls and exposing occupants' lifestyles. Through modernist architecture, Kracauer's *Totalschau* seems to be applied to the sphere of domestic living and would particularly display people's health and wellbeing. At least, it seems fair to say it seems unlikely for people to become a couch potato, while living in a house designed by Le Corbusier.

Colomina points to another aspect in Le Corbusier's attitude towards privacy and publicity. His interiors would have been by no means in a merely defensive role. For Colomina, his buildings can be seen as mobile "cameras" framing the landscape, and in turn set their inhabitant's performance into right light.⁷² Thus she points to an interesting effect of sharing information in a media society. Being on display for an artist such as Le Corbusier would have meant to publish. In the same way, many people today share information on social

⁷¹ Le Corbusier cited in Colomina, *Privacy and Publicity*, pp. 312 ff.

⁷² Colomina, *Privacy and Publicity*, p. 312.

network websites and for instance post their daily weight status on facebook.⁷³ As Colomina states, Le Corbusier as an architect would have found a successful strategy to cope with an emerging mass media. Whereas colleagues such as Adolf Loos would have proudly claimed his interiors were not to be captured in pictures and indeed are hardly documented, Le Corbusier collected every detail of his private and artistic life. He would have left behind an extreme amount of sketches, plans, photographs, montages, movies and texts, which has ever since been displayed in numerous exhibitions, stored in archives, and controversially discussed. It may be precisely his strategy of accumulating and publishing that has provoked speculation and controversy and enforced his artistic career. As Colomina states, due to the huge amount of information and often contradicting facts, scholars as fans could hardly grasp the “real” Le Corbusier. For Colomina, Le Corbusier would have developed just the other possible way of dealing with a society of mass communication: Whereas Loos would have destroyed all traces, Le Corbusier would have accumulated too many data to pin him down. As Colomina concludes both would have hidden in a sort of media camouflage.⁷⁴ Le Corbusier’s take on authorship but at the same time “information-camouflage” anticipates the wish to remain in control of their data – particularly health related data - in today’s media society.

Peter Sloterdijk has observed how medical prosthesis may be understood in a broader sense than merely replacing human body parts. For him, philosophy of technology has taken on the role of prosthesis for the mind in modern societies. In his analyses of the early Weimar Republic, he sees the traditional humanist subject confronted with a “psycho-political motive“ of being disappointed, increasingly disillusioned, and the claims by all sorts of political agendas to be never fooled again.⁷⁵ The growing uneasiness with the shifting relationship between subject and object would have been largely influenced by the unprecedented experiences of the First World War. People would have faced war machinery, which saw the individual merely as human material. From then on, as Sloterdijk states, it would have been hard to ignore, that the Modern Man appears as a “recorded, recruited, uniformed and used, on demand“ subject.⁷⁶ The post-war period, in which climate the projects presented above have developed, was one of political revolutions, economical growth and decline, further mechanization and globalization. To put it in a nutshell, it produced an overly complex situation, in which the humanistic notion of Man as being in charge and control of his means was fiercely questioned. This shared experience of the humanist subject as being wounded, being ashamed by and feeling lost in a modern world, or as Le Corbusier puts it, being “insufficiently armed”, for Sloterdijk is the ground for various ideologies of technology as prosthesis to emerge.

The actual medical prostheses, for Sloterdijk were the very expression of the zeitgeist. Various advisory literatures for war veterans, which emerged during and since the First

⁷³ See «weight loss ticker» for facebook, for instance <http://apps.facebook.com/lilyslim/contactFB.php>. Users “post” their daily body weight to their friends in order to motivate themselves to become fit.

⁷⁴ Colomina, *Privacy and Publicity*, p. 15.

⁷⁵ Sloterdijk, *Kritik der zynischen Vernunft*, p. 741.

⁷⁶ Sloterdijk, *Kritik der zynischen Vernunft*, p. 777.

World War, for Sloterdijk, painted for the first time a picture of the *homo proteticus*. Being published in the context of technical and medical industries they would have set a “frivol-optimistic“ tone against any cultural pessimism mourning on the loss individuality, personality and bourgeois self-control. As Sloterdijk puts it, this technocrats’ appeal for the *homo proteticus* would have set a bold “Yes“ against anyone complaining about the “No“ to the individual subject. In such a technocratic view, it would not have been relevant whether individuals or “human-prosthesis-units“ worked as functional parts in the system.⁷⁷ Sloterdijk therefore sees the notion of technical prostheses critical, especially when they act in favour of a state functionalism rather than serving an individual. For Sloterdijk, the human body being fully characterised by work and war ethic, would have become prostheses in modern societies, long before doctors started to replace missing body parts with mechanical devices. In his view, the humanist subject would have been disintegrated within a “state functionalism“, partly since philosophy, the arts and design in this period would have failed to counter technocratic ideologies.⁷⁸ In my view, any call for a prosthetic architecture as measure to support health-related behaviour therefore has to engage precisely with these disciplines to get involved into a discussion on mobile and personally tailored technology.

Whereas modern town planners’ contribution to fight back bacterial and respiratory diseases has been widely acknowledged, their design legacy for today’s lifestyle diseases is being hardly discussed. That seems astonishing, since precisely their emphasis on life reform and mobile technologies, I will show, points to recent digital health assistants. I have contrasted how Le Corbusier’s artificial limb objects were to support users’ self-mastery, while Hannes Meyer’s biological apparatuses stressed scientific and fully automated environments. Organic architects such as Frank Lloyd Wright and Hugo Häring have criticised their colleagues for being technocratic. It is foremost their emphasis on a participatory, open-ended design processes developing “life fulfilling prostheses“, which I will pay more attention to in the following.

Personally Tailored Solutions

Building upon this critique, I will highlight how personally tailored architecture may contribute to today’s healthcare technologies. I will show how organic architects have claimed for customized, mobile and context-aware architecture and how post-war architects have further developed these claims by embracing modern communication technologies. In this section, I will pay particular attention to how Archigram’s gadgets and augmented reality installations. Especially their designs for a lifestyle game shows how Archigram aimed to support personal development, but wanted to stimulate behaviour change. BJ Fogg’s description of today’s persuasive technologies will provide me with a comprehensive overview on how mobile and context-aware technology attempts to influence user behaviour. In my view, many of these psychological concepts can be employed and considered in digital health games. However, I will highlight how many products hardly stimulate users to reflect on the wider social and environmental circumstances that want them make to change

⁷⁷ Sloterdijk, *Kritik der zynischen Vernunft*, p. 794.

⁷⁸ Sloterdijk, *Kritik der zynischen Vernunft*, p. 797.

behaviours. To briefly discuss studies on how people would have learned to foremost blame their personal behaviour and lifestyles for bad health outcomes will further underline my argument to counterbalance the current pressure on individuals with research on “obesogenic environments”. I will show that personally tailored technologies have various potentials to support learning and behaviour change, but will also have to help making people aware of environmental influences on their wellbeing.

Mobile, temporary, customized

It is important to note that organic architects did not oppose technology in general. For Häring, mechanisation would be key to “true“ socialism and building a better society. He opposed standardised designs and objects, which would impose a uniformed way of living. In contrast to geometric design, “organic“ architecture would apply standardisation to the method not to its results. In Häring’s view, the aim of mass production was to encourage life and variety not to reduce people’s routines and favours to a minimum. Häring illustrated how this reconfiguration of the mass products to a “performance fulfilling form“ was to work in the opening sentences to his essay *probleme des bauens* of 1924. He distinguishes three main functions of windows: 1. to give light, 2. to provide ventilation, and 3. to create a view out.⁷⁹ Windows would try to provide all these three functions at once, but, in Häring’s view, hardly fulfil any of them sufficiently. He therefore suggests dividing these functions and achieving them separately in the best way for each. This was to provide top lighting, openings above the floor and below the ceilings to provide ventilation across the room and Pullman’s car windows, as they would create views uninterrupted by glazing bars.⁸⁰

Häring goes on criticising the unpleasant results of typification in modern building. Anticipating critique on the “Minimum Living standard Housing“ discussed by CIAM in 1929, Häring states that rather than defining the minimum amount of space people can live in, architects should ask how to achieve the most for occupants.⁸¹ Social housing should aim to optimize buildings performances in order to please people’s rising demands on dwellings. If there was any use of “thinking within types“, Häring claimed, it was to evolve parts to such perfection that any loss of subjective character of the whole was compensated by an increased quality of its features. These parts may be combined and used in the way a “tailored jacket” would make use of individual raw materials and products.⁸²

As Häring states in *versuch einer orientierung*, shapes must be the result of a design process, not its point of departure. Organ-like design, fulfilling users’ demands appropriately may therefore take on various, hybrid and rather unpredictable forms. They would not be confined to cubic or rectangular shapes, but would consider each material, technology and form suitable to the task. His point was to make clear that it was for people to decide how to make

⁷⁹ Hugo Häring, 'probleme des bauens', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 17-8, p. 17, (first published in: *Der Neubau*, Vol. 17, Sep 1924).

⁸⁰ Häring, 'probleme des bauens', p. 17.

⁸¹ De Bruyn, *Fisch und Frosch oder Die Selbstkritik der Moderne*, pp. 62-6.

⁸² Häring, 'probleme des bauens', p. 18.

use of technology. It was people's conviction to a new society – one that would oppose dogmas - helping to evolve “new technologies”. These would be already there: light constructions, and elastic and adaptable materials, which would help to evolve houses towards “organs of life”.⁸³ This notion of prosthetic architecture emphasises natural principles, and indeed organ-like materials. Whereas Le Corbusier spoke of “*artificial limb objects*” and Meyer stressed “biological apparatuses”, Häring saw buildings as a “second skin”.

The way Häring dealt with peoples' movement patterns in and around buildings may throw some additional light to the process of designing from inside out. For Joedicke, Häring's fascination with movement originates in his rework of a design entry for Leipzig main station of 1921, where he sought to organise the form according to “assumed” movement patterns of travellers, visitors and staff.⁸⁴ Joedicke tracks Häring's handling of people's movement in buildings down to his competition entry for the gallery of the *Berlin Sezession* in 1926. Starting point for the design seems not to be the actual exhibition space, but to organise visitors' movements. Its light, elliptical staircase seems to soak in visitors from the streets and guides them to the different facilities to the main gallery on the upper floor.⁸⁵ It may be in this design that one can best identify Häring's attempts to “gently cover” people's movements by building a “second skin” to an assumed behaviour pattern. I will deal with spatial design strategies to “gentle guidance” in later chapters. For now, I would like to state that it may be precisely that Häring's emphasis on both design processes as much as a focus on developing a tailored, customized form for personal requirements, that appeals to me in health context. Users would articulate briefs having committed to one aspect of focus, while a suitable form is being developed. Therefore it is from Häring's search for the typical solution, the tailored jacket, from which digital services may learn a good deal of transparency.

Organic designers may unfold an unexpected perspective for today's *urban* health issues. Frank Lloyd Wright for instance emphasised extremely low dense populated and decentralised living. At the same time, he celebrated mobile technologies to reconnect people, anticipating today's hybrid urbanism, which develops its “media publicity” almost independent from spatial proximity and access.⁸⁶ Whereas today's research on obesogenic environments seeks to increase levels of physical activity with rather traditional planning and design tools such determining certain street and usage patterns or encouraging walking by the design on safe and cheerful pathways, organic designers, I will show point to a further possibility to integrate mobile technology into a spatial infrastructure. Their notion of spatial interaction seems even to point to today's locative media technologies.

⁸³ Hugo Häring, 'versuch einer orientierung', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by versuch einer orientierung, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 32-5, pp. 32-4, (first published in *Die Form*, n. 7, 15 July 1932).

⁸⁴ Jürgen Joedicke, 'Zum Werk Hugo Härings', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 153-59, pp. 152-3.

⁸⁵ Joedicke, 'Zum Werk Hugo Härings', p. 154.

⁸⁶ Sieverts, *Zwischenstadt*, pp. 32 ff.

Modernist architecture has been widely criticised for denying any relation to site and its surrounding landscape. Ernst Bloch compared contemporary buildings to ships, ready to depart and disappear at any moment.⁸⁷ As I have shown above, for Le Corbusier, natural landscape was basically mere visual background. The views provided from his “ships”, or as Colomina puts it, his photo camera-turned-houses were carefully framed and choreographed. In contrast, as I have shown in the ADBG School, Meyer’s biological apparatuses were based on social and psychological diagrams rather than its surrounding landscape. In their attempts to design for universal needs, temporary training centres like the ADGB school could potentially stand anywhere.

Frank Lloyd Wright’s attitude towards sites and landscape is more ambivalent. The rectangular grid of Broadacre City with its road network, connecting equal and squared lots, was pushed straight through the American countryside. It pierced through hills and largely ignored rivers and lakes. Most tellingly in Broadacre City, Wright seems to be of the opinion that architects and urban planners would have to deal with an increasingly man made, cultivated landscape, anyway. Infrastructures therefore became for him most important. Wright emphasised a transport system consisting of automobile routes and a network of helicopter traffic. The smallest of his wide, safe and green streets would embody at least 4 lanes. The large motor highways were to be designed in such a sophisticated way that they would become architecture themselves.⁸⁸ Various designs for infrastructural facilities underline Wright’s fascination for a mobile life. He imagined his Unisonions to be continuously on the move. A “roadside market“ would bring together food suppliers and customers next to service stations. Both are embedded in thorough fully planned “highway intersections“, enabling an optimal flow of traffic. Next to air rotor fields, from which self-contained helicopters would take off, safe and noiseless, radio-controlled transport planes may circulate “to almost anywhere else“ (Figure 27).⁸⁹

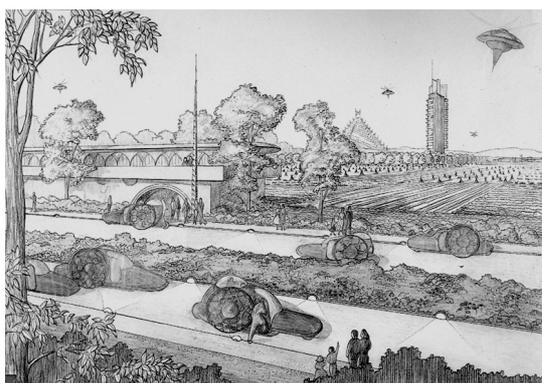


Figure 27 Frank Lloyd Wright, Broadacre City, 1958.

Mobility in Wright’s Broadacre City would include a variety of motorized transport such as helicopters, airplanes and cars, which Wright designed by him self. Though Wright depicted pedestrians in this “typical street view”, researchers in today’s obesogenic environments may question the walkability of his design.

⁸⁷ Ernst Bloch, *Das Prinzip Hoffnung* (Frankfurt am Main: Suhrkamp, 1959), p. 858.

⁸⁸ Wright, *The Living City*, p. 127.

⁸⁹ Wright, *The Living City*, p. 127.

Mostly Wright was concerned with the private car, which he considered as more than a necessary instrument for modern people out & about. Vehicles would annihilate distances since information, lodging and entertainment would have become available everywhere. To him, the automobile was the modern sanctuary.⁹⁰ Therefore, it would have to stop being a “stupid, awkward compromise“ would have to become a “really mobile machine” – one that was in his view “humanized“. Next to these mobiles he foresaw a network of “charming places“ in the form of motels and service stations, everywhere at hand and personalized mobile cars oscillating between them.⁹¹ In my view, Wright’s vision of the mobile life anticipates today’s interplay between mobile devices and overall Internet access. In Wright’s *Broadacre City*, the city and its parts - living and communal units - would become decentralised. But he also anticipates mobile gadgets and infrastructure, which would help to overcome large distances.

Häring, however was much less concerned with the mobile life than Wright. He occasionally ridiculed the modern credo of nomadic life, such as Hilberseimer’s word of moving with not more than a suitcase. In contrast, he states man needs a house or flat to express its individuality. He valued developing relationships and, as Wright, suggested that this may be best achieved due to a refuge in the midst of a corresponding environment.⁹² It is in this context, that he is described as advocating a sort of genius loci. As Jones observes what Häring calls “geschehnissraum“ (“event space”) has nothing to do with any traditional “localism“, nor regional or national chauvinism.⁹³ Häring clarifies that to emphasise location was not to support local folk tradition. The latter’s uniforms would represent more than often restrictions and suppressions. As all uniforms they were forms imposed from the outside toward the inside. Also environmentalist would not have to fear an organ-like building to not fit into the natural landscape. Häring claims that the landscape and artefacts within organic architecture would be built upon the same principles, which would tell buildings to respect topography and “to behave gently”.⁹⁴ As Jones accounts, Häring only once took part in an international design contest, that for the renewal of the urban centre of Zagreb. In contrast to many of his colleagues, he did not aim to find universal needs that may be applicable in a globalized world. For him, it was crucial to know the site and cultural context he would be designing for.⁹⁵ Organic localism was to balance which materials and technologies are suitable and sustainable for a specific site. It was to prevent natural damage to the landscape and it was to react to all sorts of natural and artificial landscapes.

With Wright’s moving places and Häring’s modern genius loci, we have two important takes on locations in relation to pervasive and mobile technology. At first sight, Wright’s true cars,

⁹⁰ Wright, *The Living City*, p. 140.

⁹¹ Wright, *The Living City*, p. 141.

⁹² Hugo Häring, 'neues bauen', in Hugo Häring: Schriften, Entwürfe, Bauten, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 60-3, p. 61, (first published in Schriftenreihe des Bundes Deutscher Architekten, Vol. 3, 1947).

⁹³ Jones, *Hugo Häring*, p. 187.

⁹⁴ Häring, 'neues bauen', p. 62.

⁹⁵ Jones, *Hugo Häring*, p. 110.

which are celebrating automated transport, seem to be hardly suitable for any attempt to stimulate physical exercise in peoples' everyday life. It is more his notion on entertainment while being out and about that bears several potentials. Even if it is a small place provided by these mobile units, Wright highlighted the necessity to make it a place in which users like to spend time. Moreover, as Wright would have emphasised, the implementation of entertainment and education technologies within to these moving places seems to be crucial. He even spoke about the influence on advertisement and advised designers to get involved in order to lift up travellers and not annoy them with junk advert. He seems to anticipate moving environments for specific and even serious purposes such as promoting moderate physical exercises next to transport. Only in response to their spatial context, Häring assumed, buildings could achieve the best performances for their users. In this view, today's locative media aiming to promote more daily activity may detect spatial information for their requirements. Häring's genius loci today might consist of Geo Positioning Systems (GPS), telling mobile devices where their users are. Moreover, accelerometers are able to detect amount and kind of even the smallest movements of users. Yet, Häring might have pointed out that sensors within buildings may not only detect and respond to parameter of the environment, but as well to physiological and medical data of users. It is this whole range of human-machine interaction that seems to be anticipated by organ-like architecture.

Archigram's mobile gadgets and lifestyle games

The British architects group Archigram - named after the series of magazines published between 1961 and 1970 - stems from a generation of post war avant-garde designers, Sadler described as attempting a slow, progressive transformation of the society from within.⁹⁶ They give particular emphasis to gadgets, consumerism, fashion, pop culture, and hedonism and what they call lifestyle games. Archigram claim to dissolve architecture into a kit-of-parts, responding to user's needs and desires by being of a temporary and prosthetic character. Eventually, they advance their organic heritage to a vision of one technological and cultural layer designed to migrating into the human body. In The Living City exhibition, Archigram invited to play a "socio-psycho game" teaching visitors how to fit in to the urban lifestyle of the swinging 1960s. Accordingly, their Survival Kit suggested a collection of popular products promising the re-invention of both - cultural life in dense urban living areas and that of the hedonist architect. With their Dreams Come True project, Archigram use their pervasive and immersive architecture to organise an alternative lifestyle and provide them to customers willing to pursue changes in their everyday life. I will show how this early Alternate Reality Game project in particular may indicate the moment when most liberal and open-end planners are attempting life reform and suggest lifestyle choices.

Archigram's early projects such as Plug-in City share a lot of interest with their generation of open-end planners. As Simon Sadler notes, in the 1960s, metabolism would have faced increasing critiques for determining users' activities by the very nature of suggesting a

⁹⁶ Simon Sadler, 'Open Ends: The social visions of 1960s non-planning', in *Non-Plan: Essays on freedom participation and change in modern architecture and urbanism*, ed. by Jonathan Hughes and Simon Sadler (Oxford: Architectural Press, 2000), pp. 138-55.

material framework. In his view, Archigram set out to make architecture – from houses to mega structures - independent from spatial boundaries and free from static support in particular. As Sadler observes, the concept of kit-of-parts would have allowed Archigram to develop architecture further away from fixed forms and towards temporary and provisional organisation of components.⁹⁷ Warren Chalk's *Bathamatic* from 1970 gives us an example for Archigram's interest in mobile gadgets within the context of body hygiene. The fully autonomous capsule provides an "exotic up down all around" experience, complete with "spray'n scent steam", "wash'n float- in" and "dry powdered stimulation."⁹⁸ It appears with ant-like steam pipes, screens, an in-built sound system and control interface, from which users may choose a selection of 16 entertaining beauty programs. Steiner suggests Archigram may be seen in the tradition of Fuller's claim that "truly" modern innovators would experiment with the lessening of dependence on extant infrastructure.⁹⁹ In contrast to the late 19th century "Steam Bath Apparatuses" illustrating Giedion's case of a fully automatized bathroom yet serviced by water provision, Archigram's *Bathamatic* attempts to make its service mobile. More designs for the modern nomad aimed to support users within any other aspect of their daily lives. The *Cushicle* for example was to enable "explorers" a high standard of comfort with a minimum of effort. Its combination of chassis and suit was expandable to a tent, enabled to carry around "a whole environment" of food, water supply, radio, mini television and electric heating. It was mobile and still fully "serviced".¹⁰⁰

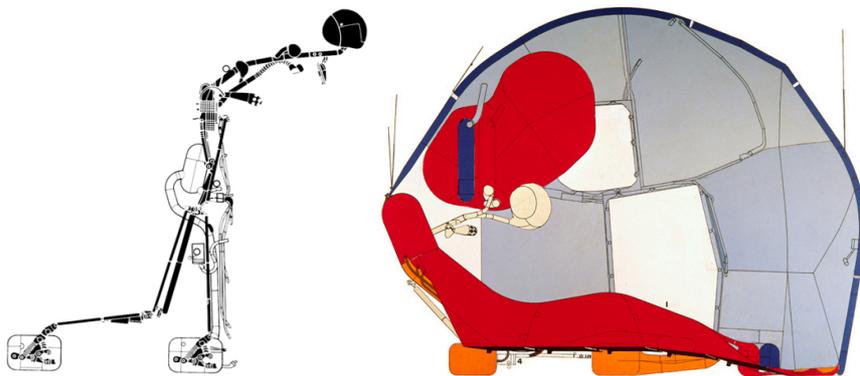


Figure 28 Mike Webb, Cushicle, 1966.

The Cushicle is to provide urban explorers with a fully serviced minimal and mobile living unit. In stage one, on the left, the chassis is unopened, being carried around by its users, while in picture two, it has opened up and inflated to provide space for one.

Servicing seems crucial to Archigram's late interest. In Archigram No. 9, the last published issue, Cook claimed to have been "following our dreams yet further and seeing now a gentler, softer and more tantalising environment."¹⁰¹ After the kit-of-parts rhetoric has made clear that

⁹⁷ Simon Sadler, *Archigram: Architecture without architecture* (Cambridge, MA: MIT Press, 2005), p. 98.

⁹⁸ Warren Chalk, 'Bathamatic', 1970 in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), p. 125.

⁹⁹ Hadas A. Steiner, *Beyond Archigram - The Structure of Circulation* (New York: Routledge, 2009), p. 133.

¹⁰⁰ Michael Webb, 'The Cushicle', 1966-7, in *Archigram*, ed. by Peter Cook (New York: Princeton Architectural Press, 1999), pp. 64-5.

¹⁰¹ Peter Cook, 'Editorial', *Archigram*, 9 (1970), n.p.

architecture would become temporary and mobile, architecture now was to be dissolved until it eventually would disappear into a whole system of servicing. Cook states: “The Futurist gear of Plug-in-City was necessary at the time, in order to make the statement that ‘Architecture does not need to be permanent’. Later this can be simplified to ‘Architecture does not need to be.’”¹⁰² If servicing was not to be fully dematerialized, David Greene’s project *Rokplug & Logplug* of 1968 seems to suggest, it would be at least to be concealed within the landscape.¹⁰³ Hiding away water service pipes and plugs for caravans in Greene’s view was to provide maximum flexibility and to prevail an undisturbed experience of being in nature. With *LogPlug & RokPlug*, Archigram seem to anticipate the concept of pervasive computing technologies migrating into familiar objects that Weiser would foresee for the development miniaturized processors in 1991:

“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”¹⁰⁴

The plans of *Rokplug & Logplug* depict an invisible servicing network, detectable only by using mobile *Logfind* devices. Reminding of today’s “hotspots” for wireless Internet access, it may give us an idea of how architects begin to deal with space and location in a world of ubiquitous service infrastructures. Sadler points out elsewhere that for “non-plan architects” such as Archigram or Cedric Price envisioning an environment of seamless servicing and infrastructures, activities would become increasingly independent from users’ actual position. As a result, he likes to observe locations for them becoming less important.¹⁰⁵ In Archigram No. 7, Price claims: “It is interaction, not place, that is the essence of city and city life.”¹⁰⁶ Ironically, as I will show later, researchers in today’s mobile and context-aware technologies claim for an increasing role of the physical shapes of spaces after an era in which mobility in their view would have been overemphasised.

Webb’s project *Suitaloon*¹⁰⁷ of 1968 may indicate how proximate Archigram’s interest in human-machine interaction brought the architectural “second skin” to the actual human body’s skin. For Sadler, the mechanics of Archigram’s prosthetic architecture becomes softer and more organic and seem to follow up the organic dream.¹⁰⁸ Cook states in 1970 that as the membrane of the *Suitaloon* gets pushed out by its occupant, “we get close to something like man-as-a-bat where the skin of the enclosure is dependent upon a system of vertebrae that respond very directly to the nervous system of the person within.”¹⁰⁹ Archigram saw

¹⁰² Peter Cook, 'Editorial', *Archigram*, 9 (1970), n.p.

¹⁰³ David Greene, 'Gardener's notebook', 1968, in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), p. 111.

¹⁰⁴ Mark Weiser, 'The Computer for the 21st Century', *Scientific American Ubicomp Paper*, 1991, pp. 94-110.

¹⁰⁵ Simon Sadler, 'Open Ends: The social visions of 1960s non-planning', p. 151.

¹⁰⁶ Cedric Price, 'Cedric Price', in Archigram, no. 7, (1966), n.p. as cited in Sadler, *Archigram*, p. 128.

¹⁰⁷ See Michael Webb, 'Suitaloon', 1968, in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), pp. 80-1.

¹⁰⁸ Sadler, *Archigram*, p. 114.

¹⁰⁹ Cited in Sadler, *Archigram*, p. 114.

themselves therefore close to their own attempt to design a servicing system that would totally respond to users' needs, movements, and physiological requirements. In this agenda, they dissolved architecture into a kit of parts, corresponding to a service infrastructure, which was to migrate into everyday and natural objects. Eventually, technology and design comes closer to the body and would eventually enter it. As Sadler puts it, the 1970s zeitgeist largely contemplated on the possibility that all human culture might be compressed in a single layer of a "proto post-modern servicing nexus". Within the cyborg – for him, the ultimate post-humanist concept of human-machine interaction - Archigram members do not oppose that design and servicing infrastructures may enter the body, too.¹¹⁰ As David Greene puts it in 1968 in Archigram No. 8:

“It’s all artificial anyway.... The pill and the plastic liver have ended the concern that we are all part of some wonderful inevitable natural process.”¹¹¹

I have shown earlier how Le Corbusier's "human-limb-objects" or Meyer's "biological apparatuses" were to support the Boxer and Engineer either in his attempt to self-mastery or to cultivate his spirit of socialist sportsmanship. I would therefore like to comment on Archigram's designs and anti-ideological attitude. As Reyner Banham puts it, Archigram would have been short on theory and long on draughtsmanship and craftsmanship. For him, Archigram would have designed foremost for pleasure and would have done so after all for not much more than a giggle.¹¹² However, the Cushicle and the Suitaloon projects seem to echo the modernists' postulate of Men as nomads being constantly on the move. Whereas Hilberseimer has seen mobility as an economical necessity to survive in a modern society and Meyer has considered it as a step towards a socialist revolution, for Archigram mobility would be simply a key to an "extension of personality". As they state for their "open-end" architecture, maximum flexibility and mobility would please any changing lifestyle preferences and desires.¹¹³ Even though Archigram claim to break with the avantgardist tradition of dogmatic determinism, their open-end architecture was not free of suggesting certain lifestyles over others. I will show in the following, how one may trace these modernist heritage particularly well in what Archigram developed as Lifestyle games.

In *The Living City* exhibition at the ICA in London in 1963, the Archigram group seems very much concerned with social impact of their designs. They aimed to save urbanism and the urban lifestyle from an increasingly sterile functional planning practice. It is important to recall that they did not envision the one big plan: large-scale housing projects or urban development schemes. For Archigram, it was the temporary yet immersive structure of for instance exhibition spaces, which was to make its impact. For them, the Living City exhibition was

¹¹⁰ Sadler, *Archigram*, p. 138.

¹¹¹ Cited in Sadler, *Archigram*, p. 138.

¹¹² Reyner Banham, 'A comment from Peter Reyner Banham', in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), p. 5.

¹¹³ Warren Chalk and others, 'Open Ends', in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), p. 74.

“designed to condition the spectator by cutting him off from everyday situation, where things are seen in predictable and accepted relationships. This city stimulator is a ‘conditioning chamber’, like the corner of some giant brain or analogic computer, and has compartments we have called ‘Gloops’.”¹¹⁴

The first of such themed sections was titled “Man Gloop” and may indicate Archigram’s concern in humans and their relationship to the social and built environment. It depicts various popular science fiction figures such as *Superman*, *Robbie the Robot*, *Adam Strange* and *Alanna of the planet Rann*. Visitors are invited to play a “a socio-psycho game” to “learn about your self and how you fit in the pattern that is ‘Living City.’”¹¹⁵ Players choose one of the science fiction figures; throw a dice and progress through a trace reading keywords of the exhibition such as “Situation”, “Reaction”, “Behaviour”, and eventually “Go Bonkers”.¹¹⁶ For Sadler, the “socio-psycho game” represents Archigram’s view of the “Living Citizen” as a “natural existentialist”. Players as well as city dwellers would progress through the city move by move and would adjust her or his inner powers to the game of life. He likes to observe a Nietzschean feel to the vision of life as a game in which we choose different alter egos competing with each other.¹¹⁷ Unfortunately, Fether does not further specify how the different characters interact with each other or within different stages of the game play. However, the board game may illustrate a brief and rather light-hearted excursion of Archigram into game design. It has set games on the agenda of Archigram’s design tools to stimulate or as they put it condition their visitors’ behaviour.

Especially these early projects recall the 1920s avant-gardists’ agenda of social and life reform. I have pointed to the anti-urbanism of modern architects. Whereas Le Corbusier “human-limb objects” were functional interiors to optimize our everyday lives, for Archigram, architectural prostheses were mobile devices to support survival on people’s way out & about. They celebrated the spaceman as the ultimate in physical and mental development. Eventually, Archigram claim it would be urban life itself that becomes the source of survival. It would have become a big business that would buy “speed, horsepower and happiness.”¹¹⁸ According to Sadler, the Survival Gloop negotiates one’s physical defects and how they may be overcome through muscles, intelligence, physique, personality and access to services and goods. He sees in The Living City exhibition the promise of prosthetic extension.¹¹⁹ This prosthetic extension, I like to emphasise, consisted for Archigram of kit of parts, but also of advisory.

In the *Survival Gloop*, Chalk goes on presenting a *Survival Kit* that would list all the items necessary to experience the city. Whereas Le Corbusier’s prosthetic architecture suggested a

¹¹⁴ Warren Chalk and others, 'Extracts from the Living Arts magazine, no. 2, June 1963', in *Archigram*, ed. by Peter Cook, Revised edn (New York: Princeton Architectural Press, 1999), pp. 20-3, p. 20.

¹¹⁵ Warren Chalk and others, 'Living City: The exhibition-experience described and expanded by its designers', *Living Arts*, 2 (1963), pp. 65-114, p. 100.

¹¹⁶ See Ben Fether, Game from Man Gloop, “Living City”, 1963 as shown in Sadler, *Archigram*, p. 68.

¹¹⁷ Sadler, *Archigram*, pp. 66-8.

¹¹⁸ Warren Chalk and others, 'Extracts from the Living Arts magazine, no. 2, June 1963', p. 20.

¹¹⁹ Sadler, *Archigram*, p. 66.

boxing sack, a large bathroom and sunny balcony, Sadler points to this Survival Kit as bursting out of presumable ingredients for a young man indulging in the hedonistic lifestyle of London in the swinging 1960s. He identifies a bottle of whisky, a packet of cigarettes, some jazz records, a gun, a particular copy of the Playboy, a sports car, lipstick and drugs. Yet, as he points out, there were no harder drugs depicted than *Alka Seltzer*, presumably to help against too much indulgence in whisky. The gun merely would look like a replica and the sports car is a toy, too. Sadler suggests the Survival Kit would be rather depicting an imaginary inner city living than the real thing. A fetish like experience just as readers of Playboy magazine would live out promiscuity and hedonism vicariously.¹²⁰ In this notion, the Survival Kit looks not like “How to Guide”, but a simulation and satire of the hedonistic lifestyle Archigram suggests.

Sadler points out two aspects after which the collection of the Survival Kit seems to be chosen. One the one hand to illustrate The Living City’s agenda, which was to counter architectural taboos such as gender and desire with the display of lowbrow, everyday, illicit consumer goods. On the other hand, Sadler suggests, The Survival Kit was a self-portrait of the “connoisseur” Warren Chalk, who could not help but suggesting some “essential” jazz albums at the heyday of the Beatlemania in Britain.¹²¹ From Sadler’s comment, I may draw the conclusion that the Survival Kit followed a broader agenda of cultural critique, and at the same time finds a way to articulate Chalk’s personal suggestions. Steiner observes the only unifying structure of this collection in its mode of display. The photograph would imitate the magazine and advertisement style in fashion at the time.¹²² The actual items included in the Survival Kit seem highly interchangeable. This strategy behind the kit seems to be easily applicable to other claims, personal tastes or requirements. Learning from suggestive advertisement, which associates products to the positive image of activities and lifestyles, the Survival Kit seems capable to express reform attempts in highly persuasive ways. I may speculate that in an Urban Health Survival Kit, designers might carefully balance “serious” healthcare products with more “fun” hedonist and lifestyle features.

As I have shown above, in the 1970s, Archigram claim for most indeterminate systems responding to users’ physiology, movement, will or desire. At the same time and building up on the 1963 Living City exhibition, Archigram claim to re-stimulate and re-organise urban lifestyle. In his *Dreams Come True* project of 1970, Mike Webb imagines an organisation, “which offers wonderful new ways of living, not only the hardware (gadgetry, enclosures, vehicles, etc.) necessary, but also non-physical things like what work you do.”¹²³ Webb elaborates the possibilities of a temporary escape from ordinary life through automation and synthetic environments. His speculative corporate Dreams come True Inc. provides the mobile and pervasive architecture, which Archigram projects ever since, and uses it to simulate immersive lifestyle experiences. As Sadler points to in an audio-visual presentation

¹²⁰ Sadler, *Archigram*, p. 74.

¹²¹ Sadler, *Archigram*, pp. 74-7.

¹²² Steiner, *Beyond Archigram*, p. 103.

¹²³ Mike Webb, 'Dreams come true', 1970, in *Archigram*, (New York: Princeton Architectural Press, 1999), p. 129.

based on the Dreams come True project in 1970s, the case study Norman Jones, a repressed, middle-aged, suburbanite, married with children would thank the Dreams Come True Inc. for selling him a new lifestyle, which as a side effect would also release him from architecture's "crushing impact upon human beings."¹²⁴ For Sadler, architecture augmented by media and simulation technology would not only serve human desire, it would actively cultivate them through what he calls "lifestyle games."¹²⁵

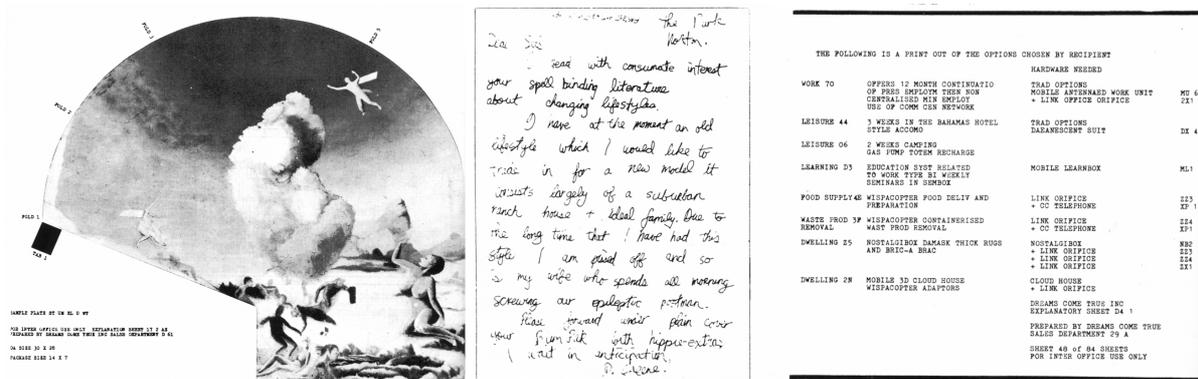


Figure 29 Mike Webb, Dreams Come True, 1970.

Speculative project in which Archigram takes on the role of an organisation providing alternate reality games. Next to hardware such as gadgets, enclosures and vehicles, Archigram would also organize new jobs, holidays, health and leisure activities for customers, who want to change their lifestyles.

I may speculate that the Dreams Come True project can easily emphasise serious features of such an alternative lifestyle such as health-conscious or eco-friendly activities. Archigram's lifestyle games touch three keywords that will become essential for today's serious games movement. Their socio-psycho game highlights gaming as a learning tool to teach visitors about an architectural context, while the Survival Kit suggests distinctive lifestyles by simulating and re combining certain daily items within a new collection. Eventually, the Dreams Come True project actively encourages and cultivates alternative lifestyles by providing immersive and mobile experiences. I have shown how Archigram in the Living City exhibition seems to follow up avant-gardists' reform agenda by exploring the possibilities of learning and behaviour change through games, simulation, and suggestion. Even though Webb is cautious not to mention any social reform plans at all, the Dreams Come True project in my view seems hardly escapist. It anticipates today's Alternate Reality Games, which as I will show in later in this text, want to impact the real world.

Beyond Persuasive Technology

Stanford University's experimental psychologist BJ Fogg provides me with a comprehensive overview into how today's computer technologies attempt to influence users' behaviours. As I will show in the following, mobile technologies are foremost interested in locations in order to determine users' activities, social interaction and context. They hardly seek to interact or make aware of certain material environments. I will follow critique on persuasive

¹²⁴ Cited in Sadler, 'Open Ends: The social visions of 1960s non-planning', p. 148.

¹²⁵ Sadler, 'Open Ends: The social visions of 1960s non-planning', p. 148.

technologies to hardly question the wider cultural and social circumstances that make people want to change their behaviours in the first place. Whereas I will show later that many of his concepts have informed recent design practise of mobile health games, I will highlight in this section that to make aware of environmental and social causes has been seen crucial to take pressure of people in risk.

In 2003, Fogg frames “persuasive technology” as all interactive products that are created for the main purpose of stimulating behaviour change. For him, persuasion must not be confused with coercion. While the latter might change behaviour, too, it would imply force. In contrast, Fogg likes to define persuasion as “the attempt to change attitudes or behaviour” on the basis of voluntary participation.¹²⁶ Computers would have several advantages over more traditional persuaders such as humans and other media. They would be more persistent, would offer a greater anonymity to users and manage to deal with bigger volumes of data. For Fogg, the most crucial advantage of computers is that they could go where humans cannot go or may not be welcome. Especially, when interactive computing systems would be embedded in everyday objects and environments, they could intervene at precisely the right time and place, which would give them great persuasive power.¹²⁷ Fogg seems very much in line with what I have described early as a Sanitarian fascination of infrastructural technology. As sanitary tubes and urban infrastructural technology penetrates the city landscape, Fogg highlight computer’s ability to migrate into more and more daily products and environments.

Fogg aims to advise designers how to make an impact through persuasive technology and wants to reveal potential ethical issues. Indeed, he vanes himself to be aware of the “potential and pitfalls” of persuasive technologies “perhaps more than anyone else.”¹²⁸ For him, it is important to focus on positive and ethical applications, which would increasingly go beyond advertisement. In the future, mobile and pervasively available persuasive technology would be helping to promote health, safety and eco-friendly behaviour.¹²⁹ In his foreword, psychologist Zimbardo, supervisor Fogg’s PhD, states that the research and design of persuasive technologies may be the only “reasonable behaviour modification program” against the growing obesity and diabetes epidemic in the US. For him, the potential is to reach millions of people every day with persistent messages about dieting, weight recording and being part of a social support group. It would provide anonymous participation, could give rewards and incentives as well as convenience and economy to users.¹³⁰ With these perspectives for stimulating behaviour change in mind, I will to pay further attention to Fogg’s tools and will relate his concepts to functionalist life reformers visions of health-orientated architecture and urban design.

¹²⁶ BJ Fogg, *Persuasive Technology - Using Computers to Change what we think and Do* (San Francisco: Morgan Kauffmann Publishers, 2003), p. 15.

¹²⁷ Fogg, *Persuasive Technology*, pp. 7-10.

¹²⁸ Fogg, *Persuasive Technology*, p. 6.

¹²⁹ Fogg, *Persuasive Technology*, p. 11.

¹³⁰ Philip G. Zimbardo, 'Foreword: Captivated by Captology', in *Persuasive Technology - Using Computers to Change what we Think and Do* (San Francisco: Morgan Kauffmann Publishers, 2003), pp. ix-xiii, p. xii.

Fogg describes a functional triad in which computers may take on persuasive roles: Firstly, he presents tools assisting users in their everyday routines, secondly, symbolic and sensory media providing simulations and thirdly, computers as social actors.¹³¹ First, I like to consider Fogg's persuasive *tools*, which for him are being designed to change attitudes and behaviour by making desired outcomes easier to achieve. Fogg lists "Simplifying" and "Tunnelling" as two of such principles. He refers for instance to online retail strategies, which try persuading users to buy products by making it a particular simple task to do. Amazon's patented *One-Click-Button* would be a prominent example. With one mouse click, as Fogg accounts, items would be billed to users' credit cards, are being packed up and shipped off.¹³² I may recall Le Corbusier's notion of functionalist interiors and buildings, which he has seen as tools to simplify and optimize daily routines. Whereas Le Corbusier designed functional interiors so that the modern Boxer and Engineer can spend more of his spare time to indulge in sports, recreation or arts, I like to note that Fogg seems to champion reduction strategies for digital services, in order to make people actually use them.

Fogg's examples so far mainly refer to domestic activities such as online shopping. Yet, his principle of "Tailoring" information to specific user "types"- again a topic Le Corbusier was heavily involved with – seems to broaden up persuasive tools for users being out & about in the city. As Fogg observes in 2003, the future of persuasive technology might hold an important step to take place from customizing data for individuals to tailoring information for context. Such tools would not only have to detect users' location and movement, but also would have to determine if users are alone or with others, what tasks or state of mind they are at the moment the information is provided. Fogg's fourth principle, "Suggestion", relies heavily on determining users' social and urban context. For Fogg computers unfold great persuasive power, especially if they offer their messages at the opportune moment.¹³³ Though mobile devices may use a variety of interactive technology to find this opportune moment, Fogg points to some limits of suggestion technologies, which merely track users' location and movement. While using GPS may provide the system with the right "geography" he states, the technology would not be able to identify other aspects of an opportune moment such as user's state of mind, financial situation, or meals and preferences.¹³⁴

Later in the book, Fogg states that future technology may be able to determine the opportune moment mainly through determining five factors:¹³⁵

- Physical location,
- Typical routine,
- Time of day,
- Goals of the day &
- Current task.

¹³¹ Fogg, *Persuasive Technology*, p. 25.

¹³² Fogg, *Persuasive Technology*, pp. 32-6.

¹³³ Fogg, *Persuasive Technology*, pp. 40-1.

¹³⁴ Fogg, *Persuasive Technology*, p. 43.

¹³⁵ Fogg, *Persuasive Technology*, p. 188.

With GPS built in to most mobile phones nowadays, determining users' physical location seems to have gone a long way. As Fogg points out himself, location is merely one aspect of the context and situation users may find themselves in. Gay has pointed to the important role users can play in interpreting contexts. Rather than assigning that task merely to mobile devices, she claims to forge a partnership between "context-detecting device and context-detecting user" in order to develop more useful and powerful context aware applications.¹³⁶ Fogg seems less concerned with how to involve users' input and rushes to further specify how mobile devices can persuade particularly well.

As Fogg notes, mobile phones can play the convenience factor by being persistently present. Even the busiest of people would have moments of downtime and some people would feel "trapped in silence" for instance while waiting for the bus or at the airport.¹³⁷ Mobile Persuasive Technology could fill this gap and provide users with serious content to train or entertain themselves. He goes on highlighting the principle of "mobile loyalty", stating that people would engage in an emotional relationship with their mobile devices and as a result messages retrieved would be particularly persuasive.¹³⁸ As shown above, various Modernist architects such as Wright or Le Corbusier have celebrated a mobile lifestyle. Wright for instance was enthusiastic about cars and hoped to provide serious entertainment for people being constantly on the move and Archigram has followed that up by designing suit-like mobile units for urban explorers. Likewise, Fogg seems to free a constantly busy and productive businessman from their moments of downtime on their way through the city. Fogg's next principle gives me a further hint towards how persuasive technology can be seen as prosthetic architecture.

According to Fogg, "Self-Monitoring Technology" tools detect any progress in achieving goals in real time and therefore would be able to motivate users on the way. Fogg highlights computing tools, which could gain medical data such as heart rate and physiological values such as exertion and energy consumption.¹³⁹ McGonigal, for instance, describes the running system *Nike plus* as a "game-like" platform, which motivates joggers to improve their performances by detecting their daily, weekly or monthly progress. The system largely employs pervasive technology: Its motion sensor is not more than 20 Dollars and is small enough to fit into the sole of any running shoe. It communicates with the iPod and feeds the website with all sorts of data that allows users to "self monitor". For her, the system puts running then in a wider social context – that of the online community in which users can share their experiences, collaborate and compete with each other.¹⁴⁰ Yet, as she notes, Nike plus motivates through positive reinforcement. That is to let users re-experience positive feelings in users, which have been experienced in earlier activities in the first place. As she

¹³⁶ Geri Gay, *Context-Aware Mobile Computing - Affordances of Space, Social Awareness, and Social Influence* (San Rafael, CA: Morgan & Claypool, 2009), p. 1.

¹³⁷ Fogg, *Persuasive Technology*, p. 189.

¹³⁸ Fogg, *Persuasive Technology*, p. 192.

¹³⁹ Fogg, *Persuasive Technology*, p. 44

¹⁴⁰ Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World*, (London: Jonathan Cape, 2011), pp. 158 ff.

notes, Nike plus would be foremost used by people, who are already interested in physical exercise and use this to improve and compete with others. Nike plus for her, is an example of “levelling up in life”, to use game-like systems to motivate one self to “get better” in whatever “we want to improve” in real life. As she notes, that might be as well blood pressure or blood sugar levels.¹⁴¹

While McGonigal emphasizes self-determined improvement, Fogg goes on with what he calls “Surveillance Technologies”. These would extensively monitor users’ location and combine this data with certain activities on a smaller scale, detectable through sensors or cameras. Surveillance technologies would use the mechanics of social facilitation – the phenomena that we perform better or more “appropriately” when we feel observed – to persuade people for certain behaviour. He rushes to make clear that in order to be a persuasive tool, surveillance needs to be done overtly. Otherwise, he states, it could hardly lead to sustainable behaviour change.¹⁴² Fogg points to the conflict that arises between mere compliance to appropriate behaviour and internalization. People under surveillance, it has been shown would often adjust their behaviour as long as they feel observed, but would not continue when not being observed unless they begin to have their own reasons for doing so.¹⁴³ Rötzer discusses some wider implications of what has been called “ubiquitous cities” integrating computing technologies, positioning systems and RFID chips to buildings and urban planning. Surveillance would be often been down played as a minor side effect in the wake of increasing citizens’ security and health. For him “transparent” cities tracking, mapping and viewing any move of their citizens may foster a cultural climate in which unusual, presumably inappropriate behaviour gets detected and simply any stranger would become suspicious.¹⁴⁴ Whereas Fogg focuses on the positive applications of surveillance to stimulate behaviour change and in particular health-related behaviour change, it seems important to note that social and cultural implications of surveillance seem more than mere collateral damages.

A further way in which computers can become persuasive tools in Fogg’s view is through empowering simulations. Interestingly, he refers to research on Lieberman’s asthma game “Bronkie”, with which I will deal in more detail below. Lieberman’s studies would have shown that practicing behaviours in a simulated environment would increase players’ self-efficacy. In turn, such self-esteem would increase the likelihood of transferring them to everyday behaviour.¹⁴⁵ For Fogg, to increase this likelihood seems to be his foremost goal. As he notes, the most persuasive simulated objects would be those, which find their way into an every day context. It is in this section, that Fogg highlights computing technologies pervading into everyday environments. Object simulations would become particularly persuasive since they would fit into people’s everyday life. To provide a most seamless

¹⁴¹ McGonigal, *Reality is Broken*, p. 163.

¹⁴² Fogg, *Persuasive Technology*, p. 47.

¹⁴³ Fogg, *Persuasive Technology*, p. 49.

¹⁴⁴ Florian Rötzer, *Vom Wildwerden der Städte* (Basel: Birkhäuser, 2006), BAUWELT FUNDAMENTE 135, pp. 103-5.

¹⁴⁵ Fogg, *Persuasive Technology*, p. 73.

experience would be crucial to make the outcome of simulations, the successful transfer of newly learned behaviour, less dependent on people's imagination and suspension of disbelief.¹⁴⁶ In this view, the likelihood of transferring newly learned behaviour could be engineered by aiming at an experience as seamless as possible. Fogg's simulated environments are supposed to be especially persuasive when they vanish boundaries between learning environment and real world application. I have discussed Pasteur's mobile laboratory before, which, as Bruno Latour pointed out, was an essential part of the bacteriologists' "theatre of proof".¹⁴⁷ For Latour, the latter was particularly persuasive, since Pasteurians traversed between experiments in the laboratory and effective public shows of its outcomes in a real world-testing environment. As Latour notes, the latter had been prepared previously, so that it would reproduce the results gained in the laboratory, but looked convincingly real to lay viewers.

Fogg states since mobile devices would constantly exchange data with other devices and the Internet, mobile technology can be more persuasive providing current, contingent and coordinated information. To provide current information means to connect users to a virtual service or network - for instance an eBay auction. Actual locations seem to play a minor role, since people would use these services wherever they are.¹⁴⁸ Contingent information would refer to personal references such as taking public transport as well as environmental variables such as weather conditions. By adapting to these variables, the system would be able to tailor suggestions and be more persuasive.¹⁴⁹ It may not come as a surprise that Fogg's attention to context-awareness has inspired interest in urban planning, too. Lin and colleagues from Eindhoven University for instance work on a health advisory system called *Motivate*. It recommends health related activities such as going for a walk or cycle to work and considers users' location, environment, weather, agenda, and individual profiles. The research project's focus is to find which aspects of context-awareness have crucial impact on health-related decision-making.¹⁵⁰ More research in this direction promises to deliver a broad toolkit for designers dealing with locative media in a health context. It is important to note that physical shapes and design seem to play a minor role to persuasive technologies, even if they are being dealt with from an urban planning perspective.

In his introduction to *Mobile Persuasion*, Fogg highlights his fascination for mixed reality, but makes clear from which angle he is looking on the topic. Concerned with potentials and pitfalls of "Augmented Reality", he states that for him of foremost interest would be what (digital) content is added to our material world.¹⁵¹ Fogg points to several tools and convincingly conceptualises how computers can stimulate behaviour change. Focussing on

¹⁴⁶ Fogg, *Persuasive Technology*, p. 77.

¹⁴⁷ Bruno Latour, *The Pasteurization of France*, trans. by Alan Sheridan and John Law (Cambridge, MA: Harvard University Press, 1988), pp. 85 ff.

¹⁴⁸ Fogg, *Persuasive Technology*, p. 195.

¹⁴⁹ Fogg, *Persuasive Technology*, p. 196.

¹⁵⁰ Yuzhong Lin and others, 'Motivate: Towards Context-Aware Recommendation Mobile System for Healthy Living', in *Proceedings of the 5th International ICST Conference on Pervasive Computing Technologies for Healthcare* (Dublin: University College Dublin, 2011), pp. 1-4.

¹⁵¹ BJ Fogg, 'The Future of Persuasion is Mobile', in *Mobile Persuasion: 20 Perspectives on the Future of Behavior Change* (Palo Alto, CA: Stanford University, 2007), pp. 5-11, p. 10.

experimental psychology and technology, he hardly sets these tools in a wider political, social, cultural and indeed urban context. Though addressing words as context, seamless and ubiquitous experience, his enthusiasm for Augmented Reality seem to exclude material design almost completely from a repertoire of potential interventions. Fogg and the various works that seems inspired by his *Mobile Persuasion* seem not to be interested in a re-shape of the city, but merely to detect its qualities to channel or guide people's re-use of the city.

Fogg concludes with four mechanics of how connected products can foster social influence. Fogg starts off with social facilitation, which he defines as the observed phenomenon that people perform and exercise more, better and longer when they are aware of not being alone. Whereas classic social facilitation was leveraged in communal spaces in which people would gather to pursue a certain end - for instance a fitness club - Fogg imagines the possibility of "virtual fitness facility" and virtual representation of people through avatars and symbols.¹⁵² Fogg concludes with what is for him the most common technology of persuasion through modelling the behaviour of others. It is mainly in the last section of his book that Fogg comes back interrogating political and social implications, which would be a key component of his research. He rushes to make clear that he would not take on any political view here, neither does he seem to be concerned with a wider reform concept. His main goal would to make people more sensitive towards the wide range of ethical issues involved in computing technologies. Since one's view on persuasion would depend on whom you ask, he simply lists some critics and praises in the following. In the extreme, he points to voices stating that persuasion may lead to indoctrination, coercion and brainwashing. Concerned with health promotion, some scholars would have seen persuasion as potentially turning into "paternalism". Yet, on the other extreme, persuasion would have also been seen as a fundamentally good thing, the foundation of ethical leadership and essential to participatory democracy. Therefore, for Fogg persuasive technology would not be inherently bad, but it would depend on how it is used.¹⁵³

Bogost does not quite buy Fogg's interest in wider political and cultural implications of persuasive technology. Fogg would not explicitly correlate his research to serve any institutional ideologies, and yet he would hardly be concerned with altering user's fundamental conception and worldviews. For Bogost, persuasive technology would be primarily intended to craft new technological constraints to stimulate behaviour change in users. Bogost attests Fogg's tools may be valid ways to alter behaviour, but they would lack of stimulating any discourse on the behaviour itself or the logics that would recommend such actions or beliefs. Fogg's examples would stress a sense of user awareness that would simply assume that people would understand, accept and want the potential benefits of persuasion. Bogost likes to see a formal structure in Fogg's research that would only allow to serve existing material ends rather than to address the reasons for people to pursue those ends.¹⁵⁴ With other words, Fogg advocates the engineering of persuasive products of which benefits users have been already persuaded by society, policies, the market or all of the above. Bogost

¹⁵² Fogg, *Persuasive Technology*, pp. 197-8.

¹⁵³ Fogg, *Persuasive Technology*, p. 212.

¹⁵⁴ Bogost, *Persuasive Games*, pp. 60-1.

criticises in particular that Fogg neither includes nor stimulates a wider discourse on political context within his strategies for personal behaviour change. As I will discuss later in more detail, Bogost seeks to set off precisely here with what he calls persuasive games. In the following, I will conclude with underlining why it seems so important to make develop personally tailored technology that also helps to make aware of environmental influences for one's wellbeing.

In her *Health and Lifestyle* survey in the UK of 1990, Mildred Blaxter, has dealt with the question of how health is perceived in a broad range of population. She has asked for instance, which factors do people consider as most important for wellbeing. Two antipodes would be continuously emphasised to contribute to good health: On the one hand, Individual behaviour and attitudes and on the other hand, the less "voluntary" aspects of social circumstances. To be clear, for her study, social and spatial environments are only in so far of interest, as they induce a particular vulnerability to less healthy lifestyles.¹⁵⁵ As Blaxter notes, the issue of responsibilities for personal behaviours, which promote or dis-promote health would become of an increasing importance, in particular since it would have obvious implications for health policies. If ill health would be seen as self-inflicted, measures such as education, persuasion, and an emphasis on self-responsibility would be favoured answers. In contrast, if the responsibility would be located principally outside the individual's control, social policies and environmental design would appear paramount.¹⁵⁶ I have shown earlier how various communal healthcare measures - from the early sanitary movement, over an emerging healthcare education and entertainment industry has increasingly targeted individuals' lifestyle choices.

In the 1980s, Blaxter finds in her surveys that individual health-related behaviour such as bad nutrition, physical inactivity, bad smoking and drinking habits would be increasingly emphasised over social and spatial circumstances:

"It seemed that the public had learned well the lessons of health education, and answers about "healthy lifestyles" were the ones which came first to their minds, or ones which they saw as the 'correct' or expected replies."¹⁵⁷

Blaxter goes on stating that in particular those, who would be most prone to bad health and would be living in the poorest circumstances and environments, would be rarely attributing ill health to their situation. They also would have learned to blame their own behaviour.¹⁵⁸ From Engels' notion of the "sicknesses of society", we seem to have gone a long way to today's term of "lifestyle diseases". I have shown earlier how public health experts call to balance the over emphasis on individual's lifestyle choices with the analysis and designs of environmental tools to tackle chronic conditions such as obesity or type-2 diabetes. In the

¹⁵⁵ Mildred Blaxter, *Health and Lifestyles* (London: Routledge, 1990), p. 2.

¹⁵⁶ Blaxter, *Health and Lifestyles*, p. 8.

¹⁵⁷ Blaxter, *Health and Lifestyles*, p. 153.

¹⁵⁸ Blaxter, *Health and Lifestyles*, p. 162.

following, I will show how what has been called performative technology may help to make people aware of environmental causes for bad health outcomes.

Performative Technology

In this section I will highlight organic architects' contribution to participatory design processes in order to underline my claim for a personally tailored architecture that helps users to become aware of environmental influences and even discuss and articulate health-orientated design briefs. I will show how Friedman's "scientific architecture" was to set users in the centre of an information circuit that anticipates pervasive sensor strategies to track what he calls urban mechanics. Yet Friedman's concepts of customized and mobile architectures also sought to empower users to take lifestyle and design decisions on their own including those, as I will show, regarding health and wellbeing. I will conclude with what Christian Nold has framed as performative technology, for which he uses sensor devices and geo information tools. Nold seeks to enable users to interpret and discuss body data in relation to the environment retrospectively and in collaboration with others. It is precisely this mode of putting users in the centre of attention and stimulating their own interpretation that I see as crucial for health-orientated town planning.

Articulating design briefs and developing forms from inside out

In *baurat, nein - bauherr*, Häring made it clear that to build was a crucial part of any formation of a new society. Referring to Goethe's word "*Bauen ist Gesinnung*" ("to build is to make sense of things, to demonstrate one's conviction"), he claims for more participation in city building. Häring states that the miseries in town planning within the interwar years would be caused by a lack of foresight and broader visions and may therefore hardly be mastered by ever more technical and bureaucratic specialisation. In contrast to name yet another institutional *Baurat*, ("City Architect"), Häring claimed for more modern-minded *Bauherren*, for clients, who would commission buildings in a broader view. Clients should be able to brief architects with requests going beyond mere technical and economic concerns. As Jones points out in his translation, the German word *Herr* ("sir") in contrast to *Rat* ("officer", "advisor") in this context also suggests that the person was a gentleman. Claiming for more participation, Häring therefore seems to hope for the return of a universally educated figure of "gentleman client", who would be able to see the wider picture of building with its entire spiritual, technical and political implications.¹⁵⁹ In my view, Häring seems to contrast Meyer, who questioned the "psychological autonomy" of subjects in general and who wanted to hand over responsibilities to a science-led design process. Häring might have agreed with Le Corbusier on the idea that people involved in building should take on a holistic, rather humanistic perspective. But for Häring the person in charge was to be the client, ideally identical with the user. Rather than doctor-designers building "biological apparatuses"

¹⁵⁹ Häring, 'baurat, nein- bauherr', in Hugo Häring: *Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 18-20, (first published in *Das Tagebuch*, Vol. 27, 4 July 1925). See for translation, Jones, Hugo Häring, p. 99.

(Meyer) or genius artist-architects designing “machines for living” (Le Corbusier), Häring emphasised user involvement.

Jürgen Joedicke points to an important shift in Häring’s writings. Whereas his early works would have been foremost concerned with free forms as being opposed to all kinds of in his view restrictive geometrical forms, in his later plans he would have dealt with question of “the natural plan“ of things and how they may determine the shapes of new designs. Häring would seem to share this fascination for the essential form or the spirit of things with architects such as Frank Lloyd Wright, Alvar Aalto or Hans Scharoun. As Joedicke puts it, the key challenge within such an approach would be how to reveal this inherent, hidden character of things. Therefore, most critical point and possibly the most important contribution of organic architects to any generation would be their ideas of a design process.¹⁶⁰ I will pay more attention in Häring’s concept of user involvement in the following, particularly in relation to attempts to stimulate behaviour change. At the first sight, though, designing from inside out emphasises the exact opposite of life reform. Whereas Meyer claimed to give to shape social reform through his buildings, Häring would counter to give expression to one’s convictions and behaviours, which would be already established in us. Häring’s participatory process may be seen as hardly compatible to today’s health environments, in which certain patterns of behaviour are being identified as widely spread, but also unhealthy. Häring’s credo “to develop forms for peoples’ life“ and from peoples’ convictions and behaviours would assume that people know what is healthy for them.

Dealing with question how to reveal this natural plan, Häring sees two different characters at work, the architect on the one hand and the engineer on the other hand:

“The work of the engineer is geared merely to the performance of material work within economic limits, and if sometimes found to contain other expressive values as well, that is only a side-effect, a subsidiary issue. The architect, on the other hand, creates a Gestalt, a form of spiritual vitality and life fulfilment, an object that belongs to and serves an idea, that serves a higher culture.”¹⁶¹

First, I may conclude from this quotation that Häring would have well included moral or political pre-setting to his designs. In *baurat, nein - bauherr*, he has made clear that it was clients and occupants to brief architects on social, political and cultural objections. Here, he emphasises architects working on expressive forms, which would provoke higher cultural effects. It is important to note that within Häring’s view, people’s wellbeing would result from equilibrium between cultural and environmental aspects. It is therefore significant, when he excludes engineers from working on these higher aims of buildings, to which he counts wellbeing:

¹⁶⁰ Jürgen Joedicke, 'Vorwort zur zweiten Auflage', in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), p. 5.

¹⁶¹ Häring, 'versuch einer orientierung', p. 34, translation taken from Jones, *Hugo Häring*, p. 82.

“This work begins, where the engineer, the technologist, leaves off; it begins when the work is given life. Life is not given to the work by fashioning the object, the building, according to a viewpoint alien to it, but by awakening, fostering, and cultivating the essential form enclosed within it.”¹⁶²

Contrasting designs being merely informed by medical and technical research, Häring’s new building is presented here as a life long and presumably life-fulfilling process. In *geometrie und organik*, Häring stresses again his emphasis on a design process:

“Organ-like building does not aim to simulate or imitate products of nature. The point to be taken from organic architecture is to determine the shape of things not anymore from the outside, but to search them in things’ inherent character.”¹⁶³

Joedicke points out that open design processes initially would have to be based on subjective decisions. Since buildings and entire cities would be such complex structures, they consist of numerous challenges and requirements, which often would be opposed to each other. Within any design process, it would take a conviction on what specific issue to focus.¹⁶⁴ Häring’s claim to fulfil the functions of a window separately in *probleme des bauens* already pointed to an inherent dilemma in this design approach. His later design for the single-story back-to-back dwellings may illustrate that all other aspects were to be subordinated to the claim to provide lighting, air ventilation and views in the best way. Its result may point to the potential danger of any design process: Its outcomes depend very much on the chosen input. For Joedicke, the big legacy of the organic approach is that Häring among others made clear that these inputs are to be considered within its time and it would be users and architects to articulate them.¹⁶⁵ In the following I will consider two artists, who exploring the available technologies of their time have foremost aimed to empower people to take lifestyle choices on their own and hence participate in urban planning.

Yona Friedman: Hardware, Software, Lifestyle choices

The French architect Yona Friedman like many artists of the 1950s and 1960s shared the critical view on functionalist post-war cities. He claimed for an emancipation of users from “the patronage of architects” and imagined a “scientific” architecture. He divided the city in hardware - spatial infrastructures and customized modules of mobile architectures - and software, which would provide city dwellers with a constant “information circuit”. He embraced the emerging computer technologies in order to analyse how people use the city.

¹⁶² Häring, ‘versuch einer orientierung’, p. 34, translation taken from Conrads, *Programs and manifestos on 20th-century architecture*, p. 127.

¹⁶³ Hugo Häring, ‘geometrie und organik - eine studie zur genese des neuen bauens’, in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 68-73, p. 70, (first published in *Baukunst und Werkform*, September 1951), my translation.

¹⁶⁴ Joedicke, ‘Vorwort zur zweiten Auflage’, p. 5.

¹⁶⁵ Jürgen Joedicke, ‘Zum Werk Hugo Härings’, in *Hugo Häring: Schriften, Entwürfe, Bauten*, ed. by Jürgen Joedicke and Heinrich Lauterbach, 2nd edn (Stuttgart: Karl Krämer, 2001), pp. 153-59, p. 154.

Opposing any stimulation for radical behaviour change, he like many architects of his generation aimed for a progressive transformation of the society from within. In such a participatory approach to urban planning, health-related behaviour change seems to be attempted through providing information on consequences of certain behaviour.

Friedman's language borrows largely from the language of the then emerging computer science. Being concerned with urban planning and housing, Friedman distinguishes the city into hardware and software. In his words, users inhabit the city, while architects are taking on the role of programmers. Architecture and urban planning, however, for Friedman was one of the behavioural sciences that have to embrace new possibilities of computer technology.¹⁶⁶ It is important to note that Friedman shares the critique on post-war cities and modernist architecture. He states to have the same goals than many modernist architects such as to build "for the many" by implementing the new means of mass and pre-fabrication. In his view, those modernists would have responded to the changed design paradigms in the wrong way. They would have focussed on specifying the needs for the *average* user - a figure, which in Friedman's view hardly exists. Hence, designing for such a figure must fail. Instead of planning for the "real user", modernist architects would have based their specifications mostly on ideological assumptions, hardly on experimental evaluation. The result of such a patronising design process could be seen in the discontent with post-war town planning and architecture, expressed by so many of his contemporaries.¹⁶⁷

Friedman therefore is in search of a new, "scientific architecture", which aims to emancipate users from the patronage of architects. Architects, he suggests, should take on the role of a restaurant owner. The latter would never interfere with visitors' choices of meals, even though they might diverge from his personal taste. He merely sets up a menu of dishes to choose from and likewise, architects should work on a repertoire of objects and products for their clients to choose from. Such a repertoire of "mobile architecture" – one that can be chosen and transformed by users – would combine different configurations, shapes, positions and sets of equipment.¹⁶⁸ Friedman points to graphs of all the design features in their unconnected, not yet customized form as representing an "infrastructure" of 24 million possibilities. Ideally, such a catalogue to choose from would form the most indeterminate infrastructure possible.¹⁶⁹ Friedman goes on showing how the building repertoire is applied to users individual needs by a machine he calls *The Flatwriter*. The latter provides a constant loop between users' preferences and a "warning system" simulating the potential outcomes of their choices. *The Flatwriter* would not only double-check the projected layout with the supplied information about users' lifestyles, but would simulate potential interference with neighbours (Figure 30). By introducing an "informational process", Friedman concludes, *The*

¹⁶⁶ Yona Friedman, *Toward a scientific architecture*, trans. by Cynthia Lang (Cambridge, MA: MIT Press, 1975), p. 1.

¹⁶⁷ Friedman, *Toward a scientific architecture*, p. 3.

¹⁶⁸ Friedman, *Toward a scientific architecture*, pp. 33-5.

¹⁶⁹ Friedman, *Toward a scientific architecture*, p. 45.

Flatwriter would allow users for almost limitless individual choice. At the same time, it would prevent and correct planning errors without intervention of professional authorities.¹⁷⁰

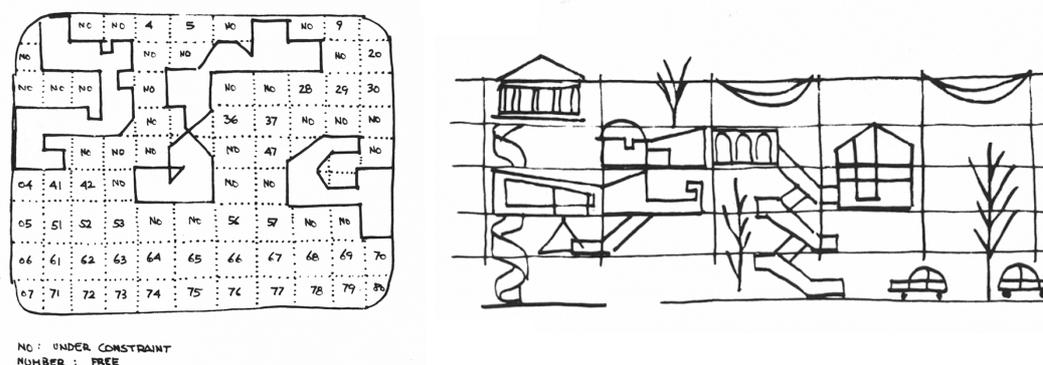


Figure 30 Yona Friedman, *The Flatwriter*, 1975.

Friedman saw users in the centre of design process in which he chooses according to his needs and receives simulations and “warnings” of the consequences by experts via simulations displayed on “videoscreens”. In his “schematic presentation, Friedman states: “The Flatwriter substitutes all decisions usually made by the architect, the planners, the builder, by decisions made by the future inhabitants.”¹⁷¹

The profession’s main creative work would lie in setting up the building repertoire and contributing to the simulation process. Architects therein act as one of the many experts within the behavioural sciences. As I have discussed earlier in this text, Pasteurians’ “theatre of proof” relied largely on its interplay between experiments in the real world and simulation in a laboratory set up. They developed several strategies such as the mobile laboratory that I have described as pervasive. Friedman’s approach to pervasive computing technology, however, reveals itself in his section titled “how do you observe a city”. He states to gain an insight in users’ motivations, identities, or even movements, would be impossible. Thus would mean to observe the city in a “god’s eye view”. In contrast, one would have to take on an “accountant’s view” that can merely track the number of people arriving at a given place and was supported by technologies such as turnstiles and photoelectric cells.¹⁷² I may note in passing that the challenge of what kind of data can be tracked by technology and what kind of information relies on users’ input is a re occurring challenge in city analyses. Even though today’s Global Positioning Systems (GPS) enable to track people’s “itineraries” – something that Friedman still found impossible in 1975 - today’s computer scientists point out that positioning alone was hardly sufficient information to advance context aware and situation tailored services (Figure 31). With a most possible evaluation of people’s movements, Friedman wanted to depict fluctuations within the urban mechanics comparable to meteorological maps.

¹⁷⁰ Friedman, *Toward a scientific architecture*, pp. 53 ff.

¹⁷¹ Friedman, *Toward a scientific architecture*, p. 54.

¹⁷² Friedman, *Toward a scientific architecture*, p. 73

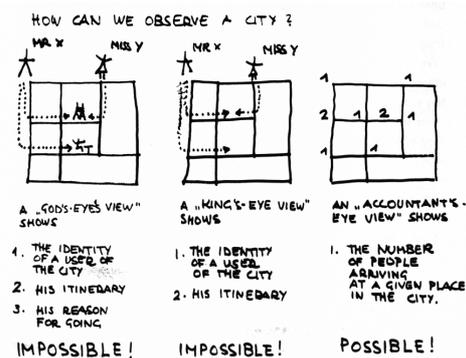


Figure 31 Yona Friedman, *How can we observe a city?*, 1975.

In 1975, Friedman emphasizes being restricted to an "accountant's eye view" merely being able to count numbers of people at a certain location through technologies like "photoelectric cells."

His so-called "effort maps" show the frequency with which users itinerate streets, parks and public spaces. Such information, he states, would be valuable for businessmen looking for the most suitable location to open up their shops. More generally, he claims, such maps would be crucial for individuals looking for the right place to live. Effort maps would be for all the users of cities providing "multiple warnings" on which basis each one can adapt their lifestyle decisions.¹⁷³ Moreover, such multi-modal maps may visualize the consequences of large building interventions tailored for each user to his or her specific location. Friedman sees such maps as an important aspect of urban democratization giving citizens the "appropriate" information in the face of political decision-making. Tracking peoples' actual behaviour through pervasive technology and providing such data to city users aims to find the best design solutions. As Friedman concludes, urban planning on such a basis "would choose the intervention that injured the smallest number of people or that improved the situation of the largest number of people."¹⁷⁴ In this notion, technology needs to *pervade* into everyday environments in order to map real behaviour of the citizens. To pervade means to become ubiquitous and gather as much data as possible in as many locations as possible. At the same time, Friedman's "accountants" need to become invisible – hidden under every day surface - in order not to influence peoples' behaviour.

Friedman was not so much concerned with behaviour *change* than with evaluating, analysing and mapping human behaviour in the city. He points out that his effort maps would not register whether changes are being caused by physical interventions such as construction or demolition of buildings or non-physical interventions. In fact, for Friedman, the built network was the least important aspect in depicting urban mechanics. On the other hand, when it comes to transforming urban mechanics, to intervene in the physical shape of a city would be way more feasible than to intervene into behaviour, which would be "almost impossible".¹⁷⁵ Friedman does not consider using the one aspect - physical intervention - to stimulate the other - users' behaviour. Thus would have been against his credo that all decisions and lifestyle choices belong to the user only. For him, urban research was merely to gain a

¹⁷³ Friedman, *Toward a scientific architecture*, p. 78.

¹⁷⁴ Friedman, *Toward a scientific architecture*, p. 90.

¹⁷⁵ Friedman, *Toward a scientific architecture*, pp. 79-81.

broader understanding of urban mechanics and make such available for non-professionals for instance through maps. On the basis of such appropriate information, users were to be set in the position to make their own decisions about their lifestyles.

Friedman indicates the 1960s and 1970s as an epoch, in which the sufficient supply of goods such as bread, water, and so on in order to guarantee survival would have been reached. He goes on drawing his conclusion for a society, which would constitute itself by status symbols and goes on claiming for a “non-competitive society”.¹⁷⁶ I may note how Wilkinson and Pickett have recently tried to show that precisely more equalitarian and presumably less competitive societies are those with better health statistics.¹⁷⁷ Friedman more than 30 years earlier, specifies a relation between urban mapping, behaviour and personal health parameters. Concerned with the general study of human behaviour, he first relies on traditional “functionalist” typology of activities such as work, leisure and supply. These categories can be related to the number of days people would devote to such activities - ranging for instance from 0 to 7 days a week. In order to get a broader picture of human behaviour, he suggests, one may substitute such “rather hastily chosen categories” with more specific variations. Such a list may account for instance on how often users indulge in activities that a) have no influence b) lower, or c) increase their blood pressure.¹⁷⁸ He goes on extending such analysis method to “collective behaviour” depicting activities of the whole population and evaluating its “distribution in space.”¹⁷⁹ To research into urban mechanics for Friedman also would include health-related data.

It is important to note that Friedman insists that lifestyle choices remain in the responsibility of each city dweller. This sets him apart from today’s behaviourist scientists, who emphasize the potential of “nudging” to make people take the right decisions for their health. The latter suggest acting as “choice architects”, who would pre-select certain behaviour and make such easier to access than other lifestyle choices.¹⁸⁰ Simon Sadler points to contemporary critique on the shortcomings of cybernetic planning with their anti-ideology and laissez-faire policies. As Sadler accounts, claiming to base any political decision on scientific and empirical data only has been seen as dogma in itself. Critics opposed it would replace intellectual activist with the figure of the noble engineer. Being committed to unrestrained economical growth, cybernetic planning, it was feared, would leave decision-making eventually in the hand of only a few technocrats, indifferent to ideology.¹⁸¹ By setting up the repertoire of mobile architectures and even a most indeterminate infrastructure, Friedman would allow decisions and modifications within the system, yet he seems to hardly question the system itself.

¹⁷⁶ Friedman, *Toward a scientific architecture*, p. 129.

¹⁷⁷ See Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Equality is Better for Everyone* (London: Penguin Books, 2010).

¹⁷⁸ Friedman, *Toward a scientific architecture*, p. 96.

¹⁷⁹ Friedman, *Toward a scientific architecture*, pp. 98 ff.

¹⁸⁰ See Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions About Health, Wealth, And Happiness* (London: Penguin, 2009).

¹⁸¹ Sadler, 'Open Ends: The social visions of 1960s non-planning', p. 143.

It is only in the appendix to his book, that Friedman allows himself to leave what he calls an objective and neutral approach. He states to leave merely illustrating his urban mechanics and goes to state his opinion on what he calls “realizable utopias”. Friedman claims for a more egalitarian society, which would bear the attributes “non-competitive”, “anonymous” and would combine a sustainable economic growth of local businesses with protecting resources and environment.¹⁸² It is important to note that Friedman does articulate his view political and social reform. Sadler has pointed to a generation of “non-plan” architects of the 1960s, who would have believed in “open-end” designs, constantly to be decided upon and modified by their users. As Sadler puts it, unlike their avant-garde predecessors, the avant-garde of the 1960s - with only a few exceptions such the Situationist International (SI) – would not have wanted to overthrow social convention in a single coup d’état. They would have attempted a slow transgression of the society from *with in*. In practice, this often would have meant to attack any paternalism by the growing welfare state with liberalizing local economies and empowering the ordinary citizen.¹⁸³ Likewise, Friedman seeks to empower people and eventually might have hoped to stimulate behaviour change by his information processes.

As a practicing architect, Friedman highlights the necessity to help under privileged people through urban intervention and design projects. He has envisioned and has built shelters for homeless people in Western societies and has worked extensively in developing countries. His main concern again seems to be to provide tools and processes of self-help. With his project “2 walls + 1 roof” for instance, he hoped to improve the situation for the homeless in Paris. His framework provides each with a unit to build a shelter in by using affordable materials varying from cardboard to solid walls. Each unit would be connected to the electricity, fresh water and sewage network. Being concerned with actual building, Friedman stresses pervasive technology by emphasizing cheap or freely available materials.¹⁸⁴

Reforming society from within meant for Friedman to develop an infrastructure within the city. His collages of *Paris Spatial* of 1959 show such a superstructure of frames and mobile architectures to sit on the top of the existing Paris.¹⁸⁵ Friedman did not claim to demolish the old, insufficient housing schemes and replace them with new modern structures (as imagined by Le Corbusier) nor did he want to support the fast growing suburbia next to the city (as initially envisioned by early socialist utopians). At the first sight, such mega structures seem not to attempt to hide behind the surface of familiar objects as it has often been characterised for pervasive computer technologies. Still, they seem foremost to visualize a spatial strategy: To penetrate every available space in the city and recuperate usable airspace. Whereas to build realizable utopias instead or next existing cities has become unacceptable for Friedman’s generation, he suggests intervening in the city, wherever there would be space left. Such a strategy of mobile architecture is not far from the definition for pervasive or

¹⁸² Friedman, *Toward a scientific architecture*, p. 160-3.

¹⁸³ Sadler, 'Open Ends: The social visions of 1960s non-planning', p. 146.

¹⁸⁴ See Friedman's projects “Museum for Simple Technology” in India and “2 Walls + 1 Roof” for homeless people in Paris in *Yona Friedman: Structures serving the unpredictable*, ed. by Sabine Lebesque and Helene Fentener van Vlissingen (Rotterdam: NAI Publishers, 1999).

¹⁸⁵ See “Paris Spatial” from 1959 in Yona Friedman, 'Projects', in *Yona Friedman: Structures serving the unpredictable*, pp. 34-6.

ubiquitous technologies, which emphasizes precisely the ability of computers to go everywhere and at anytime.

Paris Spatial seems to visualize an approach to urban reform through computer technology that he has specified years later in “Scientific Architecture”. As the spatial frameworks, his scientific architecture is to provide an abstract, most indeterminate technological infrastructure that pervades the old system. Precisely with applications such as *The Flatwriter*, he anticipates a system of Augmented Reality that simulates consequences of behaviour and would deliver their illustrations to users in real time. Friedman seems not to attempt to alter the built environment in one big plan and would insist not to stimulate any specific lifestyle choices. Yet, he emphasised ubiquitous technology that would gather and provide the whole spectrum of human behaviour. As I have shown above, such data would include physiological and behavioural aspects data as well as their relation to one’s wellbeing. Consequently, such data would form what Friedman’s framed in his own words “the appropriate” information to make lifestyle choices. He would insist not to nudge people to certain lifestyle choices – for instance healthy or eco-friendly behaviour - yet he advanced technological and urban mapping strategies that lay grounds for what will in the following as more recent performative technologies.

Bio Mapping

In the following I will discuss more recent projects for which maps and map-making play a crucial role to make aware of environmental influences and stimulate behavioural change. Christian Nold’s *Bio Mapping* seems to advance on the notion of psycho-geography by developing a sensorial device that tracks and locates physical influences on peoples’ emotionality. Nold likes to set his practice apart from pervasive technology and likes to highlight the “performativity” of his method. It would be crucial to stimulate participants’ interpretation and providing context in order to give any measured and recorded body data meaning. He therefore seems to work on participatory methods, which hope to stimulate a public discussion about local concerns and urban planning issues through a mixture of gaining data and involving users.

Nold sees *Bio Mapping* as a critical response to the recent trend of pervasive technology. As he puts it, the latter would tend to integrate computing intelligence into everyday life and into the human body. He sets out to investigate the potentials that may arise from technologies measuring, recording, and communicating most “intimate” body data. To that end, he has invented the *Bio Mapping* device, which combines a wearable biometric sensor measuring Galvanic Skin Response with a Global Positioning System (GPS). The sensor itself, he points out, would be based on lie detectors being used in law investigations. Likewise, it measures changes in the sweat levels of the wearer’s fingers and follows the assumption that such changes would indicate peoples’ emotional intensity (Figure 32.1). GPS, on the other hand, tracks participants’ position on the earth and would make it possible to see where exactly

participants are when these changes occur.¹⁸⁶ The two sets of data combined, can be visualized in mapping software such as Google Earth inscribing a saw-tooth vertical trace on the landscape (Figure 32.2).



Figure 32 Christian Nold, Bio Mapping, 2005.

Nold's Bio Mapping device consisting of GPS on the left, fingercluffs on top and data logger on the right. The sensor in the fingercluffs measures changes in the sweat levels, which has been related to stress arousals. Visualization of Bio Mapping Data shown in Google Earth. The height of the track showing arousal of stress levels at this point. A participant made annotation "Busy traffic crossing".

For Nold, the result is a unique device that sets into relation body data and the outer space of whatever area in the world. In response to the first launch of the device, Nold states, he would have received various inquiries seeking to apply his concept to products, marketing campaigns and research. He also points to many personal responses by people, who would have liked to better understand their body, or would have asked for a therapeutic device to monitor their daily anxiety levels.¹⁸⁷ For him, it would have been those remarks that made him focus on developing a whole method around the Bio Mapping device. One that would allow participants to interpret their own body data. As he hopes, precisely such a practice of making people talk about their body's response to urban environment would not only produce a new kind of knowledge, but as well a new kind of "psycho-geography".¹⁸⁸ Here and elsewhere, Nold refers to the Situationist approach to which I will have to say more later in this text.

Nold likes to set his work apart from various potential applications for his concept, which he would have felt uncomfortable with. For instance, he points to marketers, who would have approached him with intentions to metaphorically "slice of people's heads open to see their innermost feelings and desires."¹⁸⁹ Earlier, I have pointed to critic on "persuasive technologies" employing behavioural sciences to their designs without making users aware of it or without reflecting on the wider cultural implications. In contrast, Nold emphasises Bio Mapping as a "performative technology", one that would foremost stimulate peoples' own

¹⁸⁶ Christian Nold, 'Introduction: Emotional Cartography - Technologies of the Self', in *Emotional Cartography: Technologies of the Self*, ed. by Christian Nold (London: Creative Commons, 2009), pp. 3-14. p. 3.

¹⁸⁷ Nold, 'Introduction: Emotional Cartography', p. 4.

¹⁸⁸ Nold, 'Introduction: Emotional Cartography', p. 5.

¹⁸⁹ Nold, 'Introduction: Emotional Cartography', p. 6.

interpretation of their body data. In his view, data such as stress levels or global position would be more or less objectively measured. They would only gain meaning through users providing their subjective story and context. That leads him to call Bio Mapping a “reflexive and participatory” methodology.¹⁹⁰ I may note in passing that Nold’s critic on pervasive technology, which he mentions as a starting point to the project, corresponds to the fact that he uses a device that is attached to the finger cups and measures sweat levels on the human skin. Diagnostic scientists would call such sensors “non-invasive” in order to emphasise that these sensors are not entering the human body. In contrast, research for instance on continuous blood sugar monitoring works with a variety of implanted sensors. Nold does not explicitly exclude invasive or subcutaneous sensors, but he insists his Bio Mapping sensors are non-pervasive. He therefore stands as I will show later somewhat in contrast to the 1950s Situationists who did not shy away from swallowing mind-altering drugs in order to better perceive environmental influences on one’s body. In contrast, Nold highlights interpretation, discussion and responses to his maps on the influence of the urban environment. In the following, I will pay more attention to how Nold aims to stimulate behaviour change and actions in his participants.

Referring to Situationists maps and their capability to stimulate such responses, Nold states they would have been “disappointingly uncommunicative.”¹⁹¹ Drifting with a Bio Mapping device would deliver very different maps. They would assemble individual experience on various perceptual levels and would depict the relationship between emotions and the physical space. From his project Greenwich Emotion Map, with more than 50 residents taking part from October 2005 to March 2006, Nold likes to draw three possible levels of how the physical environment effects upon human emotions. On a basic level, there would be sensory influences, triggered through visual, auditory, taste and smell stimuli. On a further level, he accounts on influence by the built environment, which may be observed in stress arousals occurring at traffic crossings or in response to particular local features. For Nold, however, social interaction appears as the most important and dominant level, with emotion levels going up due to surprise meetings with friends, neighbours and strangers as participants would have accounted on in later interviews.¹⁹² In this specific project, Nold points out that his map may be used as a starting point for rich experiences. He suggests users may design their own routes for a drift for instance visiting only those places with big communal stress arousals or re-visiting peoples’ walks and being able experience and share their walks.

Where such forms of using an Emotion Map would focus on individual use, Nold goes on stating that they would challenge the way cities are often officially represented and would question what would be considered as important landmark buildings. They would show limits of possible public interventions and since they are record of a particular time in terms of peoples’ interaction with public space, Emotion Maps would enable a comparison of over

¹⁹⁰ Nold, 'Introduction: Emotional Cartography', p. 6.

¹⁹¹ Christian Nold, 'Greenwich Emotion Map, Christian Nold, 2005-6' <<http://emotionmap.net/map.htm>> [accessed 10 October 2011].

¹⁹² Nold, 'Greenwich Emotion Map'.

time. Therefore, he sees them as a starting point for a discussion that could identify local issues. In the case of the Greenwich project, such agendas may be pushing for better pedestrian or cycle access or to rescue the local café, which would be under threat by re-urbanisation processes.¹⁹³ Though sharing a good deal of aims and methods with the psycho-geography, especially these very last proposals for urban intervention as one of the results of the undertaking appears way more pragmatic than what Debord might have had in mind when he called out for alteration in everyday life. Indeed, to claim for extra cycle lanes or stress the importance of “walkable” cities seems to be common sense. As I have shown above, it is being claimed by research on obesogenic environments. But through Bio Mapping, Nold seems to work on a tool to identify and articulate such claims for specific locations.

In his Stockport Market, Nold pushes even more in the field of urban design and participative design methods. He slightly alters the system by pre-staging what he calls “drawing provocations” before sending people on their drift with the Bio Mapping device. In a first stage, more than 200 participants would have been asked to sketch their response to “serious and humorous” provocations about their daily lives in Stockport. Among the question are where they would meet their friends or where the most important or dangerous persons of Stockport would live.¹⁹⁴ Other questions were all the more focussed on Stockport’s history and specific landmarks, in which Nold seems to be particularly interested in the first place. In a second step, people would browse around in Stockport city centre equipped with their Bio Mapping device. Nold reminds us that the detected “arousals” in stress levels would neither account of positive or negative emotions, but would be best understood as an attention level towards one’s body and the nearby surroundings.

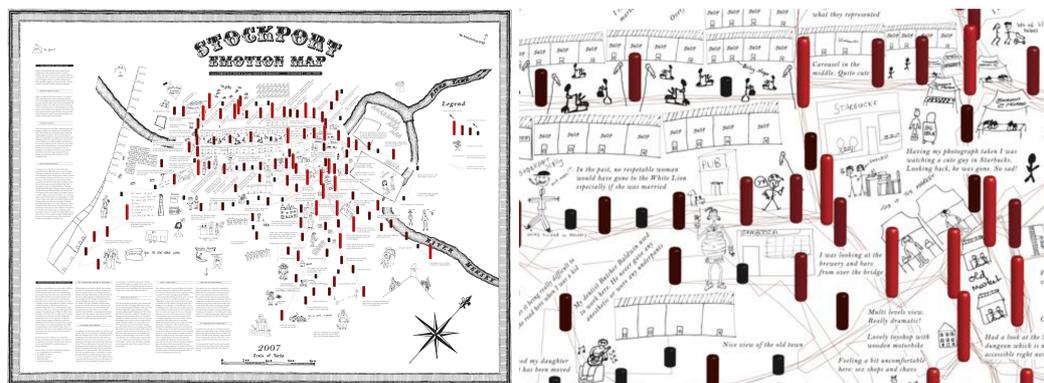


Figure 33 Christian Nold and Daniela Boraschi, Stockport Emotion Map, 2007.

The map shows people’s movement through the city, their stress arousals and interpretation in the form of drawings and comments.

The resulting map depicts peoples’ movement over the period and indicates the corresponding stress levels in the form of tubes with different heights and colour intensities. As a third layer, participants added their own interpretation on why they think their stress

¹⁹³ Nold, 'Greenwich Emotion Map'.

¹⁹⁴ Christian Nold, 'Stockport Emotion Map, Christian Nold, 2007' <<http://stockport.emotionmap.net/map.htm>> [accessed 10 October 2011]

levels would have risen in the form of little notes (Figure 33). As Nold claims, the map would be an appropriate tool to collect and record, what would normally appear to be trivial conversations and minor events of our everyday life. Moreover, bringing those observations by over 200 individuals together and assembling them in one map, he claims, several clusters and contexts would appear. As such he identifies 5 issues for Stockport city centre:

1. The marginalised history of Stockport”
2. The hidden river Mersey
3. Monolithic shopping,
4. Semi-Public Space
5. Isolation of young people.¹⁹⁵

It seems tempting to see this list of outputs closely associated to Nold’s initial input. They appear to be in line with what he has asked for in the interviews in the first place. However, this is a known critique on participative planning methods, and as for instance Joedicke has put it, to set a design challenge is always a subjective undertaking, which closely related to a specific author and time. What he likes to see as an organic architecture would however emphasize the process of finding a form or as one may add an “articulation” of an issue being evident for this specific generation.¹⁹⁶ In my opinion, it would miss the point to criticise that one can trace the artist’s initial interest in a participatory planning process to its outcomes. It is after all an attempt to reveal, re-formulate and articulate such an interest with the help of users and spatial practices.

Boyd Davis points to Nold’s Bio Mapping as having added to a variety of location sensitive services and maps the responsiveness to other dynamic personal data. Its innovation in other words would be to bring to interactive and subjective maps physiological body data. In Boyd Davis’ view the subjectivity that arises from such personalized maps, would therefore become multimodal. Projects as Bio Mapping would enable for individual’s and group’s subjectivities to be depicted and lay the ground for communal reflection and discussion.¹⁹⁷ Boyd Davis goes on calling the mobile device presenting such knowledge through interactive maps a “prosthetic extension” to the human body. They would illustrate relations that would have kept revealed otherwise.¹⁹⁸ I may note that it is not a house seen as a biological apparatus anymore or functional interiors that are seen as artificial limb objects. Neither do I consider the bat-like gadgets of Archigram as prosthetic technology here. In this notion, I like to highlight the organ-like character of technology in so far as it allows to identify and discuss potential influences on one’s wellbeing.

Unlike persuasive technology, which can engineer certain agendas, performative technology can unfold a big potential for serious games or health games in order to articulate and these “higher” aims most transparently and in advance. Such a reflexive and participatory method

¹⁹⁵ Nold, 'Stockport Emotion Map'.

¹⁹⁶ Joedicke, 'Vorwort zur zweiten Auflage', p. 5.

¹⁹⁷ Boyd Davis, 'Mapping the unseen', pp. 47-8.

¹⁹⁸ Boyd Davis, 'Mapping the unseen', p. 48.

seems highly relevant to the context health-orientated urban interventions. It may help to express an interest of intervention, gathering geographical and body-related data, and finally helps people to interpret this “intimate” data. It seems precisely the power of making participants setting their body data into context that seems promising for instance for the therapy of chronic diseases. Elsewhere, Moar and I have speculated on the potentials of a diabetes mapping game that would show insights into sugar levels, individual therapy management and the urban environment.¹⁹⁹ Such a relationship seems to be hardly investigated so far, but may promise to offer new insights in the relations between daily therapy management and social and spatial environments. Nold stresses with the Stockport Emotion Map, such applications to a health context promises to shift the responsibility of dealing with lifestyles diseases towards the current shape and future design of environmental and social circumstances. Therefore it may well offer new insights into the discussion on “obesogenic environments” mentioned above and on potential health-orientated urban interventions.

Precisely within the field of therapy prevention and management, a more playful approach to participatory planning seems to unfold potentials for users’ motivation and long-term compliance. In the fourth chapter, I will show how the notion of serious games can augment such processes, by also unfolding an immediate benefit for one’s health.

¹⁹⁹ Martin Knöll and Magnus Moar, 'The Space of Digital Health Games', *International Journal of Computer Science in Sport*, XI (2012).

IV. PLAYING HEALTH GAMES

I have shown various playful and game-like approaches to health promotion so far. In Chapter 1, I have contrasted the strolling of flaneurs to the daily regime of a Morgenpromenaden-Verein, whose members have organised walking in park around a strict club routine. Following Caillois' categories of games, I have shown in chapter 2 how health resorts have integrated games of chance, make-belief and vertigo into a fully-organised entertainment routine. It seems important to recall that Caillois' major concern - competition would become the most prevalent motive for games in modern society - can hardly be observed in health resorts. I have speculated that competitive play in its pure form had to be banned from a holiday experience, in which Epidemic Entertainments would start to suspend daily struggle and performance pressure for a restricted amount of time. In contrast, I have shown in chapter 3 how modernist architects have championed competitive play in the form of traditional sports. They have sought to educate, train and prepare the Modern Man – in their eyes a Boxer and Engineer – for a daily struggle on jobs with what I have observed as a prosthetic architecture. Bearing in mind the full range of playful and game-like experiences that have occurred within the context of urban health care, I will describe the kind of play that occurs in today's digital health games in the following.

Having published scholarship and developing digital health games since the early 1990s, Debra Lieberman seems to me one of the most experienced designers and researchers in the field. She points to a long history of serious games that would go back to the start of commercially available digital games for entertainment in the early 1970s. She notes that even before the advent of videogames as consumer products, games and simulations supported by mainframe computers would have been used in education. For her, “serious games” would be made for learning, skill development, attitude and behaviour change as well as other purposes beyond entertainment.¹ She points out that serious games despite their long, emotionally and controversially discussed history, would have gained broader acceptance only in the past few years. Since then, a wide array of stakeholders would have become interested in a field, in which momentum and available amount of support would be growing. Various professional and academic organisations are holding well-attended conferences. Several books and an increasing number of peer-reviewed articles could be found in addition to lively discussion in online forums and mailing lists. Lieberman describes a climate of support and development for health games in the US, in which several federal agencies as well as various foundations would increasingly fund research projects.² Having studied health games at institutions in Germany and the UK, I have perceived an increasing research interest in the field here, too.

The most successful videogame with a distinct fitness and wellbeing agenda to date is Nintendo's console series Wii Fit and Wii Sports. The latter has sold 79.16 million copies

¹ Debra A. Lieberman, 'Designing Serious Games for Learning and Health in Informal and Formal Settings', in *Serious Games - Mechanisms and Effects*, ed. by Ute Ritterfeld, Michael Cody and Peter Vorderer (New York; London: Routledge, 2009), pp. 117-30, p. 117.

² Lieberman, 'Designing Serious Games for Learning and Health', p. 118.

worldwide by December 2011.³ Several companies have followed to develop games that make use of new motion sensor devices such as Microsoft Kinect. Such games are often called exergames, since they respond to and seek to stimulate physical exercise in players. Studies have shown positive effects of video games on a wide array of health related behaviour changes. These include player making better-informed health choices or better understanding and being more motivated to fight cancer.⁴ Sawyer and Smith have outlined a broad array of purposes and potential of serious games for learning and health promotion. However, they have criticised that serious games would often consider only potential outcomes and therefore would undermine what they call “a larger possibility space” of serious games. In their view, the latter would precisely unfold from different inputs and would result from experimenting with various kinds of gameplay activities, technologies and artistic strategies.⁵ Following Sawyer and Smith’s observation, I will show that one area of such experimentation may well be an increased interaction with their urban context. Elsewhere, Moar and I have observed how recent exergames running on mobile devices are making use of a variety of sensors, motion detection and positioning technology. Mobile exergames integrate information on their context and seem to benefit from the particular location they are being played in.⁶ Building up on my analysis on the relationship between urbanism and healthcare, on entertainment and performative technology, I will investigate how current digital health game practise interact with their topographic, social and cultural context. Specifically, I will pay attention to the kind of play that occurs in and around digital health games with a particular focus on mobile and context-aware games. In the following chapter, I will characterise three directions of playing health games in an urban context as collaborative, expressive and reflective.

Collaborative

Considering critique on exergames to foster foremost competitive play and merely imitating traditional sports, I will look into possibilities of what more collaborative health games. Rather than stimulating players’ compliance through competition, I will highlight games, in which users collaborate to create their own content and play activities. I will discuss Jane McGonigal’s Mixed Reality Game *CryptoZoo* here, which blurs the boundaries between social networks and performative spatial practise. McGonigal sees *CryptoZoo* in the tradition of free running and seeks to animate players to develop, share and revisit their own running styles in response to real world locations. Having a closer look into Skateboarding as a spatial practise that re-appropriates urban space and architecture for the body, I will reveal two perspectives on *CryptoZoo* from urban design. First, I will underline McGonigal’s claim to

³ Wikipedia, 'Wii Sports', in *Wikipedia - the free encyclopedia*

<http://en.wikipedia.org/wiki/Wii_Sports> [accessed 14 February 2012]

⁴ Tom Baranowski and others, 'Playing for Real: Video Games and Stories for Health-Related Behaviour Change', *American Journal Preventive Medicine*, XXXIV (2008), pp. 74-82.

⁵ Ben Sawyer and Peter Smith, 'Serious Games Taxonomy'

<http://www.seriousgames.org/presentations/serious-games-taxonomy-2008_web.pdf> [accessed 22 March 2011]

⁶ Martin Knöll and Magnus Moar, 'On the Importance of Locations in Therapeutic Serious Games', in *5th International ICST Conference on Pervasive Computing Technologies for Healthcare* (Dublin: University College Dublin, 2011), pp. 538-45.

stimulate user-generated play activities through collaboration, social exchange, storytelling and temporary performances. Conclusively, I will show how CryptoZoo hardly aims for any substantial change in the built urban environment, but sparkles a collaborative and temporary re-appropriation. Leaving behind not more than paper masks and chalk signs, I will show how CryptoZoo uses the city as a temporary stage that constitutes its playful and health promoting performances.

Social rituals and digital games

Lieberman emphasises several well-tested principles of learning and behaviour change, which build on the work of behavioural scientist Albert Bandura from Stanford University. Bandura's Social Learning Theory would posit new behaviours can be learned by both observing the action of others and by observing potential outcomes and consequences of such actions. Lieberman highlights the potential of social facilitation in young people, who would learn behaviour often from role models. As she points out such may be real people or characters portrayed in video games.⁷ She also points to Bandura's model of "perceived self-efficacy" as people's beliefs in their own capability to either carry out a task or being able successfully adapt to the demands of certain situations. It would have been found crucial to translate newly gained knowledge into positive actions. Lieberman states that video games could be designed to enhance player's perceived self-efficacy by providing an environment in which young people can experiment, perhaps fail, but would ultimately succeed. Players would be able to rehearse health related tasks and skills until they become more confident and eventually would perceive themselves as more self-efficacious.⁸ I may note that for behaviour change through learning from role models or building up confidence in one's capabilities, social interaction seems a key aspect.

As early as in the 1990s, Lieberman and her colleagues have shown in clinical trials that videogames dealing with asthma and diabetes have led to better health outcomes. They have demonstrated that participants have shown increased motivation to learn, but also higher attention and active processing to health related content and health messaging. Players of the game *Bronkie* would have shown an increased self-efficacy for their asthma management. As she puts it, the diabetes game *Packy & Marlon* would have acted as a "spring board" for an increased communication about diabetes between patients, friends, family and health carers.⁹ Elsewhere, Lieberman points to the unique experience of interactive media to face personally tailored information and feedback, while at the same time using it in privacy and without surveillance or presence of someone else. What she praises as the combination between interaction and privacy would provide players with a safe and personally tailored learning environment, in which players would foster self-efficacy beliefs.¹⁰ In particular when dealing

⁷ Debra A. Lieberman, 'Interactive Video Games for Health Promotion: Effects on Knowledge, Self-Efficacy Social Support, and Health', in *Health Promotion and Interactive Technology: Theoretical Applications and Future Directions*, ed. by Richard L. Jr. Street, William R. Gold and Timothy Manning (New Jersey & London: Mahwah, 1997), pp. 103-20, p. 112.

⁸ Lieberman, 'Interactive Video Games for Health Promotion', p. 113.

⁹ Lieberman, 'Interactive Video Games for Health Promotion', pp. 114-6.

¹⁰ Debra A. Lieberman, 'What can We Learn From Playing Interactive Games?', in *Playing video*

with severe and stigmatized conditions, such a safe environment would allow players to try out certain behaviour without the risk of bad health outcomes or being laughed at. They could train and fail in private, and as a second step could “go public” when they feel they have improved their skills.¹¹ It is important to note that Lieberman emphasises health games as a learning environment that is distinct from everyday life routines. In her view, health games unfold their learning benefits foremost retrospectively and in situations separate from those of the game session. Her remarks on privacy and publicity point to health games as a spring board to foster communication and collaboration outside the game experience. In the following, I will have a closer look on what Lieberman states towards social interaction within health games.

Lieberman points out that to most users playing interactive games would be essentially a social activity. The desire to show expertise and gain approval would be a crucial factor to stimulate and maintain players’ motivation. Having used the metaphor of a springboard for communication after playing a health game, she also mentions two places, which would contribute to increase users’ motivation and learning during the game. For her, videogame arcades would be a good example for a “meeting place”, where adolescents could socialise without parental control and could “show off” their skills.¹² Lieberman insists such meeting places can be also of a hybrid or more virtual character. She sees considerable potential for learning in so-called Multi User Domains (MUDs), which seek to sparkle collaboration in players to solve game tasks and quests. Lieberman points to studies that show group-participation within such virtual communities to often develop creative and productive projects. They would stimulate constructive learning in players, which would have been characterised by high self-motivation and peer-support.¹³ In her comments on videogame arcades and MUDs, one aspects strikes my particular attention: Both meeting places are presented by Lieberman as hidden, almost secretive places, which apply their own procedures to allow access to fellow gamers.

Lieberman’s notes on social interaction in and around digital health games mainly refer to traditional desktop games. In her conclusion she points to new ways of interacting with video games through recently emerging input devices and sensors. Building upon the foundation of already established knowledge on how humans learn and change their behaviours, she claims for future research to show what can be learned from each particular environment.¹⁴ Being concerned with exercise games elsewhere, Lieberman has paid more attention to players’ use of mobile game set ups. Dance games such as *Dance Dance Revolution* (DDR) mostly unfold from a set of gadgets consisting of a game console, a sensor pad on the floor and a large screen. Today’s dance games use cameras to track players’ movement, which has made their settings even more affordable, flexible and mobile. Lieberman points to a study on 18 – 27

games: motives, responses, and consequences, ed. by Peter & Bryant, Jennings Vorderer (New Jersey: Lawrence Earlbaum Associates, 2006), pp. 379-98, p. 389.

¹¹ Debra A. Lieberman, 'Ten Ways Playing Video Games Can Improve Our Health' (Presentation, 2010).

¹² Lieberman, 'What can We Learn From Playing Interactive Games?', p. 390.

¹³ Lieberman, 'What can We Learn From Playing Interactive Games?', p. 391.

¹⁴ Lieberman, 'What can We Learn From Playing Interactive Games?', p. 393.

year old players being asked why they enjoy playing dance games. In descending grade of importance, participants gave in response:

“To have fun,
play with other people,
work out,
dance,
meeting other people who play DDR,
enjoy the challenge of the game,
and be admired by others for their skill.”¹⁵

Lieberman therefore points to a whole spectrum of social interaction of exergames, which evolves around and potentially being influenced by their spatial setting. I can imagine a whole lot of design theory waiting to be applied in order to improve play experience of dance games. Walz has observed an inventory of traditional architecture and design formats, which would enable designers to program specific ludic practices.¹⁶ Lieberman hardly goes into more detail how different spatial set up may improve digital gameplay. She is more concerned to show how playing health games improves players' performance, collaboration and fitness in environments such as schools or work places.¹⁷ Being played during physical education hours, work hours or lunch break, dance games hardly seek to interact thoroughly with their built environment. They are mobile units, travelling and expanding within work or education institutions. They can claim to have a positive effect on people's health and foster social interaction. But exergames would hardly intend to alter its architectural or urban environment or claim for wider reforms.

Bogost points to the fact that boundaries between new interfaces and new innovative gameplay activities in digital games have hardly been explored to a full extent. As he puts the relationship between social environment and gameplay:

“When we play Wii Sports with one or two friends or family members, we recreate micro-environments that mimic the golf course or the bowling alley. One thing I notice in particular while playing these games is how I fill the time between turns: sometimes I watch, but just as frequently I read, or write email, or chat with other people in the room until, “Oh, is it my turn again?” This sort of social environment is very similar to that of the neighbourhood basketball court, the golf course, or the bowling alley.”¹⁸

¹⁵ Debra A. Lieberman, 'Dance Games and Other Exergames: What the Research Says' (unpublished report, University of California, 2006), pp. 1-5, p. 2.

¹⁶ Steffen P. Walz, *Toward a Ludic Architecture: The Space of Play and Games* (Pittsburgh, PA: ETC Press, 2010), p. 133.

¹⁷ Lieberman, 'Dance Games and Other Exergames', p. 3.

¹⁸ Ian Bogost, 'Persuasive Games: The Missing Social Rituals of Exergames', in *Serious Games* Source <http://seriousgamesource.com/features/feature_013107_exergaming_2.php> [accessed 12 April 2010]

As he points out, Guitar Hero or Wii Sports would be successful examples of what he considers as “ritual-bound physical games.” However, they would borrow their rituals entirely from other domains. Even successful exergames like Dance Dance Revolution (DDR) would offer only transitional examples of exercise rituals. Especially when being played on the domestic console, DDR would completely erase the complex social practices that would occur on a real basketball court. Lieberman seems to have the same mix between collaboration and competition in mind, when she emphasizes social interaction among peers in classic arcades or in virtual MUDs. Rather than mimicking traditional sports and their socio-spatial environments, Bogost claims to develop new ritual practises that would be unique to digital games. Bogost states exergames would have to simulate and create “social rituals that make us want to be physically active, whether alone or with others.”¹⁹ I like Lieberman’s picture of games acting as a springboard for social interaction outside the game situation for health content of particular problematic character. However, I also agree with Bogost that some health games may appeal wider if they develop social rituals that blur spatial boundaries of inside and outside the game. In the following, I will investigate how mobile health games seek to stimulate collaboration, especially since they seem to traverse private and public domain.

Mobile health games

Geri Gay is principle researcher of the first project within the US Health Game Research program that investigates the potentials of persuasive technology within “mobile health games”.²⁰ Elsewhere, she has looked into how context-aware mobile computing can facilitate social influence and in turn support behaviour change. Gay makes clear that user behaviour is merely one element of context awareness, which is closely related to other elements such as the physical environment. In order to understand how context-aware applications may stimulate behaviour change, Gay seeks to learn from how the physical shape of places and buildings influences human behaviour. She points to architectural theory in this context, in particular to the “configuration theories” and the “non-discursive techniques” to understand the complex interactions between the physical and virtual spaces.²¹ She explains Kevin Lynch’s work²² would have based urban design on a more experimental basis finding how people would navigate through the city by constructing an inner mental map. Furthermore, she points to Hillier and Hanson,²³ who would have been able to show how the connectivity and distances within specific layouts shape social characteristics and interaction. For Gay, the correlation between human behaviour and physical space is of interest as it may help to design virtual and hybrid spaces.²⁴ In the following, I will pay particular attention to how the

¹⁹ Bogost, 'Persuasive Games: The Missing Social Rituals of Exergames'.

²⁰ Cornell University, 'Mindless Eating Challenge: Persuasive Mechanisms in Mobile Health Games', in *Health Game Research* <<http://www.healthgamesresearch.org/grantees/projects/mindless-eating-challenge-persuasive-mechanisms-in-mobile-health-games>> [accessed 8 August 2011]

²¹ Geri Gay, *Context-Aware Mobile Computing - Affordances of Space, Social Awareness, and Social Influence* (San Rafael, CA: Morgan & Claypool, 2009), p. 9.

²² Kevin Lynch, *The Image of the City* (Cambridge, MA: MIT Press, 1960).

²³ Bill Hillier and Julienne Hanson, *The Soical Logic of Space* (Cambridge: Cambridge University Press, 1984).

²⁴ Gay, *Context-Aware Mobile Computing*, pp. 10 ff.

interaction between virtual and physical looks like and how such mobile health games seek to foster social influence.

Gay emphasizes numerous studies that render social influence crucial for motivation and behaviour change. Fogg and Eckles would have discussed findings on how individuals are having better results in quitting to drink or to smoke, losing weight, exercising, or even surviving cancer, when they are “grouped with peers”.²⁵ On that basis, Gay states that their project *Mindless Eating Challenge* (MEC) sets out to tackle children’s obesity through the use of mobile technology and “virtual support groups.” Its application features GPS and high-quality cameras. It puts the device in the centre of the action, implementing various functions such as email, scheduling, storing contacts, and way finding. Gay hopes that the technology behind MEC would provide the means for developers to explore further applications based on the concepts of Fogg’s persuasive technology, which I have discussed above. The system would have been build to encourage a richer interaction between users and public spaces with a particular focus on social facilitation.²⁶ Gay’s notion of mobile health games seems to blur the boundaries of Lieberman’s emphasis of games a safe, private and interactive learning environment by bringing it to use in a public realm.

Gay goes on explaining how MEC would rely on the concept of “accountability” through asking users to become responsible for the wellbeing of a virtual character. Its gameplay consists of caring for virtual pets, plants or other characters residing on users’ mobile phone. Earlier reincarnations of virtual pets such as the Tamagotchi would have shown that players would become particularly captivated by such simple game mechanics. The virtual character will ask players to fulfil certain tasks during the day and will reward compliance by slightly changing their appearance, adding or removing features and accessories (Figure 34.1). As Gay notes, the catch would be to base these tasks on a list of recommendations for better eating, being developed by experts from Cornell University’s Food and Brand Laboratory. A virtual pet will for instance ask players to “eat a hot breakfast, such as oatmeal”. Players would only get the full credit, if they prove their compliance to the system. They are therefore being asked to take a photo of their breakfast and share it with the system (Figure 34.2).²⁷ MEC explores various strategies presented by Fogg such as emotional support, feedback, and delivering health tips at the opportune moment. In my view, virtual characters in this case seem to act as a game-like mechanism that helps to implement and almost cover up all these motivational strategies.

²⁵ Gay, *Context-Aware Mobile Computing*, p. 52.

²⁶ Gay, *Context-Aware Mobile Computing*, pp. 52-3.

²⁷ Gay, *Context-Aware Mobile Computing*, pp. 52-4.

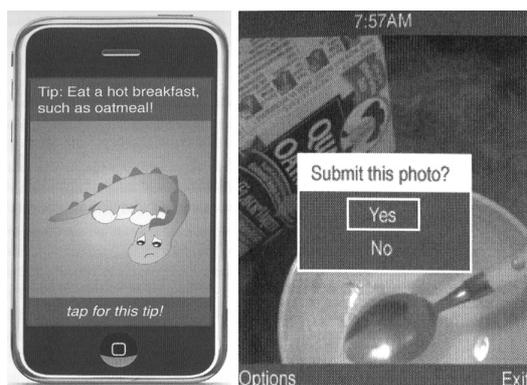


Figure 34 Cornell University, Mindless Eating Challenge, 2008.

In Mindless Eating Challenge, players take care of a virtual pet by following food and nutrition tips. Players have to demonstrate compliance by taking a picture and submitting it for review. In some version, players would compete with peers about their progress in the game.

Beyond the use of a virtual character, Gay points to the potentials for mobile health games when they encourage social interaction with a “virtual support group” of a public character. She mentions intrinsic motivators for behaviour change such as competition, cooperation, control, and recognition. As she notes, within MEC such motivators would be mediated and supplied by the system.²⁸ The social aspect in MEC’s gameplay activities include players comparing various depictions of their performances by sharing the shape and appearance of their virtual character with an online community. As Gay adds, players may compete against other users or collaborate with peers against other groups.²⁹ Looking closer into the social interactions, I may recall how the gameplay activities are based on experts’ recommendations for a healthy diet. Gay goes on that the feedback provided by the system to player’ compliance would be also based on a well-researched and validated recommendations from psychologists.³⁰ It is important to note that Gay seems to conceptualise the social interaction emerging from MEC to consist of a private and public function. On the one hand, there are personal instructions and rewards, which are being mediated to the player through the game’s virtual character. At the same time, MEC provides a public gameplay when it encourages interaction with peers in a virtual support groups and in real world locations.

It seems hard to indicate any form of collaborative play and learning in MEC that Lieberman has seen emerging from MUDs. In contrast, Gay highlights a system of experts’ diet recommendations, which is merely mediated through virtual storytelling. The public side of this mobile game foremost consists of competing on the best compliance to the tasks requested by nutrition experts. Whereas it seems reasonable to me to base eating recommendations and motivation strategies on research standards in order to secure the quality of health games, I wonder if MEC may benefit from more user-generated content, feedback and actual participation. Gay herself seems not entirely sure whether she should call MEC a “mobile phone-based application, or game”.³¹ Pressed to give estimation on how

²⁸ Gay, *Context-Aware Mobile Computing*, p. 54.

²⁹ Gay, *Context-Aware Mobile Computing*, p. 55.

³⁰ Gay, *Context-Aware Mobile Computing*, p. 56.

³¹ Gay, *Context-Aware Mobile Computing*, p. 52.

playful MEC is, I would answer with Zimbardo’s description of Fogg’s persuasive technology, which I have mentioned earlier. He called it a “behaviour modification program.” While working on important aspects and keywords, such initial projects of mobile health games in my view need to learn to interact with their users and physical environments.

Gay herself notes that the physical shape of locations would have been neglected by HCI research for years, which would have often heralded the “anytime, anywhere” nature of ubiquitous technology. She claims that further research on context awareness and behaviour change should become more alert to the particularities of specific locations in order to unfold its true potential.³² The stair climbing game *Monumental* that I have mentioned in my introduction seems a mobile health game, which actively integrates physical shapes of its environment to its game play activity. It uses the accelerometer of the iPhone in order to detect how many steps players climb over a certain amount of time such as a day, week or a month. It then links exercise in the physical world with a digital storytelling that is presented on the screen of the iPhone. *Monumental* simulates players’ progress with the equivalent of steps to be taken to climb what the designers claim “the world’s most exiting monuments such as Eiffel-Tower.” Payers receive virtual souvenirs as they are climbing stairs and get rewarded with a view from the top of the real world sites they have just climbed (Figure 35).³³



Figure 35 Me You Health, *Monumental* - iPhone App, 2011.

For the mobile health game “*Monumental*”, player’s smartphones track how many stairs they take during the day. Players then follow a virtual storytelling climbing the world’s “most iconic” monuments such as the statue of Liberty and competing with their friends via facebook.

Monumental is context-aware with particular regards to the physical shape of its potential play-grounds and is therefore in line with various mobile exercise games on the market, which make mainly use of today’s smartphones sensors to detect users movement and position changes.³⁴ Whereas *Monumental* focuses on topography regarding its context awareness, it also entails social interaction in its gameplay. Players can compete in their progress with their friends via facebook. To be clear, social interaction in *Monumental* is also

³² Gay, *Context-Aware Mobile Computing*, p. 59.

³³ Me You Health, Inc., 'Monumental - Free Stair Climbing iPhone App', in *Creators of Daily Challenge - Me You Health* <<http://www.meyouhealth.com/monumental/>> [accessed 3 March 2011]

³⁴ Knöll and Moar, 'On the Importance of Locations in Therapeutic Serious Games'.

reduced to competition stimulating compliance to in this case more stair climbing in one's everyday life. The social interaction as a mix of collaboration and competition takes place in between play sessions. It transgresses from the real world playgrounds – presumably rather dull office staircases – into a social networks.

Both mobile health games I have discussed in this section, do emphasize context awareness over interaction with social and physical context. I have shown how MEC does hardly encourage users to develop eating tips in collaboration with peers. It seems rather to organize the delivery of experts' recommendations in the opportune moment and place to be most persuasive. Both examples encourage behaviour change for individuals, who have already defined personal health goals such as climbing the stairs or improving one's diet. In my view, mobile health games have large potentials to expand their social interaction beyond mere competition and facilitation. In the following section, I will pay more attention to how health games may interact with to their urban context through fostering collaborative play.

CryptoZoo

Jane McGonigal likes to define Alternate Reality Games (ARGs) as “anti-escapist” games. Which would be designed to have an impact and potentially improve real life. She claims one may literally invent such games for every task one likes to get better in.³⁵ She also discusses a game-like application that comes close to the two mobile health games I have dealt with above. As she accounts, Nike plus would appeal to its users by opening up a task like running to a broader social context and meaning. As she points out, such a “game-like” environment would work as a combination of real time feedback and the promise of “online” experiences. For her, real world activities with virtual storytelling correspond to each other. Avatars, or virtual characters as I have shown for MEC, would reinforce positive experiences according to insights of behavioural psychology. At the same, such services would enable social comparison though connecting users with other users online. As McGonigal notes herself, such game-like applications would foremost motivate players, who are already active and healthy.³⁶ At the first sight, they seem very much in line with traditional sports, which, as a result also appealed to people already interested in healthy lifestyles.

McGonigal likes to see ARGs way more in the tradition of the New Games movement of the 1970s. Those would have set out to develop alternative sports and would have emphasised creative and collaborative play. One of two crucial messages of the New Games movement would have been not exclude anyone, because they are not good enough to play. And secondly, competitive gameplay should not be about winning, but about playing harder and longer in order to have more fun.³⁷ In my view, McGonigal's Mixed Reality Game CryptoZoo seems to illustrate that legacy particularly well. Developed in collaboration with the American Heart Association, the project aims for nothing less than inventing “the future

³⁵ Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World*, (London: Jonathan Cape, 2011), p. 125.

³⁶ McGonigal, *Reality is Broken*, pp. 158-63.

³⁷ McGonigal, *Reality is Broken*, pp. 142-3.

of physical activity” in order to make play and gaming a bigger part of how we take care of ourselves.³⁸ Physical exercise should become more fun, more social and better integrated into our everyday lives. CryptoZoo therefore mounts a gameplay that crosses the boundaries between social media and real world locations. On its website, players learn how to imitate the movements of so-called Cryptids in order to chase and spot them in their “natural habitat”. The latter move in specific manners: Some run only backwards, some would try to avoid the cracks on pavements or would jump over street benches in a certain way (Figure 36). Having learned these moves, players begin to spot and chase Cryptids in their neighbourhood. In turn, players discuss and share videos of their journeys, report and locate signs of Cryptids on Google Maps and plan upcoming journeys.

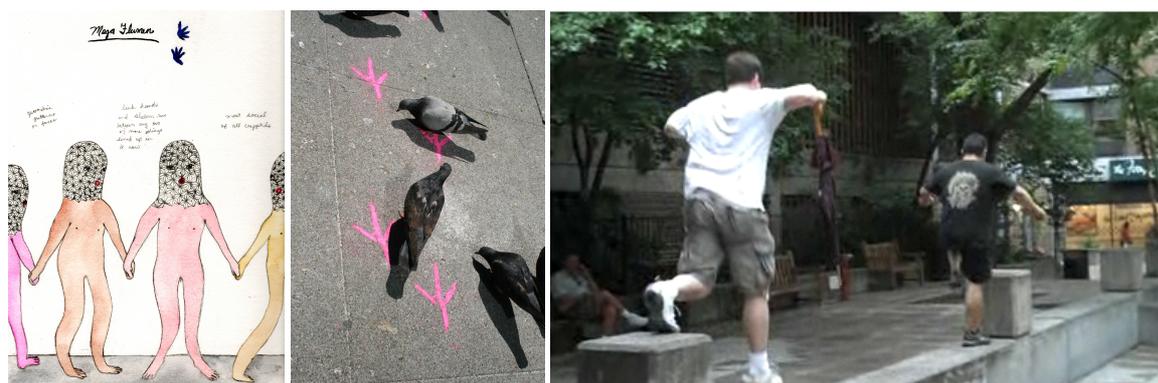


Figure 36 Jane McGonigal, CryptoZoo - Mixed Reality Game, 2009.

In the Mixed Reality Game CryptoZoo, players chase 13 Cryptids. On its website players learn how to imitate their movements such a moving sideways or avoiding the tracks on the pavement and how to find their tracks and spots.

McGonigal encourages players to create, train and show their own running styles and find appropriate spots in the streets. She indicates free running as a major inspiration and calls CryptoZoo a version of Parkour “for the rest of us.”³⁹ Feireiss has observed free running as a sportive engagement with urban topographies, in which free runners would playfully contest its spatial constraints. Free runners would strive to find the fastest and most direct manner in order to overcome obstacles in the built environment. Feireiss likes to contrast the figure of the free runner to that of the 19th century flaneur. Whereas the latter would have taken on a “detached and observant mode” in his journeys through the city, free runners would be active performers, who would be using the city scape as an ever changing stage, but also as a tool for “self improvement.”⁴⁰ Earlier in this text, I have described how the flaneur used drifts to escape from and protest against Haussmann’s Paris. I have compared them to the members of Klencke’s strolling clubs, who escaped the city to go for a walk in the park and prepare

³⁸ Jane McGonigal, 'Who invented CryptoZoo, and why? - CryptoZoo', in *CryptoZoo - a secret world of strange and fast-moving creatures* <<http://cryptozoo.ning.com/profiles/blogs/who-invented-cryptozoo-and-why>> [accessed 17 March 2010]

³⁹ Jane McGonigal, 'CryptoZoo - Behind the Scenes', in *Cryptzoo - A secret world of strange and fast-moving creatures* <<http://cryptozoo.ning.com/video/cryptozoeo-behind-the-scenes>> [accessed 30 January 2012]

⁴⁰ Lukas Feireiss, 'Urban Free Flow: The Individual as an Active Performer', in *Space Time Play - Computer Games, Architecture and Urbanism: The next Level*, ed. by Steffen P. Walz, Friedrich von Borries and Matthias Böttger (Basel: Birkhäuser, 2007), pp. 280-1.

themselves for a day in the office. I would like to state that all three figures – morning stroller, CryptoZoo player and free runner – use the city as a sort of training tool. Whereas Feireiss highlights free running as an individual and almost solitary activity, McGonigal – much in the tradition of Klencke’s strolling clubs - sees CryptoZoo as collaborative experience.

Ian Borden has observed the various relationships between the spatial practise of skateboarding, the body and the city. He points to the collective experience of skating on a ramp, which for him is ”a kind of informal competition among individuals, but [...] also a collaborative activity.”⁴¹ He describes the practice of skateboarding being performed individually, but in response to observing and learning from fellow skaters. It is important to note that the social interaction of skateboarding occurs as a mixture between collaboration and competition. Media would have played a key role in social interactions with skaters learning new tricks from endless hours of studying videos and photographs showing other skaters. His account on the grass root origins of skateboard fanzines and VHS rental services points to the important role media played in further developing Skateboarding as a spatial practise in itself, but also as a worldwide movement and market. I see the role of self-produced media that further advances specific styles and tricks in Skateboarding being followed up by the CryptoZoo website. It likewise hosts clips, pictures, sketches and maps in order to let participants’ share their running styles. In contrast to the mix between collaboration and competition Borden observes in Skateboarding CryptoZoo seems to emphasize entertainment, mock-fights and street performances. Collaborative games have to carefully balance these two poles of competition and cooperation. Indeed, McGonigal’s own claim to stimulate people’s creation of their own running styles may benefit from more competitive play. Participation, however, seems crucial to sustain collaborative games lasting appeal.

Borden sees skateboarding as a spatial practise that re-appropriates cityscapes in order to claim space for one’s body and wellbeing. Under the subtitle “Skate and Destroy”, Borden observes the physical traces skateboarding leaves behind when skaters are grinding their trucks on edges and street furniture. However, as Borden concludes, apart from these minor alterations, skateboarding would not attempt to modify city form in any substantial manner.⁴² Likewise, CryptoZoo hardly wants to alter the built environment. In fact, considering its chalk signs left on the pavement seems to come closest to any such attempts. Within skateboarding, Iain Borden likes to observe a particularly participatory practise, when users are building ramps and obstacles in a distinctive Do-it-Yourself manner. In contrast to what he calls monumental commercial skate parks that have mushroomed from the 1980s, many street skaters would have set a counterpoint with building and modifying temporary and almost organic constructions to skate on.⁴³ At first sight, CryptoZoo seems to have less radical approach than skateboarding, which has its own history of being banned from public

⁴¹ Iain Borden, *Skateboarding, Space and the City - Architecture and the body* (Oxford; New York: Berg, 2001), p. 124.

⁴² Borden, *Skateboarding, Space and the City*, pp. 208-11.

⁴³ Borden, *Skateboarding, Space and the City*, pp. 77-88.

spaces. Being sponsored by the American Heart Association, CryptoZoo is being in the centre of public health policies. McGonigal attempts to re appropriate everyday locations and routines in order to reinvent physical activity nevertheless seems far reaching. Earlier in her book, she makes a comment on the definition of games, that gives me a further hint on how to see ARGs interacting with their urban context. She emphasises Bernard Suits' definition of "Playing a game is the voluntary attempt to overcome unnecessary obstacles."⁴⁴ On that basis McGonigal concludes the following:

"Compared with games, reality is too easy. Games challenge us with voluntary obstacles and help us put our personal strength to better use."⁴⁵

Unlike the urban topography for free runners, or self built ramps for skaters, for McGonigal ARGs themselves become voluntary obstacles to play with and improve. The Mixed Reality Game – consisting of storytelling, game rules, and a website – seems to be taken on the form of temporary and mobile architectures intervening in to the urban fabric.

It is important to note that CryptoZoo does not consider *any* alteration of the built environment or construction of temporary structures. In fact, McGonigal's view reveals a restrained understanding of urban space, when she seems to categorise comparable activities and map them to corresponding spatial set ups. To make the most of a location in her view is to develop a game that can be played only there. In fact, even though McGonigal claims ARGs to have an impact on peoples' real life, she hardly considers material interventions to go along with ARGs. The following comment on the mobile game airport security (Figure 41), with which I will deal in more detail later, may underline this:

"One cannot opt out of security checks. But one can opt in to a game while being in them."⁴⁶

What seems to go through McGonigal argument in her book *Reality is Broken* is the motif of self-improvement with the help of games. I have shown earlier the ambiguity of self-improvement techniques, which tent to overemphasize individual responsibility for good health over discussing wider material and social change. However, within some sketches and videos of the game project CryptoZoo, I find a more convincing concept of collaborative health games to emerge. It is the Mixed Reality Game itself being seen as temporary structure or obstacle that is being built and sustained collaboratively. Possibly, a stronger emphasis on the spatial practises of modification and alteration of the build environment that I have highlighted for Skateboarding may stimulate the form of participation McGonigal strives for. In the next chapter, will discuss Situationist approaches, which would like to stimulate behaviour change and urban intervention through stimulating material and environmental awareness.

⁴⁴ Cited in McGonigal, *Reality is Broken*, p. 22.

⁴⁵ McGonigal, *Reality is Broken*, p. 22.

⁴⁶ McGonigal, *Reality is Broken*, p. 152.

Expressive

In the following I will observe how research on digital health games has only just begun to look into broader social and cultural implications. Discussing Lieberman's distinction between formal and informal set ups for health games, I will highlight the potentials for informal niches to be a test-bed for gameplay activities for more established health game practises. I will follow Ian Bogost's observation that videogames can act as a medium to express critic on social and political issues. He has pointed to the particular potentials for mobile persuasive games, from which basis I will speculate on how health games can express critique on wider public health issues. To this end, I will further investigate Situationist-inspired architects and writers, who have claimed urbanity to be foremost a state of increased social and cultural exchange. Lefebvre's notion of experimental utopias as architectural artefacts to express a possible other society will provide me with strategies for games to expressive games. Following Bogost, it may be such artistic practices of de-familiarisation – to accentuate the differences between simulation and real world – that promise to raise players' awareness of environmental influences on one's health.

Serious Games – Pledoyer for an informal context

In the same year Mike Webb works on Archigram's *Dreams Come True* project inviting people to escape from the boredom of their lives, entrepreneur Clark C. Abt explores how simulation and games can help education and training under the notion of "serious games". In 1970, Abt seeks to combine the best of both worlds: On the one hand, he seeks to improve education through the serious business of simulation, model making, and problem solving. At the same time, he hopes to include more people with the lightness, accessibility and entertaining qualities of games.⁴⁷ He states that "simulation games" would have proven successful in training for military, economy and education, since they would have provided a safe and cheap experimental environment. Within serious games, players could test potential consequences of decisions and behaviour, without risking the pain, and the financial or legal damage to be expected by errors in the real world. In his view, to implement simulation games into curriculums would bring education closer to the "real life". Students being trained by role-playing and simulating life, would be best prepared for their "real roles" in society.⁴⁸ No talk about escapism here, Abt emphasises transferring newly learned behaviour learned from a simulated (game) environment to behaviour in real life. As I have shown above, Lieberman seems to emphasize similar qualities for today's digital health games such as their inclusiveness and potentials for learning through providing a safe simulation environment.

Abt seeks to show how industry, government and educational institutions may improve their services by providing more inclusive, individually tailored content. He emphasizes that games could be evaluated for their particularly "cost-effectiveness".⁴⁹ Since training and education would become increasingly important for a highly technological society, Abt

⁴⁷ Clark C. Abt, *Serious Games* (New York: The Viking Press, 1970), p. 10.

⁴⁸ Abt, *Serious Games*, pp. 13-4.

⁴⁹ Abt, *Serious Games*, pp. 110 ff.

attests serious games a huge potential in areas such as political and social decision making, urban planning, management, as well as poverty, crime and health prevention.⁵⁰ Simulation gaming for him would help to cut costs, raise participation and acceptance by the largest number of people. Abt envisions a “player-citizens” and hopes for the “average educated” Man to gain a better understanding of political processes. As a result, game-informed and game-mediated political decision making for Abt would make riots and strikes obsolete.⁵¹ Abt’s speech on empowerment through education initially seems not too far away from Friedman’s claim to provide the appropriate amount of information to let city dwellers make their own lifestyle choices. However, Friedman insists that game theory was not to be applied to urban planning and political decision-making. Whereas for Friedman the right to choose his or her lifestyle was to remain with individuals, Abt emphasizes the benefits of serious games for large corporates and institutions to improve their processes.

Ian Bogost has pointed to some interests shared between Abt’s definition of serious games and today’s movement within digital serious games. The *Serious Games Initiative* would borrow its title from a report given by Ben Sawyer in 2002,⁵² which in turn would have originated in “conscious or unconscious” reflection to Abt’s book title *Serious Games*.⁵³ Bogost states that the Serious Game Initiative’s claim would read very similar to Abt’s emphasis on improving public services through simulation gaming:

“The goal of the initiative is to help usher in a new series of policy education, exploration, and management tools utilizing state of the art computer game designs, technologies, and development skills.”⁵⁴

For Bogost, the very notion of serious games seems often to be deployed in the service of established institutions such as governments, corporations and healthcare systems. He characterises large parts of today’s serious game practice as top down approach. Their designs would foremost follow the in his view simple task to transfer content of an established institution into a game context. As he puts it:

“Educational games translate existing pedagogical goals into videogame format; government games translate existing political goals in videogame form; health games provide doctors and medical institutions with videogame-based tools to accomplish their existing needs; [...]”⁵⁵

⁵⁰ Abt, *Serious Games*, pp. 119-20.

⁵¹ Abt, *Serious Games*, p. 125.

⁵² Ben Sawyer, 'Serious Games: Improving Public Policy through Game-Based Learning and Simulation' (unpublished thesis, Woodrow Wilson International Center for Scholars, 2002) as referred to in Bogost, *Persuasive Games*, p. 55.

⁵³ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), p. 54.

⁵⁴ Cited in Bogost, *Persuasive Games*, p. 56.

⁵⁵ Bogost, *Persuasive Games*, p. 57.

In 2004, the Serious Game Initiative launched the Games for Health Project funded by the Robert Wood Johnson Foundation. Its aim is to support efforts to use “cutting-edge games and game technologies to improve health and health care.”⁵⁶ The Project organises the annual Games for Health Conference, which has developed into a platform for designers, business developers, policy makers and increasingly so for researchers in the field.

As mentioned above, the Health Game Research project seeks to provide a further forum focussing on the “scientific side” of health game design since 2009. The Pioneer Portfolio of the Robert Wood Johnson Foundation, which seeks to support particularly “innovative” projects in healthcare, funds it.⁵⁷ I may note in passing that the two big initiatives for digital health games are being funded by the same organisation, which is the largest philanthropy devoted to public health in the U.S. and closely related to the biggest health products maker in the world.⁵⁸ As mentioned above, the Health Game Research project claims to provide scientific leadership and resources. Its overall focus seems less to interrogate cultural and political implications than to discuss and establish quality standards. Consequently, it seeks to help implementing the new medium into existing structures of public health care. At first sight, Bogost’s critique on serious games to foremost express views from already established institutions and corporations seems convincing. In the following, I will further interrogate health game research before I will move on discussing what Bogost presents as an counter-cultural serious games movement.

First, I will show how current digital health game practice relates to the wider cultural and urban strategies discussed above. I will focus on how designers and researchers seek to stimulate health related behaviour change and how they address urban context to do so. As shown above, Lieberman as Abt emphasizes the inclusive and far reaching effect of digital games. According to Lieberman, they would be played by a broad spectrum of people, who otherwise might be hard to reach or would be “unreceptive” to certain topics and activities. She welcomes a variety of outcomes that have been aimed for by serious games such knowledge gain, skill development, health behaviour change, medical diagnosis and treatment, increasing physical activity, as well as social skills, work collaboration, civic engagement, political campaigning, recruitment and persuasion and attitude change.⁵⁹ I may note how Lieberman sets such outcomes clinically apart from each other. Interactive, digital games, she seems to suggest, should attempt to *either* stimulate health-related behaviour change *or* better working conditions, *or* political campaigning. Unlike 1920s avant-garde life reformer, who have been envisioning healthy, socialist and anti-urban modern living,

⁵⁶ The Games for Health Project, 'The Games for Health Project', in *Games for Health - Using Videogames and Videogame Technologies to Improve Health & Healthcare* <<http://www.gamesforhealth.org/index.php/about/>> [accessed 29 July 2011]

⁵⁷ Health Game Research, 'Health Games Research - About us', in *Health Games Research - Advancing Effectiveness of Interactive Games for Health* <<http://www.healthgamesresearch.org/about-us>> [accessed 21 February 2010]

⁵⁸ Wikipedia, 'Robert Wood Johnson Foundation', in Wikipedia, the free encyclopedia <http://en.wikipedia.org/wiki/Robert_Wood_Johnson_Foundation> [accessed 29 July 2011]

⁵⁹ Lieberman, 'Designing Serious Games for Learning and Health', p. 119.

Lieberman seems far away from claiming any wholistic life reform approach for serious games.

This is not to say Lieberman excludes the possibility for health games to stimulate wider reform. For her, to be aware of the context for game play is crucial to successfully design and implement serious games. Due to today's fast developing game technologies, formats and genres, she advises designers to analyse closely potential target groups and settings for the game to be played. She draws our attention to the contrast between "formal" and "informal" learning environments. Whereas formal learning would involve assignment, assessment and a specific curriculum chosen for the player by the educational institution, informal learning would take place during leisure time and would go beyond mere knowledge gain. Games in formal environments such as schools, worksite training centres or health care education centres would have to be aligned with the curriculum standards and goals of the institution. As they may support or even supplement more traditional methods of training and instruction, games for learning in this context must be evaluated and assessed before being implemented. Their outcomes should be measurable and become part of a dynamic feedback system integrating assessment and learning into a continuous process.⁶⁰ Health games being played in education or health care training, as she suggests, would be neither the place for experiments nor to stimulate a discourse on wider social or political reform. There would be well-established knowledge about learning and behaviour change, which may be used to make health games a further and more effective tool in existing public health education.

In contrast, health games used in an informal context could also intend to change attitudes, skills, beliefs and behaviour. In her view, since informal health games would be "supplemental activities" they could hardly do any harm to users. As long as they would be tested to avoid violent, biased or inaccurate scenarios, even games of little educational value or health impact would at the very least expose players to learning concepts. They may be "valuable reminders" about healthy lifestyles and behaviour.⁶¹ She points out that since informal health games are competing with many other leisure-time activities, they must be highly entertaining and / or personally useful to the target group. Since they do not have to be aligned with specific curriculums and institutions, they may address smaller population groups and could come up with more tailored content. Hence, designers could experiment with a wider range of issues to be addressed. They would have more opportunities to play and test around with social interaction or all other parameters that would make games "fun, edgy, and exciting to play."⁶² For Lieberman informal health games seem to be the experimental playground of the field. It is precisely such informal setting, from which I am convinced that the more regulated forms of health games can get new inputs and inspiration. In order to throw more light on how such informal and formal set ups may interact, I will discuss concepts of post-war architects in the following, who claimed to reform cities from within.

⁶⁰ Lieberman, 'Designing Serious Games for Learning and Health', pp. 119-25.

⁶¹ Lieberman, 'Designing Serious Games for Learning and Health', p. 124.

⁶² Lieberman, 'Designing Serious Games for Learning and Health', p. 126.

Creative Mouldering - Hundertwasser's Mould Manifesto

As I have mentioned earlier in this text, from the 1960s functionalist cities have been increasingly criticised and new reform attempts ranged from housing, increasing participation in planning, over reforms in agriculture, recreation and wellbeing. A whole generation of architects wanted to replace earlier avant-gardists' visions of what they considered anti-urban living with a new emphasis on urban interventions. Indeed, whether more mainstream planners or countercultural activists, all seemed to agree that it were the cities, where things needed to be changed.⁶³ Yet, especially what was "urban" and what forms and theory should be entrusted with its realisation was controversially discussed.

Friedensreich Hundertwasser's "Mould Manifesto" may indicate a vision in which nature radically re-enters the urban environment. In a sanitized city, Hundertwasser seems to suggest, to live healthily is to get (re) engaged with nature, mud, and bacteria. Claiming for "creative mouldering" as an artistic practice, which was to alter the clean and geometric environments of the post war period, he reformulates modernists' claims for individual life reform. As I will show, Hundertwasser substitutes 1920s claims for sports and personal hygiene with his call for lifestyle choices such as walking barefoot or eating raw food. More than Hundertwasser's own designs or his list of healthy buildings, I will highlight the artistic practise of creative mouldering. It may set the tone for a spatial practise of digital health games, which emphasizes interaction with daily environments as key to support behaviour change.

In 1958 Friedensreich Hundertwasser red out his *Mould Manifesto* in the abbey of Seckau in Austria.⁶⁴ He states that those uniform, rationalist apartment houses built for the masses in post war re urbanisation would have turned into inhuman and uninhabitable places. Hundertwasser criticises foremost Le Corbusier's geometric measure systems and "architecture of the ruler" as simply being criminal and agitates against the latter's tabula rasa approach.⁶⁵ Hundertwasser does not specify such modern architecture would cause physical harm to its inhabitants. Modern cities would have become "morbidly sterile" and the whole culture of mass consumption could only dwell a "comfort-loving, brainless mass ant".⁶⁶

⁶³ See for instance the comments by Peter Crump, who would have described himself as "anarchist" in the 1970s and yet did projects in a distinctively urban context such as Street Farmers. He notes that living in a commune was for him just a "horrible experience" and after all people would live in cities. Therefore projects would have to be relevant for the city. From my own notes of Peter Crump in conversation with Mark Cousins and others, 'Volume 24 Roundtable: Counterculture?', in *AA school of architecture - lectures online* <<http://www.aaschool.ac.uk/VIDEO/lecture.php?ID=1339>> [accessed 20 September 2011]

⁶⁴ Friedensreich Hundertwasser, 'Verschimmelungs-Manifest gegen den Rationalismus in der Architektur', in *Programme und Manifeste zur Architektur des 20. Jahrhunderts*, ed. by Ulrich Conrads, 2nd edn (Basel: Birkhäuser, 2000), BAUWELT FUNDAMENTE, 149-52. Translations are taken from Friedensreich Hundertwasser, 'Mould Manifesto against rationalism in architecture', in *Programs and manifestos on 20th-century architecture*, trans. by Michael Bullock (Cambridge, MA: MIT Press, 1970), pp. 157-60.

⁶⁵ Hundertwasser, "Mould Manifesto", p. 161.

⁶⁶ Hundertwasser, "Mould Manifesto", p. 158.

Hundertwasser seems more concerned with the mental harm caused by a purely rationalist architecture. For him, the old slums and informal living areas would have done harm to the body, but the new apartment houses, though ostensibly planned for man, would “perish” its soul and mental health. In Hundertwasser’s view, “material inhabitability” of the slums was to prefer to “moral inhabitability” that emerges from utilitarian architecture. Such critique seems to echo Häring’s agitations against geometric forms, which Joedicke has observed as a main theme in his earlier writings of the 1920s.

In 1958, Hundertwasser claims planners and architects including those concerned with peoples’ health should return to the “principle of slums”. It would be their wildly proliferating architecture to be taken as a point of departure for healthy environments, not the functionalist cities.⁶⁷ In later extensions to the Mould Manifesto, Hundertwasser lists a few examples of what he considers as contemporary “healthy architectures.” Such would include buildings by Gaudi in Barcelona, certain Art Nouveau buildings and the Ideal Palace by postman Cheval.⁶⁸ As McDonough accounts the ideal palace was being built up over decades by adding stones to its structure, which the postman found on its daily tour. The ideal palace would have been widely admired by the surrealists and would have been influential on the Situationists approach to architecture (Figure 37).⁶⁹ I may take the latter project as an illustration for creative mouldering as a creative and constructive process.



Figure 37 André Breton at the Palais Idéal, 1931.

The postman Cheval built up his Ideal Palace by picking up stones on his daily route and adding them to the structure. Whereas the construction inspired Surrealists and Situationists for its dream-like “architecture of disorientation”, Hundertwasser included it to his list of “healthy architectures”.

Earlier in his manifesto, he has echoed Häring’s claims for more participation in the building process. In Hundertwasser’s view, urban dwellers would only become “critical-creative” human beings, when they embody the architect, bricklayer and occupant in one person.⁷⁰ For Hundertwasser, it was artistic and spatial practises rather than ready-made architecture that

⁶⁷ Hundertwasser, “Mould Manifesto”, p. 157.

⁶⁸ Friedensreich Hundertwasser, 'Verschimmelungs-Manifest', in *KunstDirekt.net* <<http://www.kunstdirekt.net/kunstzitate/bildendekunst/manifeste/hundertwasser1.htm>> [accessed 21 September 2011]

⁶⁹ Tom McDonough, 'Introduction', in *The situationists and the city*, ed. by Tom McDonough (London: Verso, 2009), p. 6.

⁷⁰ Hundertwasser, “Mould Manifesto”, p. 159.

were to help changing lifestyles. To this end Hundertwasser calls industrial production to help:

“In order to save functional architecture from moral ruin, a disintegrating preparation should be poured on the clean glass walls and smooth concrete surfaces, so that mould can settle on them. It is time industry recognized its fundamental mission, and that is: the production of creative mould!”⁷¹

It is worth quoting this claim in full length, for it sets a powerful tone for today’s multi media applications, which would not only augment but also interact with their material environment. I am fully aware that Hundertwasser’s manifesto seems to renew a traditional avant-gardist claim for holistic life reform. One may well argue it merely substitutes some modernist’s focus on sports and hygiene with his environmentalist agenda of eating raw food and walking barefoot. On the one hand, it emphasises a sort of liquid and pervasive technology interacting with space, the city landscape and daily objects. I therefore like to read Creative Moulding as an artistic and creative process with a life reform agenda. What is more interesting about it, seems to me that creative moulding embraces advanced technology – multimedia or chemical substances - in order to make aware of “unhealthy” built environment and help to transform them.

Lefebvre’s experimental utopias and life reform

Henri Lefebvre has been seen as an influential critic on urbanism and the functionalist city in particular. As Kofman and Lebas observe, Lefebvre would have become highly influential on Situationist thinking, but also would have reached a wide public including the very same technocrats he criticised.⁷² I will focus on two aspects in his writings, which may throw more light on health games as expressive spatial practise. First, his emphasis on the everyday life as a place for reform anticipates later practices of urban drifting and urban geography. Second, I will discuss the role of what he has framed as “experimental utopias” to stimulate social and cultural progress. Having seen Constant’s *New Babylon* as a principle to achieve a new society by visualizing the possible, the unusual and unfamiliar, Lefebvre’s “differential spaces” for me seems to lay ground for more recently observed “procedural rhetoric” in videogames. I will show such practices to stimulate behaviour change through colliding experimental simulations with real world situations.

For Lefebvre, the functionalist city’s zoning system, which distinguishes work, recreational and mostly suburban living areas, excludes a majority of citizens from participating in cultural and political exchange. He points to the loss of historical city centres, to which inhabitants - once deported to the suburbs - would be only allowed to come back as

⁷¹ Hundertwasser, “Mould Manifesto”, p. 160.

⁷² See Eleonore Kofman and Elizabeth Lebas, 'Lost in Transposition - Time, Space and the City', in *Writings on Cities*, ed. by Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996), pp. 3-60, pp. 13, 35.

“dispossessed tourists”.⁷³ Lefebvre stresses the necessity to overcome the separation between town and country. For him, the on going process of urbanisation may lessen the opposition between the town and the country since city centres would have expanded into the countryside. However, the difference between “urbanity” and “rurality” would be increasingly accentuated. The concept of centrality would have remained throughout the process of industrial urbanisation and would shift towards more subtle forms of “domination and exploitation”. Cities would become the centre of decision-making, commerce, information and distribution networks. He claims for a re-appropriation of city centres and calls for renovated and differentiated, even “mobile” centralities, freed from the exclusive degradations of the functionalist city.⁷⁴ For Lefebvre, urbanity must be constantly re-invented, which is echoed in Sieverts’ claim for a constant reformulation of the “urban” as a form of cultural exchange in today’s “post-urban” and decentralised city regions.

Lefebvre stresses that urban culture and lifestyle itself are crucial for social reforms, but also peoples’ wellbeing. In his “The Right to the City”, he claims that everyone should be able to participate and access urbanity in whatever new forms of centralities may emerge. Industrial capitalism would have fragmented urban space and the principle of the functionalist city would largely help that process. Affiliating distinctive usages such as work or leisure to specific places would have the overall effect of homogenizing and codifying human behaviour within these areas. As a result, modern cities would lack of diversity and controversy and therefore lack of urban culture.⁷⁵ Monotone and overly structured cities may well serve its inhabitants with basic needs, but would fail to provide a place to please desires. As he puts it:

“As a place of encounters, focus on communication and information, the urban becomes what it always was: place of desire, permanent disequilibrium, seat of the dissolution of normalities and constraints, the moment of play and the unpredictable.”⁷⁶

For Lefebvre, “urban form” may hardly be defined on a specific morphological basis. It would be better grasped as a mental and social form - one of simultaneity, of gathering, convergence and encounters.⁷⁷ Urbanity would be a mode of cultural exchange rather than a question of population densities and building heights. To create urbanity must not be left to technocrats, but would have to be foremost the realm of poets and artists. In its current state, Lefebvre sees people being deprived of their “anthropological needs” for creativity, for information, and for play. Lefebvre seems close to Hundertwasser’s statement on the morbid sterility of rationalist cities, which would be dangerous for peoples’ mental health. Yet Lefebvre pays way more attention to the city’s effect on the human body. For him, new urban

⁷³ See Kofman and Lebas, 'Lost in Transposition', p. 31.

⁷⁴ Henri Lefebvre, 'The Right to the City', in *Writings on Cities*, ed. by Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996), pp. 61-181, pp. 119-21.

⁷⁵ Lefebvre, 'The Right to the City', p. 127.

⁷⁶ Lefebvre, 'The Right to the City', p. 129.

⁷⁷ Lefebvre, 'The Right to the City', p. 131.

projects would bring to the front a “polyvalent, polysensorial urban man.”⁷⁸ For Lefebvre, to reinvent urban forms was not merely a political imperative and intervention. It was crucial to serve peoples’ happiness and wellbeing.

In order to invent new urban forms, Lefebvre calls for a close investigation of spatial practices in an everyday environment. Kofman and Lebas point to a wide interest in the everyday, which Lefebvre would have shared with various sociologists and philosophers from the late 1960s.⁷⁹ Lefebvre considers the understanding of how existing urban space influences one’s chances and wellbeing as key to social reform. He insists that spatial practices in turn may have a decisive role in social reform. In his view, that was a lesson to be learned from Russian constructivists of 1920s and 30s: New social relationships would call for new spaces and vice versa.⁸⁰ For Lefebvre, the everyday life was not only the place for resistance, but also the place for radical change. I will show in more detail later how Situationist practices such as urban geography and drifting were to make aware of such environmental circumstances, but were to enhance peoples’ everyday life. In the following I will spur how Lefebvre’s notion of experimental utopias attempted to stimulate behaviour change.

As shown above, Utopian storytelling has embraced the city as part of its rhetoric ever since. Lefebvre’s notion of experimental utopias aims to increase the impact of utopian thinking on the real life. He describes “transduction” as an intellectual operation that would go beyond classical forms of modelling and simulation. It would be motivated from real problem and would elaborate a theoretical and yet possible object based on information retrieved from the city. He therefore hopes to engage utopian thinking in a constant feedback between conceptual framework and empirical observation. Transduction, he claims, would induce rigour to invention and knowledge into utopian storytelling. It would provide planners, sociologists, philosophers, architects and policy makers with a tool that gives shape to specific phases in their theoretical discourse. “Experimental utopianism” would imagine and visualize the possible, formerly not being conceived within traditional frameworks. In turn, it would allow investigating their implications on the real world.⁸¹ Technology would play an integral role in revealing possible objects. As Lefebvre puts it, “technological utopias” would provide a “sort of computer simulation of the future,” which would help to show the possible in the framework of existing policies.⁸² So far, I have presented Lefebvre’s experimental utopias foremost as a planning tool that seeks to enable professional planners to collaborate with people from different disciplines. In the following, I will speculate how Lefebvre’s experimental utopias may be used by city-dwellers.

⁷⁸ Lefebvre, 'The Right to the City', pp. 147-9.

⁷⁹ Kofman and Lebas, 'Lost in Transposition', p. 41.

⁸⁰ Henri Lefebvre, *The Production of Space*, trans. by Donald Nicholson-Smith (Oxford: Blackwell, 1991), p. 59.

⁸¹ Lefebvre, 'The Right to the City', pp. 151 ff.

⁸² Lefebvre, *The Production of Space*, p. 9.

Above, I have dealt with Lefebvre's analyses of "spatial practice" under the given social and political system. He distinguishes two more areas of interest in the science of space. Next to "representations of space", in which scientists, planners and technocrats would conceptualize, discuss and control space in any society, he highlights "representational space". The latter would belong to inhabitants and to those artists, writers and philosophers, who would attempt to purely describe the world around them. Representational space would be directly lived through its associated images and symbols. Even though it would be a dominated and passively experienced space, our imagination nevertheless would seek to change and appropriate it. It would "overlay" the physical space and would make symbolic use of its objects.⁸³ Lefebvre wonders about the majority of users, who would silently accept that spatial practice in general and its product the functionalist city in particular leaves them with only this tiny rest of possibilities for change. On a less pessimistic standpoint, he likes to see contradictions revealing themselves within this homogeneous space of the functionalist city. What in his view can be only described as anti-urban would bear a kernel of urbanity within itself. Thus merely would need to be reformulated. For him, the possibility of "differential spaces" emerges *from within* the current state of affairs. For him, differences and peculiarities need to be accentuated in order to push forward urban culture and broader life reform.⁸⁴ Whereas in *The Right To The City*, Lefebvre claims for simulations and "experimental utopias" to reveal possible objects in town planning, to me, in *The Production of Space* he seems to specify that users to get involved, too.

Kofman and Lebas point to Lefebvre's belief in what they call "concrete utopias" as a method to support people re-appropriating and transform daily routines. For Lefebvre, Constant's *New Babylon* would have been such a method to attain the impossible through the possible. Constant would have been a leading exponent of a modern utopian. He would be seeking reforms in the real world, but at the same time would have distanced himself as an abstract dreamer.⁸⁵ Marc Wigley describes Constant's *New Babylon* as it first appeared in an exhibition in 1959 as a set of large, well-crafted architectural models showing different sectors of what Constant called the city of the future. It envisions a city of fully automated machines, which are hidden in the ground while taking care of all work. As a result, all inhabitants would spend their time drifting through the vast interior spaces, which structure would be suspended in the air. Wigley accounts that these spaces were all interlinked in a labyrinthine network that would spread across the whole surface of the earth in the form of one immense building. He highlights *New Babylon* as one seemingly infinite playground, in which occupants can constantly arrange and re-arrange their sensory environment (Figure 38). They may redefine every micro space within the sectors according to their individual needs and desires. In a society providing its citizens with endless leisure time, Wigley states, for Constant workers would have become players and architecture would be "the only game in town".⁸⁶ *New Babylon* in this light seems a massive contrast to the austere post-war city

⁸³ Lefebvre, *The Production of Space*, p. 39.

⁸⁴ Lefebvre, *The Production of Space*, pp. 51-2.

⁸⁵ Eleonore Kofman and Elizabeth Lebas, 'Recovery and reappropriation', p. 88.

⁸⁶ See Mark Wigley, 'Paper, Scissors, Blur', in *The Activist Drawing - Retracing Situationist Architectures from Constant's New Babylon to Beyond*, ed. by Catherine de Zegher and Mark Wigley

and the promise of a technologically empowered other life through which Constant wanted to influence the real life environment.

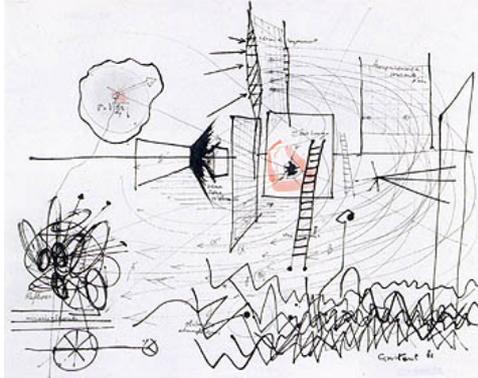


Figure 38 Constant Nieuwenhuys, New Babylon - Early sketch, c 1949.

Constant contrasted the health orientated functionalist city with a vision of an infinite playground. Stimulating home to a restless homo ludens, who would constantly re-arrange his environments according to his needs and wishes.

Kofman and Lebas note that Constant himself insisted New Babylon to be a mere visualization of the future city. New Babylon may come true *after* the revolution of the everyday has taken place, but it may also have triggered an impulse in a certain direction.⁸⁷ Lefebvre would have seen Constant's New Babylon as a valid principle of re-appropriating and recovering a sense for the body, pleasure and wellbeing, which would have gone lost in the functionalist city. For Lefebvre, concrete utopias would have been a "ray of hope" that advanced technologies could empower liberation.⁸⁸ In Kofman's and Lebas' notion of concrete utopias, Constant seems to me as a serious game designer. From the 1950s, he creates models, drawing and installation to express a possible world, which only incidentally features a homo ludens. Its playful character set aside, New Babylon was to stimulate behaviour change in the real life.

Wigley points out that New Babylon was meant as a multi-media project, in which the audience should be able to interact with "the future city" by the means of architectural models, projector installation, photographs and drawings.⁸⁹ In a 1966 experiment in the Rotterdam Building Centre, Constant goes a step further in his experiments to stimulate behaviour change. As Sadler puts it, in a plan for a temporary exhibition, Constant and his design team contemplated on a labyrinth that would fully test the body and its senses. In his view, this experiment may well be called "affective architecture". Its rooms would expose visitors to sounds, colours, smells, and in some case would even compress visitors so that they would have to crawl their way (Figure 39). As Sadler notes, Constant would have welcomed any disorientation that might have been caused. In fact, he would have seemed disappointed to find that their behaviour remained as he put it conditioned and rational. In Sadler's view, such architecture working with the body and sense would tend "to bully as

(New York: The Drawing Centre, 2001), pp. 27-56, p. 27.

⁸⁷ Kofman and Lebas, 'Recovery and reappropriation', p. 88.

⁸⁸ Kofman and Lebas, 'Recovery and reappropriation', p. 89.

⁸⁹ Wigley, 'Paper, Scissors, Blur', p. 27.

well as encourage” its users.⁹⁰ Such affective installations go beyond educational simulation gaming, and indeed the virtual rhetoric of New Babylon. Affective architecture was on its way to become a medium that stimulates physical and social activities on a whole new technical level. Despite all similarities in their appearance, while I have dealt with the Play Houses in Blackpool’s Pleasure Beach (Figure 13.2) as an urban strategy to health reforms as part of Epidemic Entertainments, the Rotterdam Experimental Studio is way more serious. It is an isolated set up that experimented with behaviour change apart from any context.

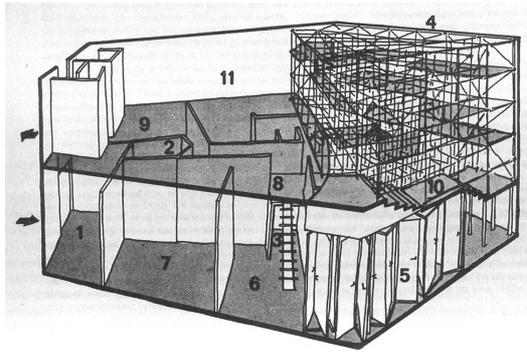


Figure 39 Constant Nieuwenhuys, Experiment Studio Rotterdam, 1966.

With this set up Constant wanted to test his theories of direct sensory stimulation through architecture. The areas were designated 1, documentation room, 2, sound room, 3, bending-over room, 4, metal space structure, 5, door labyrinth, 6, canary floor, 7, mirror room, 8, crawling hallway, 9, smelling room, 10, module hallway, 11, workshop.

For Sadler, the Rotterdam Experiment shows a grade of tactility and sensory stimulation that could take all comparison to consuming Ecstasy.⁹¹ In my view, Constant’s affective architecture and multi-media firework comes closer to a pill that - once swallowed - would unfold its psychedelic and affective sensations. The Rotterdam Experiment explores an ubiquitous technical and biological environment that pervades the human body in order to stimulate behaviour. I have criticised what Fogg describes as “persuasive technology” or as it may rather be called “pervasive technology” for cutting short conscious learning and reflection. Likewise, visitors of the Experimental Studio were hardly invited to question or reflect upon wider social and political circumstances. Affective architecture could only hope to cause behaviour change retrospectively. In order to get expressive, it would need the background of the ordinary everyday life. Lefebvre’s claims for differential spaces as temporary simulations of other worlds in contrast to everyday life inspire to see Constant’s experiments on affective architecture as like-minded multimedia rhetoric. I am convinced the more experimental simulations are in the sense that they interact with their environment, the more they may make people aware of other possibilities within their lifestyle. Through being exhibited, being interacted and “played” with, experimental utopias can express possible and other lifestyle options.

⁹⁰ Simon Sadler, *The Situationist City* (Cambridge, MA: MIT Press, 1998), p. 149.

⁹¹ Sadler, *The Situationist City*, p. 151.

Persuasive Games

Ian Bogost observes as “procedural rhetoric” a new type of persuasive practise at work in artefacts like videogames.⁹² He points out that common parlance would see procedures often as being something official, bureaucratic, and static. People would receive procedures even more restrictive when they have to interact with computers instead of human beings. As he points out computers would be often thought of as frustrating and limiting, because they would be programmed to execute “simplistic” procedures. Such procedures would not be inherent to media technologies, but would result from the common practise to buy off the shelf software rather than commissioning custom built solutions.⁹³ In general, procedural representation would stand for the concept to explain processes with other processes. In other words, it would explain an action by a chain of interrelated actions in order to express a theory about how certain things work. Since computers can simulate and repeat such sub-proceedings way more often and precise than human agents, they would be particular suited to procedural expression.⁹⁴ Bogost therefore seems much in line with Fogg, who also points to computers’ ability to deliver repetitive, perseverant, personally tailored and positive messages as a key to behaviour change. However, Bogost highlights “procedurality” as a fundamental notion of authoring processes.⁹⁵ He therefore seems way more concerned with revealing how persuasive technology is being used, by whom and for which reasons.

Bogost develops the notion of “rhetoric” from the classic form of persuasion that has appeared in Plato’s Apology - oral defence speech - in Ancient Greece. He observes how such direct forms of persuasion - taking place within the confines of the oratory – would have developed to more extended forms of expressing arguments through all sorts of media including literature, sculptures or painting. Nowadays rhetoric would intend expression beyond direct persuasion or defence and would seek to provide a possibility space of interpretation. Its qualities would be discussed in terms of elegance, clarity, and creativity. Bogost emphasises theories of rhetoric that indicate its capability to facilitate identification as crucial task to bridge the gap between author and recipient in communication. Such an understanding would include media beyond verbal and written arguments.⁹⁶

Bogost goes on speculating how such extended forms of rhetoric may look like and discusses the notion of “virtual rhetoric”. Bogost is aware of critique that may see any attempt to extend rhetoric beyond the realm of language as a paradox. For many people, to develop an argument, to provide pros and contras and bring them to a persuasive conclusion seems to be opposed to the affective and emotional qualities of pictures. Bogost points to the famous 1975 Greenpeace attempt to disrupt the Soviet whaling vessel Vlastny by positioning boats with activists between harpoon and whale. Even though, this intervention did not have the intended immediate effect, it would have been claimed as success after all. The immense

⁹² Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), p. 3.

⁹³ Bogost, *Persuasive Games*, p. 7.

⁹⁴ Bogost, *Persuasive Games*, p. 10.

⁹⁵ Bogost, *Persuasive Games*, p. 12.

⁹⁶ Bogost, *Persuasive Games*, pp. 15-20.

media coverage with spectacular pictures of the campaign raised the global interest in the particular topic. Bogost makes an interesting note to separate his own understanding of virtual rhetoric from what he calls “situationist-style interventions”. Working with the affective power of pictures, there would be no visual rhetoric at work in the true sense of the word. Apart from provocation, the pictures of the Greenpeace activism would not have sought to make arguments for policy changes. In contrast, Bogost suggests visual rhetoric may well express artistic and philosophical arguments. He likes to see rhetoric as a general field of inquiry that can apply to various forms of media.⁹⁷ I have shown above how the two Situationist-inspired projects sought to sparkle an array of provocations and behaviour change. In my view, New Babylon expresses rhetoric of the future city by setting its multimedia simulation in contrast to the real world. Likewise Constant’s Rotterdam experiments on affective architecture seem to short cut verbal, written or visual rhetoric by directly addressing all the senses. I have observed how such temporary installations as affective rhetoric at work stimulation reflection on its sensory experience retrospectively.

Bogost goes on distinguishing what he sees as digital rhetoric, as a sophisticated form of “procedural authorship”. Procedural rhetoric could not be achieved through the construction of word or images, but through the authorship of rules of behaviour.⁹⁸ One of Bogost’s examples may help to illustrate the experience for players. Within *The McDonald’s Videogame*⁹⁹, players take on the role of an imaginary McDonald’s executive. Managing various fields simultaneously - from the company’s production environment to lobbying and marketing, he has to take various business choices. More importantly such choices however would represent difficult moral decisions. Throughout the gameplay, players would have to trade off strategies to increase profit with plenty negative consequences for the social and ecological environment and for customers’ health. Within the game, however players would get away with questionable decisions by bribing experts and lobby groups or launching marketing campaigns (Figure 39). The procedural rhetoric that is mounted then would be to point to a necessity of corruption in the global food business. The game would put the player in a context of game rules, in which he or she can only succeed by following the exact procedures the authors want to criticise.¹⁰⁰ In this case, procedural rhetoric expresses critique by authoring a dystopian game world, with which players interact in a certain way.

⁹⁷ Bogost, *Persuasive Games*, pp. 22-4.

⁹⁸ Bogost, *Persuasive Games*, p. 29.

⁹⁹ Molleindustria, 'The McDonald's Videogame', in *Homepage Molleindustria* <<http://www.mcvideogame.com/index-eng.html>> [accessed 16 October 2011]

¹⁰⁰ Bogost, *Persuasive Games*, pp. 29-31.

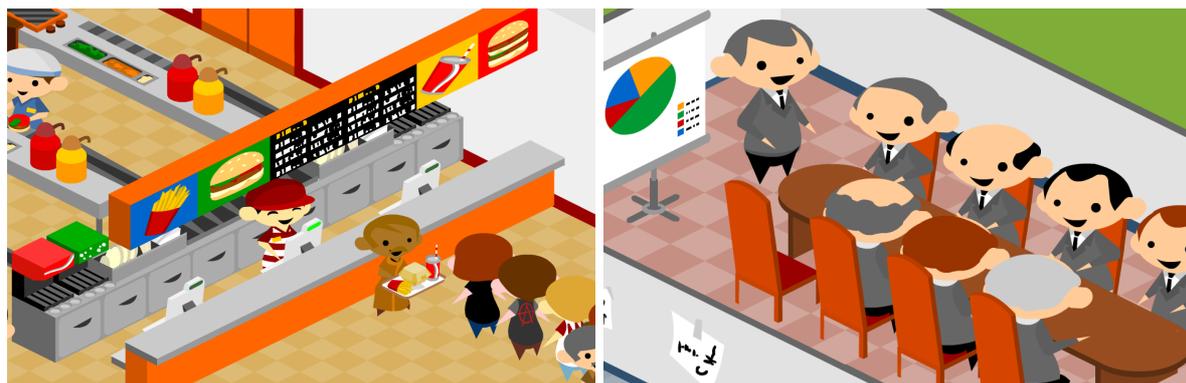


Figure 40 Molleindustria, *The McDonald's Videogame*, 2006.

Players take on the role of an executive having to follow the logic and requirements of the very institution the games want to criticize.

Bogost likes to emphasise persuasive games as an alternative to serious games in so far as they would use “procedural rhetoric” to support or challenge players’ understanding of the way things in the world do or should work. Unlike serious games in a formal context, persuasive games would aim to express critic on cultural contexts and intentions of such products.¹⁰¹ Bogost proposes using the rhetoric of video games to understand and express critique on wider cultural and political circumstances. He points to examples for the fields of education, politics and marketing. He sees potential for such games interrogating in more subtle domains such as healthcare, too.¹⁰² Recalling Lieberman’s distinction on formal and informal health games, I like to situate such expressive games within an informal context. They may precisely express critic on current public health issues and policies.

In his essay on what he calls “mobile persuasive games”, Bogost gives us a clue how such games may interact with their spatial environment. As BJ Fogg, he points to the importance of delivering digital rhetoric as close as possible to its real world context. What he sees as Fogg’s “psychological” approach would seek to integrate simulation into the simulated real world following the dream ubiquitous computing to provide seamless and immediate experiences.¹⁰³ In contrast, Bogost wants to advance a different and as he suggests more artistic approach to persuasion. For persuasive games he has argued that their expressive power unfolds from what he calls a “simulation gap”. The latter would occur between a worldview expressed by a game designer and the worldview already held by players. Ideally, interacting with a persuasive game would stimulate an inner state of instability, which, as he hopes, would leverage players to rethink established opinions and attitudes.¹⁰⁴ As he specifies for mobile persuasive games, they would be a parallel approach to integrating messages into daily routines most seamlessly. Game designers, Bogost claims may seek to collide digital rhetoric and real world setting. He recalls “defamiliarization” as an artistic technique, which would compel the viewer to see the ordinary in a new and unfamiliar way.¹⁰⁵ For him, the

¹⁰¹ Bogost, *Persuasive Games*, pp. 29-31.

¹⁰² Bogost, *Persuasive Games*, p. 64.

¹⁰³ Ian Bogost, 'Persuasive Games on Mobile Devices', in *Mobile Persuasion: 20 Perspectives on the Future of Behavior Change* (Palo Alto, CA: Stanford University, 2007b), pp. 29-37, p. 32.

¹⁰⁴ Bogost, *Persuasive Games*, p. 214.

¹⁰⁵ Bogost, 'Persuasive Games on Mobile Devices', pp. 33-4.

promising effect of bringing mobile persuasive games is not to deliver messages most seamlessly in any context, but rather to make them disruptive, strange and thereby more expressive.¹⁰⁶ I believe this comment sets mobile persuasive games in an artistic tradition here, which has been highly influenced by Situationist practices.

Within the mobile game *Airport Insecurity*, players take on the role of any passenger standing in a security queue of an U.S. airport. Players are being asked to proceed in the queue, stay calm and not to contact any fellow passengers. They can finally decide whether to silently dispense banned items into the bin before the x ray or to test the limits of the screening system. The game randomly assigns items that go through or cause an alert based on security statistics available for each airport. According to Bogost, its argument is to question the U.S. government's claim to gain security by reducing citizens' rights, even though the overall effectiveness of the procedures would be ultimately uncertain. Bogost claims, it is crucial for *Airport Insecurity* to be played precisely in the spatial context it addresses. By inviting the player to a videogame based simulation of the very experience he is taking part in, Bogost hopes to amplify his awareness and potential estrangement of being able to smuggle through dangerous items. Through the mobile platform, its gameplay would collapse the source of critic with the procedural rhetoric criticising it.¹⁰⁷ Bogost then uses context awareness, too in order to make play experience more expressive. Whereas statistics of the particular line, in which a player is waiting in, adds an objective aspect to the simulation, the gameplay also follows an accurate observation of the spatial practises involved. In contrasts the obedient activity, which is usually followed through without great awareness and even seems to benefit from the dramatic built up of the linear setting.



Figure 41 Persuasive Games, Airport Insecurity, 2005.

Mobile persuasive games in Bogost's view unfold their expressive power precisely through being played within the context they criticize.

Bogost speculates about a mobile health game, which could be designed to intervene in everyday situations such as dining or grocery stores, where players would be likely to make poor nutritional decisions. He therefore draws on Fogg's notion of the opportune moment to deliver persuasive messages. Bogost seeks to "accentuate" the player's understanding of the gap between good and bad food choices:

¹⁰⁶ Bogost, 'Persuasive Games on Mobile Devices', p. 36.

¹⁰⁷ Bogost, 'Persuasive Games on Mobile Devices', p. 36.

“For example, imagine that the mobile game allowed the player to choose a level that corresponded with the type of food the player was about to eat (e.g. fast food hamburger, or grocery store frozen meal). The game might offer the player a level or scenario based on a regular diet of that foo stuff. How easy or difficult might it be to climb stairs, run a race, or play with one’s grandchild after fifty years of eating burgers?”¹⁰⁸

In this example the concept of defamiliarization lacks the subversive charm of smuggling forbidden items through airport security. However, the principle may become clear: Expressive games use the urban context as integral part of their game rhetoric. As collaborative exergaming has used city shapes as a sort of training tool to sparkle running styles in their players, expressive games respond to real world locations. In contrast to persuasive technologies, which want to reinforce certain routines through context-aware feedback, persuasive games want to make aware of routines in order to express critique. Bogost wants to spur those places, in which the social issues he is dealing with are the most prevalent, but he hardly shows an interest of directly altering them. He picks out specific locations in order to express critique on wider cultural contexts. The resulting gameplay activities and spatial practices may well start to criticise daily routines, especially for a health context. As I have shown in my excursion on Situationist-inspired affective architecture, expressive health games may also explore the input of more sensory simulations in the repertoire. Expressive game play in health games it needs to be noted follows the worldview of the game designer. It gets expressive for players only through being played and interacted with. Long-term behaviour change, in contrast to collaborative games, as I have shown above, may occur in reflection on gameplay activities and retrospectively. Expressive games therefore need to contrast game situation to real world routines. In the following I will pay more attention to reflection on health-related behaviours that may occur during game play.

Reflective

I will conclude my account on different kinds of playing health games with a category that augments what I have described earlier as performative technology. Whereas Nold’s Bio Mapping allows a group of users to reflect on environmental influences retrospectively, I will show how mobile games can also allow reflecting on urban space and body data in real time. I will follow observations that today’s digital exergames often borrow extensively from competitive game genres. In contrast, I will highlight how the mobile game *Ere Be Dragons* seeks to stimulate a more creative and free form of play, which I frame as reflective play. Rather than what I have called expressive health games, in which players interact with a distinctive game rhetoric, I will show how players in reflective games try to achieve a certain health related goal by exploring different ways. They may be set apart from collaborative games, which as I have shown for *CryptoZoo*, start off from pre-designed play activities (“learning” running styles) and go on developing user-provided content in collaboration with

¹⁰⁸ Bogost, 'Persuasive Games on Mobile Devices', p. 36.

fellow players. Reflective games seem to develop their particular appeal from interacting with the city on the one hand, and seeing how one's body data would respond to various behaviour and environments. In my view, reflective health games allow for a further kind of play experience, in which players alter their behaviour in response to environments and illustration of their body data. In the following, I will show how their twofold aim - to make aware of environmental influences, but also stimulate the desire to break up routines - seems to follow the project of Situationist mapmaking.

Stimulating revolutionary desires: Psycho-geography and urban drifts

I have shown above how Lefebvre's notion of experimental utopias anticipates what Bogost frames as today's procedural rhetoric. Building on both legacies, I have described "expressive" health games as interacting with simulations of possible healthy or unhealthy future lifestyles. In contrast, Situationist practices such as psycho-geography and urban drifting have sought to make people aware of environmental influences one's body and everyday routines. I will show in this section that Situationist mapping goes beyond criticising environmental influences and have also claimed to enhance their users' everyday life. I will point out that drifting was to sense environmental influences on one's body and psyche, which was accurately mapped in psycho-geography. In turn, such maps representing architecture and its relation to the body aimed also to stimulate behaviour change. In the following I will first investigate how health and wellbeing was a part of psycho-geography and Situationist mapmaking. Second, I will show how Situationist practices aimed to result in what they called "ludo-constructive" actions. By revisiting these two points, I will reveal a further Situationist legacy for today's reflective health games that underlines their close connection to urban space.

As Sadler notes, initially situationism would have been founded on the belief that revolution broadly originates in the appropriation and alteration of the material environment and its spatial practice. Activities, which would not share this aim, could hardly claim to be called situationist.¹⁰⁹ After 1960, however, within the Situationist movement occurred what McDonough calls a "necessary clash" between Constant, who was experimenting with a Situationist inspired architecture such as New Babylon and the cultural practices of the SI under Guy Debord.¹¹⁰ In the eyes of the remaining SI members, Constant would have sold the movement by breaking their credo of collective authorship. More severely though, Constant would have imposed an architectural form onto a revolutionary practice that would have set out to fight any structuralising power of architecture and urban planning. At the same time, Kofman and Lebas have observed how Asgar Jorn and Constant may have left the SI as they would have found it politically polarized under the leadership of Debord.¹¹¹ I follow the distinction between these two groups since it helps to contrast how expressive (Constant's New Babylon) and reflective (Debord's psychogeography) health games seem to interact with their urban context.

¹⁰⁹ Sadler, *The Situationist City*, p. 13.

¹¹⁰ McDonough, 'Fluid Spaces', p. 101.

¹¹¹ Kofman and Lebas, 'Lost in Transposition', p. 12.

For Guy Debord, “critical theory must communicate itself in its own language – the language of contradiction, which must be dialectical in both form and content.”¹¹² As I have shown above, game designer Ian Bogost argues that interactive videogames would make use of a “procedural rhetoric” that would go beyond classic dialectic structures. Bogost insists expressive video games would unfold their critique without implementing or anticipating possible counter critique within the game play of a single product. The dialectic interplay of argument and counter-argument would therefore occur in a wider “media ecology”, in which other games may or may not express opposing worldviews.¹¹³ That remark led me to the belief that architectural artefacts are comparable to videogames in the way they express their rhetoric. Following Debord’s remark, McDonough questions if there could be such a thing as “situationist architecture”. Constant may have obviously tried to envision and materialise one and yet McDonough prefers to speak of a Situationist inspired use of architectural means. According to McDonough, the most advanced form of such “liquid practise” would have occurred in Debord’s psycho-geography and drifting.¹¹⁴ What McDonough calls Debord’s liquid practise seems close to what I have observed earlier as Hundertwasser’s concept of “creative mouldering”. Whereas the latter also claimed alteration of given architecture through a spatial practice, I have highlighted how they were meant to give expression to a pre-formulated critique and worldview.

Debord describes the practice of drifting, or *dérive* in French, as the “technique of swift passages through varied environments.”¹¹⁵ Drifting would be closely linked to the recognition of the effects of psycho-geographic nature on human behaviour, but would have also a “ludic-constructive” aspect to it. Debord insists it would go beyond the classic ideas of the journey and stroll, which would have been celebrated from Baudelaire to Benjamin. I have discussed two groups of strollers earlier, which would have claimed to follow a serious business. In contrast to flaneurism, members of stroller clubs specified rules for their walks in order to maximize the benefits for one’s health, wellbeing and daily work performance. Likewise bacteriologist-flaneur Yersin strove through Paris at the turn of the century to map systematically the everyday life of microbes in the name of public health. Debord goes on carefully describing the modalities of urban drifting as an emerging and fragile discipline. He observes a most fruitful number of people to join a drift and specifies an average duration. He notes, one could go drifting on its own, but the dynamics in a group of two or three would have shown to lead to the most “objective conclusions”. Ideally a drift would last for a day or for the time between “two periods of sleep”. Night times would be unfit for drifting and so would be prolonged rains. Storms and brief showers, on the other hand, would be favourable. Debord considers the right size for the field of action, which should not be bigger as a city

¹¹² Guy Debord, *Society of the spectacle*, trans. by Ken Knabb (London: Rebel Press, 2004), p. 112.

¹¹³ Bogost, *Persuasive Games*, pp. 37 ff.

¹¹⁴ McDonough, 'Fluid Spaces', pp. 101-2.

¹¹⁵ Guy Debord, 'Theory of the *Dérive*', in *The Situationists and the City*, ed. and transl. by Tom McDonough (London: Verso, 2009), pp. 77-85, p. 78.

and hardly smaller than a building such as a train station.¹¹⁶ Debord presents urban drifting as a serious procedure with strict rules and recommendations to be followed.

Sadler describes early practices of urban geography as mere descriptions of strolls through different areas of Paris. Authors would have paid particular attention to soft and mutable elements of the city such as the play of presence and absence, light and sounds, human activity and associative thoughts and ideas. Hard elements such as shape, size, and placement of masonry would be merely used to articulate the stories between the lines.¹¹⁷ He suggests the data that was produced by urban drifts, would have been the result of rather “imprecise” and romantic observations, mostly on emotions and experiences. Ralph Rumney has left a document for a psycho geographic drift, which was criticised by fellow drifters for its flaws and imprecisions (Figure 42).¹¹⁸

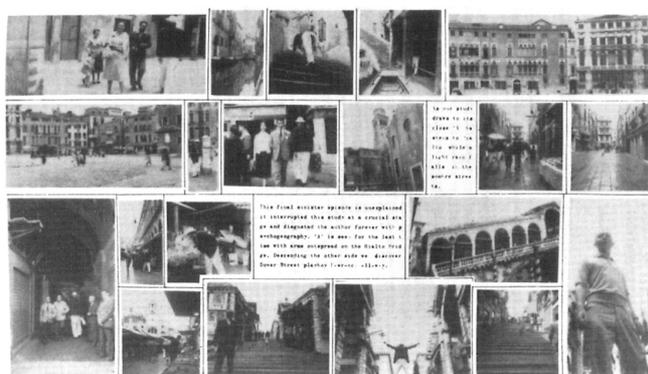


Figure 42 Ralph Rumney, Psychogeographic Map of Venice (detail), 1957.

Ralph Rumney’s collage of texts and photographs to document a psycho geographic drift in Venice had the look of a systematic investigation. For his colleagues of the SI, it lacked of seriousness being flawed with errors and failures to recapitulate parts of the drift.

Sadler sees psycho-geography as a sort of therapy that maps and redirects patients to yet unspoiled and canny spots of the old Paris in order to re-excite their body and senses. Chtcheglov would have drawn an analogy to psychoanalysis, seeing the drift as “almost a therapeutic” technique. For Sadler, the power of psycho-geography lies in its “intoxicating combination” of subjective and objective exploration of the city. As we can see in Debord’s and Jorn’s “The Naked City”, psycho geography was to criticise the loss of the old Paris through urban renewal projects. At the same time it was to prepare for the future re-use or at least to make the most of the remaining beloved old parts (Figure 43).¹¹⁹ Situationists also seem to be concerned foremost with the mental effects that result from the rational, boring and sterile city. However, Debord mentions studying the “bewildering affective results of certain spatial fields.”¹²⁰ To me, this may indicate his interest in influences on the human body and its senses. Such an interest stays at a vague level and seems not being followed up. Even though Debord was so keen on presenting the *dérive* as an almost scientific tool, it

¹¹⁶ Debord, 'Theory of the *Dérive*', pp. 81-2.

¹¹⁷ Sadler, *The Situationist City*, p. 70.

¹¹⁸ Sadler, *The Situationist City*, pp. 78-9.

¹¹⁹ Sadler, *The Situationist City*, pp. 79-81.

¹²⁰ Debord, 'Theory of the *Dérive*', p 82.

seems notable why he does not consider the record of any medical, physiological and biological measurements.

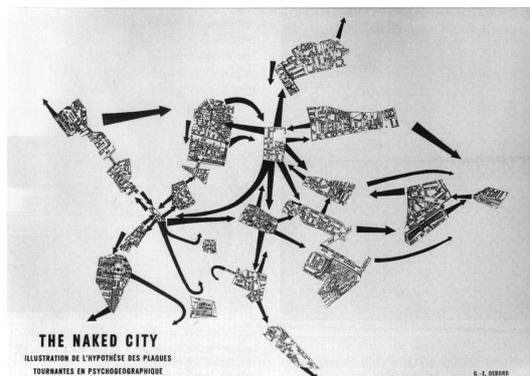


Figure 43 Guy Debord and Asgar Jorn, *The Naked City*, 1957.

Psychogeographic Maps have been also seen as therapeutic measure. Next to criticizing the loss of the old Paris due to re-urbanisation, they advised on how to make the most of the remaining old parts of Paris.

Drifts were to be a tool for recognizing and mapping “psycho-geographic” effects. Sadler makes clear that the Situationist motivation in mapping real life turns around the three big social and political topics of class struggle, the quest for social equality and the freedom of decision for individuals.¹²¹ He points to Debord’s interest in the social geographer Chombart de Lauwe, whose maps were intended to show “the narrowness of real life in Paris”. De Lauwe has mapped the commutes of a female student in the bourgeois Parisian 16th arrondissement in 1952, which, as Debord notes, would merely compose in a triangle of reduced dimension and without deviations. Debord mocks that the girl would indeed oscillate between the École des Sciences Politiques, here home and that of here piano teacher. He asks how it would be possible to live this way and sees it as the example for people to realize it was time to widen up daily activities.¹²² It seems from this analytical interest in foremost cultural and political aspects that his suggestions for “ludo-constructive” practices are being motivated.

Debord seems so concerned with mocking and counteracting the cultural practices of the bourgeois Parisian that he actually hardly considers to show influences on peoples’ health or wellbeing. It strikes particularly difficult to indicate psycho-geography as health promoting, when we consider that alcohol and drug abuse was a crucial part of the routine. As Sadler explains, Situationists would have seen “creative” substance abuse as a necessary tool to discover the city sublime. An important tool, for which they, as many were ready to admit would have to pay a heavy price, when years later complications would set in.¹²³ Rather than observing what influences external substances such as dust, steam or any other pollution would have on one’s body, Situationists swallowed conscious-altering substances in order to see what effect the environment had on their mind. However, it seems fair to say that the pills

¹²¹ Sadler, *The Situationist City*, p. 92.

¹²² Debord, 'Theory of the Dérive', pp. 78-9.

¹²³ Sadler, *The Situationist City*, pp. 94-5.

being taken while on a drift, resemble a sensory device that allows the recording of environmental effects on our psyche. Since the substances would obviously enter the human body, affecting its organism and cognitive skills, pills are indeed the most pervasive sensor technology. For me, drug abuse within the serious procedures of urban drifting seems to anticipate today's biometric sensors on or beneath the skin. In the technique of psycho-geography, oscillating between objective measurement and subjective experience, the body seems to become part of the mapping techniques itself and central subject of studies. I therefore underline Nold's point of departure, when he claims Situationist maps to be disappointingly vague. Employing biosensors, GPS and mapping software, however Nold is right to ultimately stress the importance of users to interpret and discussing the covered data.

Debord hoped for serious outcomes of his psychogeography, when he concludes the "Theory of the Dérive":

"By means of old maps, aerial photographic views, and experimental dérives, a cartography of influences can be drawn up that has so far been lacking, [...] it is no longer a matter of accurately fixing the boundaries of solid continents, but changing architecture and urbanism."¹²⁴

Such "ludo-constructive" practises arising from drifting were to change architecture and urbanism. Debord welcomes to go into unfamiliar contexts and places, and claims to get involved into games that would sparkle "possible rendezvous" and provoke unexpected situations and encounters. Within such games "the element of [spatial] exploration is minimal in comparison with that of behavioural disorientation."¹²⁵ For Sadler, the dérive was to cause a "revolutionary perception of the city" and he therefore points to the model that Situationists seem to apply in order to stimulate behaviour change. Drifts would have to alert people to their imprisonment by their daily routine.¹²⁶ It is important to note that breaking of established routines is key to many health games, too. As I have shown above, Bogost emphasises the collision of "expressive" game rhetoric with real life situations as a key to stimulate a re-consideration of established behaviours and worldviews.

Sadler puts it neatly when he concludes on the role architecture plays in such a learning process within Situationist thinking. For me, it sets the tone to discuss architecture in self-reflective health games in the tradition of psycho-geography and drifting:

"Architecture was the key to this Situationist consciousness: whether discovered in the city or the mind, architecture mapped out revolutionary desire."¹²⁷

¹²⁴ Debord, 'Theory of the Dérive', pp. 84-5.

¹²⁵ Cited in Sadler, *The Situationist City*, p. 94.

¹²⁶ Sadler, *The Situationist City*, p. 94.

¹²⁷ Sadler, *The Situationist City*, p. 164.

This revolutionary desire to be encouraged by an architectural conscious intended to stimulate first of all individual awareness and then behaviour change. At the first sight, Situationists seem to boast that bad health outcomes - physically and mentally - would be the prizes to pay for any wider revolution. Whereas this seems a very heroic position, one that would celebrate the healthy body and awaits bravely its decay, at the same time their claim for creative drug abuse points to the believe in artificially enhancing and supporting the body's cognitive capabilities. In my view, psycho-geography can be seen as an early attempt to map influences on one's health and wellbeing with an apparatuses of pervasive technology. Nold's Bio Mapping has further developed this approach to what he has called performative technology. I have highlighted above, how performative technology allows a group of users to discuss environmental influences and potential urban interventions retrospectively. In the following section, I will show how reflective health games will further advance such an approach through interactive mapping technologies, which foremost address individual behaviour.

Interactive and multi-modal maps

In the following, I will show how Situationists' claimsto show multiple influences one one's wellbeing while stimulating behaviour change manifest in today's interactive maps. In my point of view it is precisely their ability to integrate various sets of data – from vital parameters to positioning – that may unfold unprecedented potentials for behaviour change. Denis Cosgrove has observed how Situationists would not have merely criticised environmental influences on one's body and behaviour. For him, they wanted to counteract and re-code urban life. He points to the Situationists' critique on scientific cartography but as well to their more artistic attempt of “enhancing the experience of everyday urban life.”¹²⁸ Following such reform attempts, Situationist mapmaking would have explored the most advanced technological means of its time. Pointing to ever evolving mapping technologies, however, Cosgrove claims for more “creativity in shaping and re-coding urban experience” with particular respects to current developments in digital and interactive media.¹²⁹ I have already touched upon such claims to reformulate the Situationist claim of “recoding urban life” while dealing with the combination of artistic practises and high-end mapping technology. As I have shown in Chapter III, Nold's Bio Mapping explores multimodal maps to sparkle discussion on potential urban interventions.

Boyd Davis emphasises how maps have always been a way to express a subjective view on to the world. He points to the very nature of semiotics, which would be to choose symbolic representation, to frame an area of interest, or to choose a perspective or colours. So-called objective mappings would always be representations of the mapmaker's subjective views in response to those held by a majority or by those in power.¹³⁰ Interactivity, Boyd Davis claims, would allow mapmakers to drill down such a subjective view of cultures and cultural

¹²⁸ Denis Cosgrove, 'Carto-City', in *Else/Where: Mapping - New Cartographies of Networks and Territories* (Minneapolis, MN: University of Minnesota Design Institute, 2006), pp. 148-57, p. 156.

¹²⁹ Cosgrove, 'Carto-City', p. 157.

¹³⁰ Stephen Boyd Davis, 'Mapping the unseen: Making sense of the subjective image', in *Emotional Cartography: Technologies of the Self* (London: Creative Commons, 2009), pp. 39-51, p. 42-4.

sub-groups to the view of the individual user. Maps in which users choose to place keywords of interest in the centre, while leaving others to the periphery, would provide users with a prioritization of topics at a certain moment in time. Interactive maps would be freed from the traditional one single subjective interpretation that would have been imposed by the very person who designs the map, or his cultural environment. Ideally, interactive and subjective maps would represent a kind of “temporal subjectivity” responding to the moment and to the users’ needs as expressed through the medium of interaction.¹³¹ As I have mentioned above, Boyd Davis observes recent developments in pervasive technology to open up interactive and subjective maps to multimodal input. The latter may include positioning systems, motion or biosensors. What he frames as subjective, interactive and multimodal maps would be made not only for me, at this place, but also for me in this very context and in response to vital parameters.¹³² Seen from the users point of view, the advisory if not therapeutic effect that Situationist mapmaking has hoped for, can be nowadays constantly updated in response to multi-modal input.

Peuquet has described how users alter graphic features of maps such as framing, zooming in and out, changing the rate of abstractions or colour as “playing with maps” in order to reveal latent relations between various sets of data.¹³³ It is such interrelations between for instance bio data such as heart rate and specific locations or times, which are of particular interest in a health context. Likewise, Peuquet states a lot of research in such multi-modal maps would have to go in adapting the knowledge about graphical representation to the new tasks of mapmaking. Traditionally, semiotics would have intended to allow experts to get their message across in a most efficient way. But, as Peuquet notes, such knowledge can be also crucial to design more democratic maps, which would allow users to explore huge sets of knowledge.¹³⁴ Boyd Davis confirms that the power and influence of the mapmaker would yet hardly vanish with the emergence of interactive maps. In contrast, his role would have shifted from representing a universal truth to creating opportunities for the user to explore various sets of data.¹³⁵ To me, it seems this opportunity space of playing with interactive and multimodal maps that self-reflective health games seem to make use of.

What Bogost has observed as the mechanics to express critique and stimulate behaviour change through designing “procedural rhetoric” of interactive games, Boyd Davis seems to observe for interactive maps. It is important to note that designing the way we interact with media – games, maps or health games - leaves room to influence, manipulate users, but also to express critique. As Situationists have hoped their maps would stimulate revolutionary desires, I believe today’s interactive maps can be a potentially powerful tool to influence behaviour change. This seems important to note for both users and designers of interactive

¹³¹ Boyd Davis, 'Mapping the unseen', p. 45.

¹³² Boyd Davis, 'Mapping the unseen', p. 45-7.

¹³³ Donna J. Peuquet, *Representations of Space and Time* (New York, NY: Guilford Press, 2002), pp. 157-8.

¹³⁴ Peuquet, *Representations of Space and Time*, p. 290.

¹³⁵ Boyd Davis, 'Mapping the unseen', p. 46.

and multimodal maps. In the following section, I will show how they play a crucial part in reflective health games.

Ere Be Dragons

I have argued throughout this text that the current (over) emphasis on individual responsibilities for health-related behaviours needs to be balanced with the discussion on urban and social circumstances. As I have shown above, augmenting participatory planning tools with body data and position sensors can empower users to indicate health-orientated urban interventions. With reflective health games, I will conclude this argument with an approach that seeks to stimulate reflection on personal behaviours, body data and their relation to the urban environment. In contrast to performative technologies, which allow reflecting on a journey through the city in retrospective, to play reflective health games seeks to provide interactive and real time experience. Building up on what I have described above as Situationists' aim to stimulate revolutionary desires, reflective health games aim to make aware of environmental influences, but leave room for users to explore how to respond to such new insights.

Boyd Davis and colleagues have explored the use of interactive and multimodal maps within one of the first mobile games with a health agenda. They describe *Ere Be Dragons* as a multi-disciplinary design project between artists, technologists and health scientists that would have sought to explore new ways of everyday physical activity. They emphasize the dullness of some daily environments and the repetitiveness of routines such as commuting to contribute in people being decreasingly physically active. Pointing to some of the studies on walkability that I have shown earlier in this text, I may confirm that unconnected street layouts, the lack of attractive destinations and mixed usages have been shown related to peoples' activity levels. Their approach sets out to playfully recast players' relation to both the space around them and with the "unseen" space within their body. Their mobile game seeks to make the player's body a new and engaging companion, whose physical response to exertion can be sensed and understood as you go along.¹³⁶ As locative media designers, Boyd Davis and colleagues hardly consider intervening in the built environment in order to make cities more "walkable". In contrast, they seek to augment cities with temporary and location-sensitive media applications.

Boyd Davis and colleagues describe the game experience as follows: In its simplest form, the player wears a portable heart rate monitor and inputs his or her age into a smart phone device featuring a GPS module (Figure 44.3). On the basis of the player's age, the game calculates an optimal heart rate according to health statistics (Figure 44.1). Players then proceed to walk along wherever and however they wish. During the walk an on-screen landscape is being built up, which on the one hand corresponds to the player's position and movement in the real world. If he turns right, the virtual trace of his journey makes a rightward turn as well. If

¹³⁶ Stephen Boyd Davis and others, 'Mapping Inside Out', in *Pervasive Gaming Applications - A Reader for Pervasive Gaming Research Vol. 2* (Aachen: Shaker, 2007), pp. 199-226, p. 200.

players return to places they have already visited, new paths would intersect old ones. On the other hand, the virtual landscape corresponds to the measured heart rate. If the player does well, e.g. is exercising adequately, the landscape flourishes. The heart rates are split into five ranges on the basis of each player's optimal heart rate. His territory is represented in isometric tiles with distinctive colours and landscape features. Insufficient exertion causes the current landscape to impoverish, while over-exertion would lead to the growth of a dark, forbidding forest (Figure 44.2).¹³⁷ I have discussed the development of a virtual play character in response to the gameplay of the nutrition game MEC earlier in this text. It is important to note that the virtual landscape of Ere Be Dragons responds to the interplay between real time data and movements, not merely to users' compliance to fixed gameplay activities.

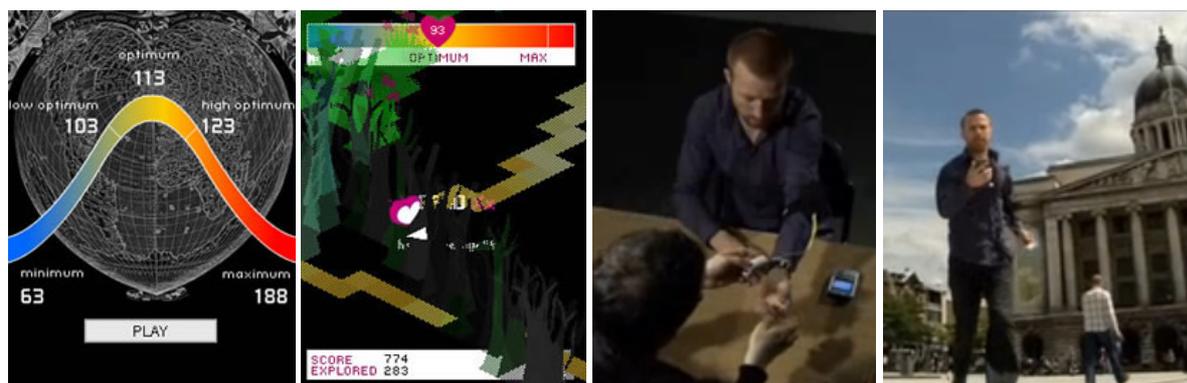


Figure 44 Middlesex University, Active Ingredient & Nottingham University, Ere Be Dragons, 2005.

In Ere Be Dragons, players interact with a interactive and multimodal map that combines heart rates with positioning data. In order to stay within a certain pulse range, players walk through the cityscape and through a combination of movements and measured heart rates create an onscreen landscape.

In this version, Boyd Davis and colleagues mention certain typical game features, which they have added to the core game mechanic. A time limit for inactivity and a status bar would reinforce the feeling of interactivity while a simple point-scoring system would log the overall performance. However, they insist that players' motivation would be to keep the game world alive and flourishing by behaving in the healthiest way. In this way, players would be creating a new world, which though being objectively mapped would be theirs alone.¹³⁸ This comment points to an important distinction to what I have observed earlier as “expressive” play of health games. As Boyd Davis and colleagues put it, while Ere Be Dragons would have an imperative - to maintain the heart rate in a certain range – players would not be asked to follow a certain gameplay to achieve this imperative. It would be up for the player how to play and how to achieve optimal heart rates.¹³⁹ I may note the difference between following or trying to cheat a game rhetoric of what I have described as expressive and the more creative construction of a landscape in response to one's actions in reflective health games.

¹³⁷ Boyd Davis and others, 'Mapping Inside Out', pp. 200-1.

¹³⁸ Boyd Davis and others, 'Mapping Inside Out', p. 202.

¹³⁹ Boyd Davis and others, 'Mapping Inside Out', p. 213.

In a second version of Ere be Dragons the set up was slightly altered by turning the single player game into a multi-player experience. Players would still control the visualisation of the virtual world through their own heart rate data. Additionally, they could take track of other players' journeys and could for instance earn extra-points by following the track of another player trying to enter their territory.¹⁴⁰ I may therefore note that there can also be a competitive aspect to reflective gameplay. However, in Ere Be Dragons it seems to be carefully balanced with various offers. Based on gathering players' reactions, Boyd Davis and colleagues observe that players did choose to play Ere Be Dragons in various modes. Whereas some played competitively and would have been talking about "stealing" others territory, others choose to play on their own. Those would have simply been enjoying the developing landscape in response to their body data. The multi-player version would have been well liked, but foremost since it would have had the benefits of increased social interaction - comparing, competing and sharing performances – and the offer to explore the game on its own.¹⁴¹ I have shown above how CryptoZoo highlights social interaction and collaboration as crucial to its gameplay. But unlike Ere Be Dragons, a collaborative health game would certainly lose large portions of its appeal when being played alone.

Boyd Davis and colleagues make an interesting note on the kind of gameplay they attempted to create with regards to current public health issues such as obesity. Their target audience would have been not those, who were already interested in sport or health issues in general, but those hardly involved in traditional sports. Many of the existing health assistant applications would target foremost those already committed to fitness. They would use a variety of pervasive technologies to track personal performances or to share them with others. In contrast, they wanted the game to be a pleasurable, creative challenge, not one that would induce guilt or would tell players what they must do for their own good.¹⁴² I have shown this aspect with my critique of foremost competitive play within current mobile health game practise. Collaborative health games would emphasize behaviour change as part of interacting with a community. In my view, in a collaborative game such as CryptoZoo, long term behaviour change – people taking part in more exercise over a regular period of time – may occur as part of the game in repeated game sessions. In contrast, what I have described as expressive health games would hope for a long-term behaviour change as result of players rethinking established worldviews. Thus might rather occur outside the game, potentially days after. Feedback to Ere Be Dragons would have shown that participants enjoyed discovering more about their own physical responses. However, to estimate any long-term effects on behaviour change would require far more extensive trials.¹⁴³ I am convinced that reflective games seem most promising to be applied for various other health-related context. Its principles in particular may contribute to games dealing with the prevention and management of chronic diseases.

¹⁴⁰ Boyd Davis and others, 'Mapping Inside Out', p. 203.

¹⁴¹ Boyd Davis and others, 'Mapping Inside Out', p. 205.

¹⁴² Boyd Davis and others, 'Mapping Inside Out', p. 210.

¹⁴³ Boyd Davis and others, 'Mapping Inside Out', p. 211.

Boyd Davis and colleagues have pointed to the Situationist project to reveal precise laws and specific effects of the geographic environment on individuals as a major source of inspiration. On the one hand, in *Ere Be Dragons* the urban landscape would be mediated through the various subjective states of the body, being measured and illustrated to the player on the interactive map. In turn, players would experience their body through the perceptions of the city while playing the game. A dark, forbidding forest corresponds to exertion, friendly and flourishing landscape corresponds to optimal heart rates.¹⁴⁴ The reference to the Situationist project therefore guides me to the question how a reflective health game may want to approach stimulating behaviour change.

In contrast to Nold's performative technology, which would enable a group of people or individuals to reflect-on-action, Boyd Davis observes elsewhere how *Ere be Dragons* would enable its players to reflect-in-action.¹⁴⁵ He compares playing *Ere Be Dragons* to the constant feedback between actions and cognition that would occur for instance when a designer draws on a sheet of paper. Because in *Ere Be Dragons* action and reflection would be simultaneous, users would modify their behaviour in the light of the current state of the map. Boyd Davis suggests playing with an interactive and multimodal map may unfold unprecedented possibilities for individual behaviour change. Such maps would construct cognitive artefacts for our own perception. In this light, the mobile devices on which these artefacts are being displayed appear to him as "prosthetic extensions" to the human body.¹⁴⁶ Whereas Peuquet has highlighted the chances to gain relations and new insights from playing with maps, Boyd Davis also notes its potentials for behaviour change. While he observes interactive maps as cognitive artefacts combining body and positioning data, he seems close to Situationists, who according to Sadler wanted to map out revolutionary desires. I believe that to support players in revealing their own instinctive knowledge what is best or healthy for them by trying out new behaviour in a game is in the core of self-reflective health gaming.

In his observation on Skateboarding, Borden formulates the body as being between the skateboard as a tool to work with and objects such as ramps or street furniture. He describes thorough-fully how architecture influences the practice of skateboarding. The curvature in section of a half pipe for instance would impact how high skaters jump while the smoothness of different surfaces would influence the flow with which skaters roll over the asphalt. For Borden, the skateboard can be seen as a "prosthetic device", too. It would allow users to sense and "question" architecture according to the specific requirements of skateboarding. The sound of the wheels being amplified by the board would reinforce the feeling for the surface to skate on.¹⁴⁷ I may note that smartphones and skateboards likewise have been observed as prosthetic devices. They have been described as being part of the spatial practices of skateboarding and mobile health games respectively. Borden likes to observe a constant feedback between practise and built form - e.g. skaters altering their ramps and ramps influencing the practise of skateboarding. He states that these processes would

¹⁴⁴ Boyd Davis and others, 'Mapping Inside Out', p. 219.

¹⁴⁵ Boyd Davis, 'Mapping the unseen', p. 48.

¹⁴⁶ Boyd Davis, 'Mapping the unseen', p. 48.

¹⁴⁷ Borden, *Skateboarding, Space and the City*, pp. 102-3.

question architecture. Skaters would interrogate architecture as “another body” in relation to its actions.¹⁴⁸ Likewise, we may state the reflective health games – through mobile devices – can question how the environment influences our body.

As I have mentioned earlier, Borden observes how users started to build their own ramps and temporary structures to skate on. They would have done so in response to the commercial and often unskateable parks that have developed within the large boom of skateboarding in the late 1970s. Whereas such a participatory building practise may be described as “ludo-constructive practises”, collaborative, expressive or reflective health gaming seems more difficult to make available for health-orientated planning. They can be developed as tools to reveal environmental influences on one’s body and even stimulate playful responses. Reflection-in-action seems to leave more room for intuitive and creative play within a given imperative of a health context. It certainly adds a further aspect of playing health games to those of collaboration and expressing critique. Indeed, participants seem to have enjoyed exploring this possibility space and hence have shown particular engagement. I am convinced that especially reflective health games appeal to users by letting them interact with the body and the city. It is then through such engagement, which produces data and play experiences that in a second step, reflective health games may help people to question the environment and its influences on one’s health. While such engagement ensures to collect health-related data over longer periods of time, health games and performative technology need a second step to produce meaningful comments on urban interventions out of data that has been gathered. Rather than just collecting and visualizing the data and hand it over to experts, it is crucial to make reflective health games a part of participatory planning practice.

It is important to note that the three modes of playing health games in the city that I have presented in this chapter are by no means comprehensive. Their various qualities seem to occur in combined and layered forms as it is being described in other way more elaborate studies on game categories. With the labels collaborative, expressive and reflective, I have emphasised those qualities of digital health games, which seem to benefit from urban design and spatial practise as an integral part of game experience. Separately or in combination, features such as collaboration, expressing critique and reflection-in-action will contribute to what I have outlined in this dissertation as urban health games. I am convinced the very same aspects are crucial to develop urban games as a tool for health-orientated town planning. In my view, urban health games may develop as a spatial practise that enables users to identify, articulate and question environmental influences on their health and wellbeing.

¹⁴⁸ Borden, *Skateboarding, Space and the City*, p.105.

Conclusion and Outlook

In this dissertation, I have dealt with the increasing importance to involve users in health-orientated urban planning. I have emphasised how earlier designs with a public health agenda have often imposed idealistic worldviews onto their users or have followed a merely science-based design process. In the light of more recent research on “obesogenic environments”, the traditional planning credos of decentralised, low-populated and green living areas need to be reevaluated. Having observed how closely the origins of modern “scientific” town planning have been intertwined with preventive healthcare, I have highlighted that health-orientated urban research and design practice should augment and indicate wider social and political reforms. I have underlined experts’ claims to develop transdisciplinary research approaches in order to prevent and manage today’s chronic conditions. To this end, I have been focussed to make available the critique on health-orientated town planning and architecture and contribute to this on going discussion with the concept of Urban Health Games.

Based on my analysis on the merits of 1920s modernist public health concepts for today’s situation, I have moved on to describe distinctively urban strategies of health promotion. Specifically, I have emphasised the emerging tourism and entertainment industries, from which various directions have developed into early 20th century public health education. I have shown how fashionable health resorts such as Baden-Baden have emerged in close relation to urbanism and nearby big cities. To me, they seem to integrate games and healthcare technologies in their choreographed daily routines for a temporary community of hedonists and health seekers. Considering Caillois’ study on different forms of play, I have highlighted how a mix of games of chance, make-belief and vertigo seems to prevail in health resorts. I have concluded that some origins and characteristics of today’s health games may be found in health resorts and early public health education. I have illustrated with Meyer’s ADGB school, Bermondsey Council’s provisional film studios and cinema vans how 1920s reformers have anticipated a mix of amateur enthusiasm, temporary collaboration, and early multimedia technologies as a key to reach out to a wider public audience.

Modernist architects’ claims for mobile and personally tailored solutions have led me to investigate more closely the notion of “prosthetic architecture” and its merits for today’s healthcare. Precisely the writings by organic architects such as Hugo Häring and Frank Lloyd Wright have made me aware of the importance of an open-ended and participatory design process. I have been focussed with showing how post-war planners were following up organic claims for temporary, mobile and customized solutions. Having discussed Archigram’s gadgets and lifestyle games, I have moved on showing how more recent concepts of “persuasive technology” are being used to support behaviour change and learning. However, from my perspective the notion of prosthetic architecture should also use today’s mobile and personalized technology to make users aware of environmental influences on one’s health and wellbeing. Particularly the architecture of Yona Friedman has led me to claims for a prosthetic architecture that seeks to empower users to make better-informed and health-related lifestyle choices. I have shown today’s performative technology in this tradition by pointing to Christian Nold’s Bio Maps. They are using biometric sensors, motion

detection, and positioning technologies to enable people interpreting body data and discuss potential urban interventions. From my point of view, today's prosthetic architecture - much in line with claims by organic architects - should focus to help individuals and groups articulating urban design briefs. Especially by using performative technology, I have shown such services can become most fruitful for participatory planning approaches. Rather than optimizing, smoothing or even manipulating daily routines, I am convinced the notion of prosthetic architecture should help to develop forms from inside out. Thus organic forms will help participants to express their conviction and follow health-related goals through a variety of shapes, material and media.

Conclusively, I have shown how digital health games can develop rich experiences when they begin to interact with their urban context. As much as providing health-related expertise on specific topography, physical shapes and urban setting, I have emphasised how health games can benefit from architectural and urban design theory. Specifically, I have presented how mobile and context-aware applications may benefit from the knowledge on cultural and spatial practices. Building up on my analysis on the relationship between urbanism and health, I have indicated three categories of playing health games as collaborative, expressive and reflective experience. Collaborative gaming has particular inclusive potential since it seeks to suspend mere competitive play activities with a more balanced experience of social interaction. Even though the examples that I have dealt with show little intention to substantially intervene into the built environment, they re-appropriate urban spaces as their temporary playgrounds. In contrast, I have shown how expressive games seek to criticise wider social and cultural complexes by confronting gameplay activities with users' established daily routines. Expressing the views held by the game designer, expressive health games hardly aim to reveal new insights into how urban environments affect one's body. As I have shown, they may focus on raising awareness and curiosity for possible alternative lifestyle choices through their procedural rhetoric. Finally, I have described how reflective games seek to stimulate reflection on health-related actions through mediating environmental influences on one's body through interactive maps. In a Situationist tradition, they aim to raise awareness through cognitive artefacts, but also seek to stimulate playful-constructive responses to such new and subjective insights. In my view, this approach renders them as particularly suitable to be further explored in education and management of chronic diseases and indeed to augment participatory design processes.

Perspective 1: Do-it-Yourself approach to health games

In the following I will briefly outline how the two main arguments of this dissertation – health games benefit from interacting with their urban context and can enhance participatory urban design processes – may develop in the future. When I started the research for this dissertation in 2007 to develop digital health games was an undertaking of extraordinary technological innovation. Most of the projects would have taken place in computer science, engineering and multimedia departments at a few selected universities. Meanwhile, various attempts have been undertaken to open up the developing process of serious games to users and experts. Initial attempts to adopt serious games authoring tools to a health context have

stressed the importance of personalization. Göbel and colleagues have presented a set of mini exergames, which allows integrating static and dynamic information to its gameplay activities. Users may adapt difficulty, speed and exertion levels according to their personal capabilities and goals. Through the growing array of sensory devices, exergames can now consider vital parameters and adopt gameplay activities and even storytelling in response to users in real time.¹ Such research on how gameplay can interact with users through multimodal inputs seems crucial for a health context and for exergames in particular.

However, it needs to be noted that hardly any of such authoring tools allows users to develop their own gameplay activities or goals from scratch. Whereas I have shown for instance McGonigal's claims to design one's own games "to level up in life", a Do-it-Yourself approach to health games seems in its early days. Indeed concepts for "collaborative authoring" of health games focus on increasing the cooperation between experts addressing foremost computer scientists, game designers and doctors. Mehm and colleagues emphasise collaboration in the design process of such a highly interdisciplinary research area and define specific roles in which the various experts may contribute.² In my view, research on such collaborative design processes heads in the right direction. I may note that especially when health games are being played in the city and on mobile and context-aware devices, disciplines such as locative media and urban design will be contributing to such processes.

However, it seems most important to me to further develop ways how to involve users into the design process of digital health games. In order to emphasis users' potential role, I may remind on my account on Liebermann's distinction between informal and formal contexts for health games.³ I have speculated that informal health games may well be seen as an experimental field, in which new and innovative gameplay activities are being developed in close exchange to users. As a second step, an informal context will pervade a more formal context of education or training. In the last few years, various attempts have been undertaken to develop software that empowers non-experienced users to design their own interactive content. Maloney and colleagues from MIT Media Lab's have presented the Scratch Programming language. They have shown how a framework of graphical interfaces and programming units allows a target group of 8 to 16-year-olds creating their own content. As they account, the Scratch website would provide for a social context, in which peers can share their projects, receive feedback and encouragement and learn from other users. At the time I am concluding the work on this dissertation thesis, the authors state that an average of 1,500 projects are being uploaded to the website every day. Maloney and colleagues highlight the origins of Scratch in informal learning environments such as community centres and after-school clubs. From there it would have made its way into formal education.⁴ To develop

¹ Stefan Göbel and others, 'Serious Games for Health - Personalized Exergames', in *Proceedings ACM Multimedia 2010* (Firenze: ACM, 2010), pp. 1663-6.

² Florian Mehm and others, 'Collaborative Authoring of Serious Games for Health', in *Proceedings of the 19th ACM international conference on Multimedia* (New York: ACM, 2011), IXX, 807-8.

³ Debra A. Lieberman, 'Designing Serious Games for Learning and Health in Informal and Formal Settings', in *Serious Games - Mechanisms and Effects*, ed. by Ute Ritterfeld, Michael Cody and Peter Vorderer (New York; London: Routledge, 2009), pp. 117-30.

⁴ John Maloney and others, 'The Scratch Programming Language and Environment', *ACM*

a programming language that would allow users to create their own health games seems to a key future challenge and direction of research.

I may note that increasingly authoring tools are being developed for mobile applications, too. Analogue to Scratch, MIT's App Inventor, being piloted by Google Research and now being continued at the MIT's Mobile Learning department, seeks to allow programmers and non-programmers, adults and children to create their own mobile applications. Again, through experimenting with more graphical interfaces, users can drag and drop pieces of code and create their own basic but self-made applications. It is important to note that these applications already address sensors such as accelerometer, positioning systems and cameras.⁵ Professional game developing software such as Unity seeks to simplify the usage of high-end technology by also providing assets, from which users can choose and combine their own game elements. Such developing environments addresses the whole range of platforms and have already indicated mobile games as the fastest growing area of business. So far only the basic version for console and desktop games is available for free, while the version that allows publishing games for mobile devices is being charged for.⁶ In my view, it seems most likely that such tools will become available for free in the near future and will contribute to make mobile games developing more accessible to end users.

I am convinced that developing environments such as Scratch and AppInventor will contribute to what Lieberman has described as an informal context of health game practise. Such a participatory design processes will empower users to choose their own goals they aim to achieve through a health games and develop content accordingly. It will unfold particular potentials for the health game context by setting users in the situation to influence and modify game structures. I am convinced user involvement will help to develop games that are attractive and therefore are being played by a wider audience. In response such a dynamic will contribute to further develop business models. I believe designing digital health games must be accompanied by a lively and in depth discussion on good practise as well as wider cultural implications. To such a discussion and participatory design process, I have aimed to contribute with this dissertation from the perspective of urban design.

Perspective 2: Using health games to indicate urban interventions

Mobile games are of considerable interest to many professions since they result in a set of personalized and context-aware data. Considering the use of mobile technologies and biosensors, this data may range from users' movement, preferred routes and locales, to activities, communication and measured vital parameters. Bohn and his colleagues from ETH Zurich point to the fact that economical interests may drive further developments in the area of ubiquitous computing to a considerable extent. In their view, automated services are in

Transactions on Computing Education, X (2010), pp. 1-16.

⁵ Massachusetts Insitute of Technology, 'Welcome to App Inventor Edu', in *App Inventor Edu - Playing with blocks, building apps* <<http://appinventoredu.mit.edu/welcome-to-app-inventor-edu>> [accessed 13 February 2012]

⁶ Unity Technologies, 'Publishing', in *Unity: Game Development Tool* <<http://unity3d.com/unity/publishing/>> [accessed 13 February 2012]

danger to be used foremost in order to increase efficiency in production, marketing or services. Examples for future business models in what they frame as an “ambient economy” could materialise in a health insurance system that is aware of its clients’ everyday behaviours. As they speculate, smoking a cigarette or taking a walk in the park may be recorded through smart objects and influence in real time on which conditions customers are insured.⁷ Likewise, it seems possible that data gained during a mobile health game can be used for an array of incentive mechanism in future health care. I am convinced the notion of a game as a temporally confined structure, which is distinct from everyday life unfolds an important incentive for users to talk about restrictions and use of data that is gained through ubiquitous technology. In my view, the notion of Urban Health Games will help to foster a sense of self-determination responsibility to decide what to do with the data and experiences that are being collected during a health game. Urban Health Games may therefore augment “performative technology” by helping users to “make sense” of body and position data and articulate potential design interventions.

Next to the advantages of immediate health benefits, Urban Health Games will also help to motivate users to participate in long term planning processes. Such activities will become of particular importance for a health-orientated planning that addresses the promotion of health and the prevention of chronic diseases. Moar and I have pointed to the concept for a mobile game for young diabetic users, in which different ways are being discussed to encourage players documenting their sugar levels more accurately. Aiming for the immediate effect of better therapy documentation, we have speculated that mobile health games may help users, doctors and educators to point out individual therapy improvements.⁸ By gaining data that correlates vital parameters with real world locations, urban health games may help to throw more light onto the complex environmental influences on individual therapy management. I believe thus basic insights are much needed and will be crucial to develop more sustainable and transdisciplinary urban design approaches to support people’s health and wellbeing. For such research on digital health games, which interact with their urban context, I have sought to contribute with my framework of collaborative, expressive and reflective play. I believe a close exchange between design theory and practise is crucial to consider and influence wider cultural and social implications of urban design. It is also the basis to develop a shared language between experts and users in order to discuss and evaluate design practise. I am convinced such interdisciplinary discussion will help to improve and further develop digital health games, to which I am looking forward to contribute as an urban researcher and architect.

⁷ Jürgen Bohn and others, 'Social, Economic, and Ethical Implications of Ambient Intelligence and Ubiquitous Computing', in *Institute for Pervasive Computing, ETH Zurich, Switzerland* <<http://www.vs.inf.ethz.ch/publ/papers/socialambient.pdf>> [accessed 17 November 2010] pp. 4-8.

⁸ Martin Knöll and Magnus Moar, 'The Space of Digital Health Games', *International Journal of Computer Science in Sport*, XI (2012).

Appendix

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Curriculum Vitae

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Education

- May 2009-
Apr 2012 *Visiting PhD student*, Lansdown Centre for Electronic Arts, Middlesex University
Supervisors: Dr. Magnus Moar & Dr. Stephen Boyd Davis
- Oct 2007-
Apr 2012 *PhD student*, Fakultät für Architektur und Stadtplanung, Universität Stuttgart
Dissertation project: "Urban Health Games"
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Diplom project: "Sweet Blood: The diabetes epidemic in East Harlem"
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- Feb 2004 Undergraduate degree *Vordiplom*, Universität Stuttgart (RIBA part 1)
- Oct 2001-
May 2007 *Student* at Fakultät für Architektur und Stadtplanung, Universität Stuttgart
Design studios among others with Prof. Peter Cheret, Dr. Stephan Trüby and Prof. Dr. phil. Gerd de Bruyn; Seminars in architectural and cultural theory, multimedia technologies & programming
- May 2001 *Allgem. Hochschulreife* (German equivalent to British A-levels)
Max-Planck-Schule, Groß-Umstadt, Landkreis Darmstadt-Dieburg

Professional Experience

- Apr 2012 - *Assistant professor*, Grundlagen der Architektur, Institut Entwerfen, Kunst und Theorie,
Prof. Alban Janson, Karlsruhe Institute of Technology (KIT) / Universität Karlsruhe
- Sep 2007-
Apr 2009 *Architekt im Praktikum (AiP)* with Totems Architecture & Communication GmbH,
Stuttgart; Main Project: German Pavilion for Expo 2008 in Zaragoza, Spain
- Sep 2007- *Member of the Architects Chamber* Baden-Württemberg as AiP gaining professional
experience to register as architect in Germany (equivalent to RIBA part 3)

Fellowships

- May 2012-
Oct 2012 *Research fellowship* in the category architecture
Appointed by Beatriz Colomina, Akademie Schloss Solitude, Stuttgart
- May 2009-
Apr 2012 *PhD scholarship* for the dissertation project "Urban Health Games"
Landesgraduiertenförderung (LGF) Baden-Württemberg, Germany
- May 2009-
Apr 2012 *Extended PhD scholarship* for research exchange at Middlesex University, London
German Academic Exchange Service (DAAD) & LGF Baden-Württemberg
- May 2008-
Apr 2009 *Karl Steinbuch fellowship* awarded for the Serious Game project "Diabetes City"
Centre of Excellence for IT, Film and Media (MFG) Baden-Württemberg

List of publications

Book chapters

- Mar 2012 Martin Knöll, "DiabetesCity": Análise de um "Game de Saúde" para Dispositivos Móveis', in *Ambientes virtuais de aprendizagem: dos sistemas de gerenciamento aos games e à realidade virtual*, ed. by Cristina J. Haguenaer and Francisco Cordeiro Filho, trans. by Cristina J. Haguenaer (Curitiba, Paraná, Brasil: Editora CRV, 2012).
- Feb 2010 Martin Knöll, 'Pervasive Health Games', in *Serious Game Design and Development: Technologies for Training and Learning*, ed. by Janis Cannon-Bowers and Clint Bowers (New York: IGI Global, 2010), pp. 260-9.

Research articles

- Feb 2012 Martin Knöll and Magnus Moar, 'The Space of Digital Health Games', *International Journal of Computer Science in Sport*, XI (2012).
- Apr 2011 Martin Knöll, "'On the top of high towers.'" - Discussing locations in a mobile health game for diabetics', *Revista EducaOnline*, V (2011).
- Sep 2010 Martin Knöll, 'Die hygienisierte Stadt: Von der Wahl passender Abflussrohre [...] zur Teilnahme an postmodernen Health Games', in *Die Alte Stadt: Zeitschrift für Stadtgeschichte, Stadtsoziologie, Denkmalpflege und Stadtentwicklung*, XXXVII (2010), pp. 221-36.

Published Conference papers

- Feb 2012 Martin Knöll, 'Mobile Spiele und gesundheitsorientiertes Städte-Design', invited paper given at cooperative workshop *Techniken der Subjektivierung – Technische Grundlagen der Selbststeuerung, Selbststeigerung und Selbstausbeutung*, Forum Interdisziplinäre Forschung, Technische Universität Darmstadt / Graduiertenkolleg "Selbst-Bildungen", Carl von Ossietzky Universität Oldenburg. [publication in preparation]
- Sep 2011 Martin Knöll and Magnus Moar, 'The Space of Digital Health Games', conference paper given at the GameDays 2011, in *Serious Games - Theory, Technology & Practice*, ed. by Josef Wiemeyer and Stefan Göbel (Technische Universität Darmstadt: 2011), pp. 133-46.
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- Jul 2010 Martin Knöll, "'On the top of high towers.'" - Discussing locations in a mobile health game for diabetics', in *Proceedings of Game and Entertainment Technologies 2010*, ed. by Katherine Blashki (Freiburg: IADIS Press, 2010), pp. 61-8.
- Sep 2008 Martin Knöll, 'Diabetes City: How Urban Game Design Strategies Can Help Diabetics', conference paper given at *The First International Conference of Electronic Healthcare in the 21st Century*, City University London, published in *Electronic Healthcare*, edited by Dasun Weerasinghe (Berlin, Heidelberg: Springer, 2009), pp. 200-4.