designing inclusive urban playscapes across sensorial + socio-spatial boundaries

deidre tomlinson

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by:

deidre tomlinson

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abstract

Our emotional experience in public environments is considered to be superficial, although their configurations impact how well we can see, hear, move around, and interact in them daily. 'Lonely, but not alone' describes many of today's urban dwellers. For some people, participation in civic life can be challenging, especially since the barriers (physical, psychological, etc.) faced by some are not always apparent to others, even to designers. This Major Research Project explores the relationship between the level of playfulness expressed in an urban space and user experience. Along with case study investigations and the Delphi method, 42 citizens (estimated to be 21 years of age or older) participated via interviews in Toronto, Canada. An urban design framework of 64 playful design features called *The Multi-Playscape Toolkit* , which can be used by urban designers and architects, has been developed and now contributes to the knowledge base. Using the Toronto context, recommendations are provided to promote more urban playfulness, more lenient policymaking, and more inclusive design practices in our public spaces.

Keywords: *(adult) playfulness, architecture, colour, environmental aesthetics, environmental psychology, inclusive design, playful design, playful spaces, public art, public spaces, sensescapes, sensory design, sensory inclusion, social inclusion, urban design, urban interventions, urban planning*

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1.

introduction

"Urban space is not a clean, abstract design; it is a complex human experience.
It depends on a combination of visual, acoustical, thermal and tactile information fields."

(Salingaros, 1999, p. 43)

In this chapter, a brief background of this study is presented, along with its scope and limitations. It should be noted that the urban public spaces referenced in this research have been narrowed down to only those that are outdoors: parks, squares, streets, etc.

[The Inclusion Imperative in Playful Urban Design]

Playfulness has not yet been fully embraced as a comprehensive academic philosophy or prioritized in urban design policies and practice. Regarding urban playscapes, we need to do better than the cookie-cutter, playground-in-a-box template offered in limited colour schemes and with few additions sold separately. There is not enough research about playful urban environments. Even less when pertaining to adults or older populations. And, even less when looked through the lens of inclusion. While physical, economic, and cultural accessibility are all concerns in their own rights, this Major Research Project (MRP) exclusively focuses on the sensory and socio-spatial dimensions.

1.1. Background.

The design and configurations of our urban environments impact how well we can see, hear, move around, and interact in them. Public spaces — our civic living rooms and playgrounds — should enhance our encounters, while enlightening us about our fellow residents. However, fewer citizens are intentionally spending their time in public spaces here in North America and elsewhere.

Various reasons exist for this weakening of the social dimension of cities, including the increased privatization of modern urban living. For example: "With air conditioning comes the great retreat inside, to movie theatres, shopping malls, homes and restaurants. Life withdraws from the streets." (Efroymson, *et al.*, 2009, p. 78) Fortunately, the questioning of the biological and social trade-offs we unwittingly make in order to live sealed up inside an artificially heated, cooled, and lighted world has begun.

The current form and programming of most urban public spaces are not always welcoming and supportive of citizen engagement. The "thoroughly 'modern city' fails to address many of people's basic psychological needs: to watch, be around, and interact with others at different levels of intimacy, in order to feel part of a community and to reaffirm human connections." (*ibid.*, p. 11-12) This sense of 'non-belonging' and feeling like one's not a full member of one's community can be worse for individuals with sensory limitations. According to Peter Howell and Julia Ionides (2008, p. 113): "Most design and communication is presently sense-specific, but many people have difficulties with one or more sense and an environment designed to take into account all the senses would include and help everyone." This is especially truthful since "[i]t is not just the urban setting in which we live that changes with the passing of time: our own perceptions, sensitivities, and ways of life, as well as our sensory thresholds and levels of tolerance or appreciation of odours, sounds, dirt, darkness, cold, or heat tend to vary." (Zardini, 2005, p. 22)

1.2. Problem.

'Lonely, but not alone' describes a large number of today's urban dwellers. Gone are the days where one would walk down the street and know the name or face of everyone they would encounter. "In the 1970s, nearly 30 percent of Americans reported spending time with their neighbors at least twice weekly; fewer than a quarter reported no interactions with neighbors. Over the past three decades, the number of interactions has trended downward." (Cortright, 2015, p. 6) If (social) matters are not addressed, we can expect these numbers to continue to decrease.

Unfortunately, there is a percentage of all urban populations who find participating — or attempting to participate — in civic life quite (emotionally) difficult. This can take its toll on individuals' psychological health and happiness as membership in groups with high levels of social cohesion is positively related to those individuals' well-being. (Sonnentag, 1996) Playfulness is vital to social cohesion, a type of social expression of belonging to or being attracted to a community. "Building inclusive, healthy, functional, and productive cities is perhaps the greatest challenge facing humanity today … yet a key part of the puzzle lies right in the heart of the world's urban areas: the public spaces." (PPS, 2012, p. 1) Thus, urban public environments should be (re-)designed to better accommodate everyone's needs. During Amanda Burden's TED talk (2014), *How Public Spaces Make Cities Work*, she said: "So, what's the trick? How do you turn a [public space] into a place people want to be? Well, it's up to you … You don't tap into your design expertise; you tap into your humanity." After showing her audience examples of re-zoning that allowed for pop-up cafés and lawn-chairs where cars previously reigned, she acknowledged that "[i]f there is any one lesson that I have learned in my life as a city planner, it is that public spaces have power." Planners should channel this power to help 21st-Century cities become more accessible, and why not through playfulness?

Citizens — with or without sensory limitations or sensitivities — who feel socially excluded avoid frequenting urban public spaces. Spatial experience is much different when one (or more) of our senses is temporarily or permanently impaired. Such challenges can be exacerbated by the fact that barriers faced are not always apparent to others, even designers. "Being in space is not easy. Indeed, at its worst, this feeling results in a desire to make ourselves absent from space; it can mean that 'we acquiesce in being made invisible, in our occupying no space. We participate in our own erasure.'" (Johnston, as quoted in Rose, 1993, p. 143)

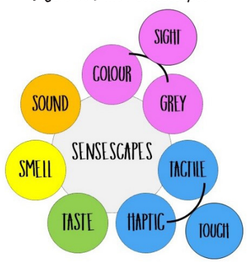
1.3. Purpose.

> "The promise to expand spheres of communication by bringing people to the sites in unprecedented quantities, combinations, and for pleasures conceived as new and liberating, mark each item of the built environment as a new site of consumption and sociability designed to enhance and expand spheres of communication and contact, increasing potential for the circulation of information, and mixing of strangers."
>
> (Blum, 2003, p. 260)

Although spatial experience is subjective, urban design requires more empathy, compassion, and consideration for all. The main objective of my Major Research Project (MRP) is to discover how to develop urban places that go beyond merely supporting citizen coexistence and that, intentionally, encourage citizen engagement in community life — regardless of one's sensory (dis)abilities — using playfulness as a tool.

My research examines how playfulness can be used in urban design to draw more citizens into our public spaces and civic life. This was done by exploring the relationship between the level of playfulness expressed in an urban environment and user (citizen) experience — once I had identified individual urban design features required for designing playful experiences. Sources of playfulness in this project include those that induce 'socio-pleasure' (enjoyment from others' company) and 'physio-pleasure' (enjoyment from the senses). (Jordan, 2000)

[Figure 001]: *The 7 Sensescapes*



My aspirations include the development of an urban design framework, or specifically a playful urban design toolkit, that promotes more playful and more inclusive social experiences in public spaces. To develop my toolkit, I explore, identify, and differentiate the various *sensescapes* in public spaces. These urban landscapes, which can be designed with playfulness, are perceived along the spectrum of human sensory faculties. I have termed them: *sightscapes* (comprised of *colourscapes* and *greyscapes*), *soundscapes*, *smellscapes*, *tastescapes,* and *touchscapes* (comprised of *tactilescapes* and *hapticscapes*). My MRP also addresses the opportunities and challenges that arise when considering the needs of citizens when one or more of their senses are impaired, again, via *sightscapes* (comprised of *colourscapes* and *greyscapes*), *soundscapes*, *smellscapes, tastescapes,* and *touchscapes* (comprised of *tactilescapes* and *hapticscapes*).

In addition to inspiring playful civic engagement, I hope that the locations chosen by architects, urban designers, or city planning departments, in which to implement any successful findings and recommendations, seek to reclaim and (re-)activate underused public spaces.

1.4. Research Question(s).

Do playful design features — across all sensory modalities — increase social inclusion when applied to urban public spaces?

This is technically a two-part question that will investigate:

a. *What are 'playful' design features in urban public spaces?*
b. *Do they, directly or indirectly, increase social inclusion (or citizen participation) when applied to urban public spaces?*

1.5. Scope + Limitations.

Isolating Research Variables.

To truly determine whether a specific design feature of a public space is the driver or agent of any substantiated change would be ideal. Unfortunately, we cannot divorce sensory variables from one another on the street, in real life. "[A]ll the sense modalities are active in even the most apparently monosensual activity. Vision may ostensibly predominate, but it never occurs alone." (Massumi, 2002, p. 140)

Experience Design.

Experience design is not formulaic. It is complex with its unquantifiable variables and uncertain outcomes. Therefore, designing for playful (or any specific type of) experiences cannot guarantee the expected outcome(s). Despite its complexity, outcomes could not be guaranteed due to individual variations — each person senses and perceives the same environmental stimuli under the same external conditions differently. For instance, with colour hues.

Environmental Stimuli.

Due to the varying nature of the different types of external stimuli, such as their reactions in the physical environment and their perceptions by diverse individuals, each *sensescape* was not assessed proportionally in this MRP (i.e., the greater range of *sightscapes* allowed for more focus than *tastescapes*).

Sounds and smells are both diffuse stimuli that propagate through space. They can be invasive, uncontrollable, and hard to design with intention in urban environments.

Also, *tastescapes* may be confined and difficult to 'design,' due to the character and availability of public stimuli in urban spaces.

Sensory Adaptation.

How and how much does sensory adaptation impact this and other similar studies? Marialena Nikolopoulou and Koen Steemers (2003, p. 96) cite that "adaptive opportunity can be separated into three different categories: physical, physiological and psychological." Physical adaptation refers to the alterations made by individuals (to themselves or to the environment) to help them acclimatize to their surroundings. On the other hand, physiological adaptation involves changes in one's physiological responses due to repeated exposure to a stimulus, gradually reducing strain from said exposure. Lastly, psychological adaptation is how everyone perceives the environment differently and "the human response to a physical stimulus is not in direct relationship to its magnitude, but depends on the 'information' that people have for a particular situation."

Investigating the effects of sensory adaptation, however, is beyond the scope of this MRP.

2.

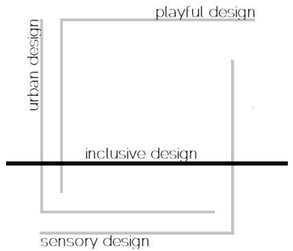
literature review

"The physical boundaries of spaces can be very definite, obvious and determinant of people's actions ... Boundaries of various kinds frame limits to human experience but these limits are part of what get tested through play."

(Stevens, 2007, p. 10)

In this chapter, previous research is investigated to help navigate the current theoretical thinking surrounding inclusive design, urban design, sensory design, and playful design.

[Figure 002]: *Disciplinary Intersection*



2.1. Urban Public Spaces: The Sensorial + Perceptual Dimensions.

Henri Lefebvre (2004) examined sensory information: how it is received and perceived. "It is … multimodal with different sensory modes such as sight, sound, taste, touch, smell and kinesthesis interconnecting, overlapping and collaborating in forming sensory knowledge." (Palipane, 2011, p. 5) But, this not only differs between individuals, it can vary within the same person at different moments in time. "[P]eople from different cultures not only speak different languages but, what is possibly more important, 'inhabit different sensory worlds.'" (Hall, 1966, p. 2) Can sensory world(s), then, even be inclusive?

2.1.1. Sights of the City.

Colourscapes.

Urban designers observe and analyze design, human behaviour, and the interface of the two. Colour is a fundamental component of the scrutiny, contingent on user group(s), use(s), space size, space shape, type of light source, geographic location, etc. "[T]he hue … also known as the actual color makes a huge difference to each individual in their own way. The intensity or saturation level can create a sense of comfort, security and calmness." (Taylor, 2013, para. 3) In built environments, polychromy (meaning many colours) can make physical spaces visually appear to be more attractive, relaxing, or even meaningful.

> "Color in social life has indeed a great role to fill. Color tries to cover over humdrum daily routines. It dresses them up."
>
> (Léger, 1943, p. 45)

However, it can also do the contrary. Chosen colours for urban backdrops and foregrounds, thus, should be elected based on collective preference, not arbitrariness. As of late, urban designers and architects have taken advantage of colour's power to animate physical surfaces. Additional examples of such (social) successes would highly beneficial to today's urban dwellers.

Fernand Léger (1943) recurrently stressed the significance of colour. "Color is a raw material indispensable to life. At every era of his existence and of his history, the human being has associated color with his joys, his actions, and his pleasures." (p. 40) Colours carry connotations. They can appear far-off or close-by, seem heavy or lightweight, and even be coupled with certain scents, tastes, sounds, and temperatures. Colour consultant Margie Taylor (2013, para. 5) reported, "I also have an adult friend that is colorblind and changed his world with colors that were comforting." The act of seeing colours is multifaceted, engaging human perception and experience. Such processes are influenced by one's gender, age, personality/mood, cultural background, and socioeconomics — though Tofle, *et al*. (2004) state there is no evidence to indicate a one-to-one association between a certain colour and a particular emotion like red with anger and blue with calmness. But, how do those who cannot visually experience colour interpret or express such emotions in public space?

The City Illuminated

Bright sunlight radiates positivity and reflects feel-good vibes. Vanessa M. Patrick and her fellow collaborators from Ghent University in Belgium determined that "our crush on glossy [objects] is rooted in a primitive desire for water as a vital resource." (Jaffe, 2014, para. 3) While humans are more attracted to shiny things, "we don't always prefer glossy to matte. Sometimes glossy interferes with readability (say, a sign that reflects bright light)." (*ibid*., para. 10)

The City After-Hours

The city during the day and the city at night are congruous, but not equal. This is well illustrated in the opening quotation from Robert MacFarlane about his solo nighttime walks in Cumbrian Mountains, with which Nina J. Morris (2011, p. 315) begins her article:

> "At night new orders of connection assert themselves: sonic, olfactory, tactile. The sensorium is transformed. Associations swarm out of the darkness. You become even more aware of the landscape as a medley of effects, a mingling of geology, memory, movement, life. The landforms remain, but they exist as presences: inferred, less substantial, more powerful."
>
> (MacFarlane, 2007, p. 193)

The explicit and identifiable suddenly becomes more obscure and abstract as the sun sets. Jane Livingston (1987) poetically agrees with the aforementioned: "To visit a night-wrapped urban landscape is to experience a minutely calibrated series of adjustments. The senses gradually open up to the deprivation they face. The whole porous skin contracts imperceptibly; the ears tune in to the particular desultoriness of the half-sleeping world; one's sense of smell is more keenly aroused in the subtle wariness stimulated by the nocturnal environment." The nighttime city is touched on in this MRP with respect to visual (and applicable non-visual) playful design elements.

Vision Privilege.

The human eye is prioritized in urban design and architecture.

> "[A]spects of the city that characterize the day and the night as well as the changing sessions — the luminosity, sounds, smells, and surfaces of the places in which we live, work, and play — suggest modes of experiencing the urban environment that challenge the dominance of the eye."
>
> (Lambert, 2005, p. 14)

The elements of urban spaces tend to be centred around the visual — "[w]hether the aim was to define a regular space through control of alignments and heights or through definition of materials and colours, or to accentuate contrasts and differences." (Zardini, 2005, p. 20) Curator and architect Mirko Zardini has been intentionally challenging that traditional, out-of-date protocol in his own right. In conversation with Metropolis Magazine, he stated, "I feel there is a moment in which you need to redefine the discourse, because the old paradigm and ideas are vanishing, especially in the context of how we live." (Makovsky, 2012, para. 1) Designers, planners, and citizens alike are aware that a significant number of any population have vision limitations or impairments. Attitudes towards sensory urbanism need to shift.

2.1.2. Sounds of the City.

Zardini (2005) claimed that "[d]espite the proliferation of noises that are very much alike (usually produced by mechanical and electronic devices), every city still has its own distinct aural environment, or soundscape."

> "'Soundscape' refers to both the natural acoustic environment (animals and sounds from trees, water, weather, etc.) and sounds created by humans (musical compositions, human activities, sounds of mechanical origin, etc.) But noise is more than just a fact of urban life — it can actually affect human well-being."
>
> (DeepRoot, 2017, para. 2)

The parameters, guidelines, and compliances around *soundscapes* vary from city to city, neighbourhood to neighbourhood. "Municipal laws regulate sound in an abstract way, in quantitative terms, measuring the decibels produced by the people, animals, devices, and vehicles that fill the city." (p. 168) Even with by-laws, urban designers can play around with sound and, perhaps, should be experimenting more with this modality.

2.1.3. Smells of the City.

Unlike urban soundtracks that have begun to broadcast similar tunes, "[i]ncreasingly the whole world has come to smell alike: gasoline, detergents, plumbing, and junk foods coalesce into the catholic smog of our age." (Illich, 1985, p. 47) Zardini (2005, p. 276) adds that we have adapted to these scents, which has reduce our awareness of their presence. "Smells that are now universal and specific smells, produced by particular activities, sources of energy, aromas and spices, plants, flowers, animals, and garbage overlay one another, forming landscapes of smell that are invisible, but nonetheless present and real." Currently, the smell profiles of cities tend to be coincidental outcomes of other urban planning choices like zoning.

"A whole segment of society's imaginative world is revealed in the odour of the environment." (Pitte, 1998, p. 10) Just as aromas are diffuse, pervasive, and can sometimes have no bounds, so is creativity. Urban designers should leverage this and maximize the innovative potential that smells can possess since "[i]t is only when our faculty of smell is impaired for some reason that we begin to realize the essential role olfaction plays in our sense of well-being." (Classen, et al., 1994, p. 1)

2.1.4. Tastes of the City.

There are particular tastes that people nostalgically associate with childhood experiences. These tend to be sugar-coated, calorie-laden, saccharine edibles. As adults, the menu of our guilty gastronomical pleasures has matured and expanded to embrace salty, sour, and bitter palettes, plus the potent mixes of caffeine and alcohol. "The status of coffee … is a prime example of the two-headed commodity, noted on the one hand as a stimulus contributing to the productivity and efficiency of labor and, on the other, as a savory source of delight." (Blum, 2003, p. 162)

Can we playfully communicate and interrelate with each other through taste? If so, how? Could one enjoy and derive pleasure from tastelessness in food or drink? In this MRP, questions like these are investigated.

2.1.5. Feels of the City.

Not only do urban public spaces with trees attract more citizens, the number of trees present is directly proportional to number of individuals who simultaneously occupy said spaces: more trees, more people. (DePooter, 1998) Trees truly are one of the top urban assets; they impart beauty all-year-round (green leaves, autumnally-hued leaves, no leaves), filter our air, and are the habitats of various species. On hot, sunny days, it cannot be denied that their full canopies lend us comfort in the form of naturally-regulated sunblock and temperature control. Like with shade, we tend to gravitate towards things and spaces that evoke pleasant, physical feelings: smooth textures over rough, soft consistencies over hard, etc. So, our public spaces should reflect such qualities.

Many modern urban surfaces are becoming smoother and shinier, serving as 2-D and 3-D informational and/or entertainment screens. Thomas Treggiden (2015) believes that "[t]actility might seem counter-intuitive in the digital age, but it has perhaps never been more important — in design terms, it's the strongest affirmation of our humanity we can make." He understood then why creative director of Design Academy Eindhoven Thomas Widdershoven "described tactility as 'a political statement, a social statement, a human statement' in his welcome address to the school's 2015 graduate show." (para. 10) As a bonus, the introduction of tactile electronic monitors allows for the presentation of information in various (refreshable) forms like digital braille displays, making cities more inclusive. Sadly, such technology is not yet ubiquitous.

Where tactility is passive, haptics is the active, bi-directional feedback system, which simulates taction (or touch) through the use of vibrations, forces, or gestures. An action like swinging represents a playful haptic design feature.

> "Haptic architecture, as anticipated by [Alvar] Aalto and theorized by [Juhani] Pallasmaa, aspires to plasticity, tactility, and intimacy in a bold rebuke to Modernist architecture's striving for clarity, transparency, and weightlessness."
>
> (Howes, 2005, p. 329)

Both tactile and haptic limitations and sensitivities can be the result of skin injuries (i.e., burns), physical damage to nerves, poor circulation, or symptoms of certain disorders. The complete loss of one's sense of touch may negatively impact walking, dexterity (i.e., holding objects), and other motor movements. Such invisible impairments often go unnoticed and, thus, unconsidered in the design of the built environment.

2.1.6. (All) Sensations of the City.

Sensory urbanism, as all types of urbanism, is partisan. "The sensorial realm is manipulated to complement the dominant cultural discourse and not challenge it." (Palipane, 2011, p. 4) David Howes (2005, p. 330) highlights disparities in the experiential domain: "[Spatial] tools such as CAVE [Cave Automatic Virtual Environment] occlude the role of some senses in the production of architectural experience, while extending the roles of others (e.g., sight over smell, kinaesthesia over texture), and thus serves to perpetuate certain sensory and social hierarchies." We should take a lesson from Chris Downey, a blind architect: "By paying greater attention to all the senses, environments can be more enjoyable and stimulating, without becoming more stressful." (as quoted in Treggiden, 2015, para. 3)

2.1.7. (All) Perceptions of the City.

Howes (2005, p. 322) states it well: "The perceptual is cultural and political, and not simply … a matter of cognitive processes or neurological mechanisms located in the individual subject." This has trickled into humans' emotional training, which lags far behind the advance nature of our thinking. Siegfried Giedion (1947, p. 68) accounts that the "whole disaster of nineteenth-century architecture derives largely from this divergence." He also mentioned: "In our period, feeling seems to be much more difficult than thinking. Man is able to invent nearly everything he wants in science and in all kinds of gadgets; but as soon as we approach the emotional, or, if you prefer, the aesthetic sphere, we meet the strongest resistance. This was not always so. It was often the reverse." We should, again, strive towards the emotional, deep within our humanity.

2.2. Urban Public Spaces: The Interactive Dimension.

A city is not a city without people. Lefebvre (1996) reminds us: "Urban life suggests meetings, the confrontation of differences … as a place of encounters … the urban become what it always was: place of desire, permanent disequilibrium, seat of the dissolution of normalities and constraints, the moment of play and of the unpredictable." (Stevens, 2007, p. 38)

According to Quentin Stevens (2007, p. 26), "'play' is used as counterpoint to behavior which is 'normal' – everyday, conventional, expected, calculated, practical, constant." He continues to describe it as "a concept which highlights the potentials of urban experience for promoting and framing active, creative, and above all public behavior." (p. 28-29)

2.2.1. Designing for Play(fulness).

Play, often compared to oxygen, should not be deemed a guilty pleasure, a 'luxury' low down on the hierarchy of human needs. Playfulness tends to derive joy, delight, or means of escapism physically, psychologically, emotionally, and/or ideologically. Miguel Sicart (2014, p. 29) asserted that "can be used for disruption, revealing the seams of behaviors, technologies, or situations that we take for granted."

"Designing for play means creating a setting rather than system, a stage rather than a world, a model rather than a puzzle." (Sicart, 2014, p. 90) Playful design offers multiple contexts to be interpreted infinitely by any- and everyone. Individuals can create meanings for themselves without impinging on those of their neighbours … all while capable of re-creating them whenever they wish. But, needless to say, designing for playful experiences is very complicated — if at all possible.

2.2.2. Designing for Urban Play(fulness).

Western thinking about the city, such as Guy Debord's critique of the city as a commodified 'spectacle' (2005) and the Situationists' ludic interventions in urban space (1958), has toyed with the importance of playfulness. The (never-ending) mission to put an end to some of our cities' most urgent issues could be facilitated by tapping into the playful potential in urban surfaces, structures, and systems. A temporary playful urban intervention can be more beneficial than a permanent one, as municipalities may be more inclined to pursue implementation of less costly, and more experimental, strategies.

2.3. Urban Public Spaces: The Socio-Political Dimension.

> "Physical space in urban environments can be seen as two extremes of a spectrum: those consisting of large distances, which induce feelings of coldness and grandeur and those of small distances, which call for intimacy and privacy. However, most contacts often take place in the in-betweens, the semi-private, and the half public."
>
> (Grønbæk,*et al.*, 2012, p. 230)

Research demonstrates that the visibility of individual contributions to the greater whole is a precondition for successful management of the commons. Urban sociologist Saskia Sassen believes that citizens become more fully engaged with complex open processes when the underlying technologies and infrastructures are made visible, something that applies to both physical infrastructures and software processes.

2.3.1. The Deficiency of Urban Public Spaces.

The shrinking and impoverishment of so-called public space is now a prominent theme in contemporary urban debates. As acknowledged by Zardini (2005, p. 19), "[s]ome of the activities once carried out in public space have been taken over by new forms of communal space (i.e., space that is privately owned but in public use …), while other functions of communication and entertainment that originated as communal have been transferred to the private sphere by means of the television and computer."

Interstitial spaces that exist between structures and forms, too, are often neglected. "Urban public open space itself is one of the luxuries afforded by excess productivity, but little seems to be known about how people take advantage of this luxury, or how the urban environment in general frames experiences of excess, intensity and exposure to risks." (Stevens, 2007, p. 32) Designers should grab the opportunity to create on these (blank) canvases. They can evolved into zones of social interaction and chance encounters.

2.3.2. Designing for Inclusivity.

An urban public space that is accessible is one where everyone has equal opportunity to enter, leave, and occupy. All forms of accessibility (physical, sociocultural, geographical, etc.) grant citizens freedom. Robert Rogerson and Gareth Rice (2009, p. 152) also proposed a 'moral geography' where "… greater recognition is given to the necessity of a plurality of sensory elements — some of which may be perceived by some as dissonant — to make up the memorable experiences of architecture." Such a space would be more inclusive, which is quite different to places where "aesthetic codes are inscribed into the regenerated public areas, and strategies of social exclusion are disguised through sensuous-aesthetic arguments.'" (Degen, 2008, p. 30)

Cities are often interpreted to having personalities. As such, some are sometimes called friendlier than others. A large challenge of playful urban design can be to working against a (imaginary?) municipal culture of coldness, judgement, and closed-mindedness by its residents experienced in public spaces. Both people and places can be unkind. "According to Steven Flusty, certain characteristics are introduced into urban spaces in order to make them repellent to the public. Flusty's discouraging list includes: 'stealthy spaces' (spaces that cannot be found); 'slippery spaces' (spaces that cannot be reached); 'crusty spaces' (spaces that cannot be accessed); 'prickly spaces' (spaces that cannot be comfortably occupied); and 'jittery spaces' (spaces that cannot be utilized unobserved)." (Flusty, 1997, as quoted in Zardini, 2005, p. 20)

CIAM (1953, p. 94) declares that "[l]ife today results, or should result, from the association of people in groups of different dimensions." This can be facilitated by playful urban design. With its ability to transcend sensorial, social, and spatial barriers, playfulness can and should be utilized and recognized as an influential, urban design tool that can aid in the creation of pluralist urban environments that provide "authentic experiences through the acknowledgment of social difference." (Palipane, 2011, p. 3) Lefebvre (1996, p. 129) believes "[p]lay is shaped by urban social conditions: the density and diversity of people, the mixing of their activities, the unpredictability of their behavior, their differing expectations and the unfamiliarity of their expressions all contribute to instability and 'the dissolution of constraints.'" Now, my MRP aspires to use play to dissolve more of the existing constraints on citizens.

2.4. Summary.

data collection

"Although currently available design tools can render individual sensory spaces,
a common platform is needed to visualize and juxtapose these diverse sensory environments."

(Erwine 2014 p. 303)

In this chapter, the research design, methodology, and methods chosen are explained. Statistical information and significant data are also presented.

3.1. Research Design.

My research project would be classified as a descriptive and exploratory study.

Descriptive: My research will aim to identify which (sensorial) attributes are considered to be playful design features in urban spaces.

Exploratory: This type of study aims to delve into relatively 'foreign scholarly territory,' in both academia with very little existing research and in practice seldom applied, by identifying: (a) the boundaries of the problem space in which the issues, opportunities, or situations of interest are likely to exist, and (b) the significant factors that might be found and mat be of relevance to my research. My MRP looks to see if public places become more socially inclusive — of citizens representing a range of sensory abilities — through the application of playful design elements to cities' *sensescapes*.

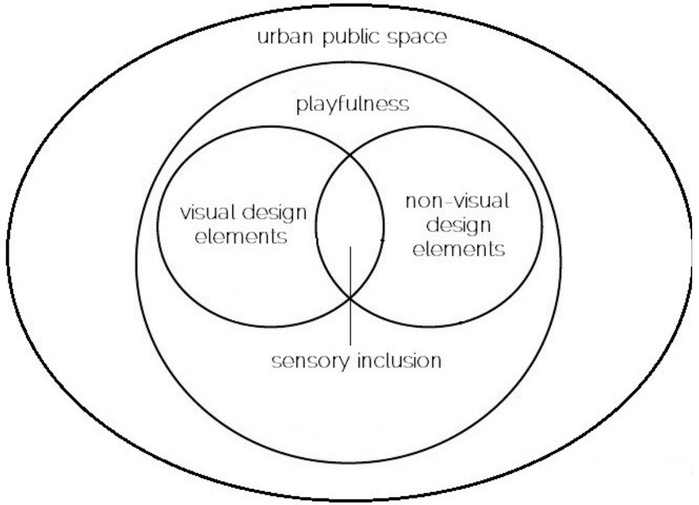
3.2. Methodology.

My research taken on a phenomenological approach. It is qualitative in nature, utilizing both primary and secondary data.

3.2.1. Conceptual Framework.

Independent Variable: *Level of (Measured) Playfulness*
↓
Intermediate/Dependent Variable: *Sensory Inclusion/Participation*
↓
Dependent Variable: *Social Inclusion/Participation*

[Figure 003]: *Conceptual Framework*



3.2.2. Theoretical Frameworks.

The abundance of normative theories *in* urban design is truly as concerning as the non-existence of a comprehensive theory *of* urban design. "How might the insights (inscents, insounds, etc.) of the emergent fields of sensory geography, sensory history, and sensory ethnography be employed by architects and urban planners? How might the architecture of the senses — i.e., the study of the cultural construction of the sensorium in different times and places — help inspire an architecture *for* the senses?" (Howes, 2005, p. 328) [emphasis mine]

The Urban Ambience Theory: Sometimes spelt Urban Ambiance Theory, it is the qualitative assessment of the multi-sensorial atmosphere of an urban environment. Several elements "create an urban ecology of the senses which provides access to the socio-aesthetic framework of ordinary experience. How does contemporary urban space harness the senses of city dwellers? How does sensory experience work both as an analyser and operator of current urban change?" (Thibaud, 2010, p. 4)

The Playful Experiences (PLEX) Framework: The 22 PLEX categories, devised by Korhonen, *et al.* (2009), encompass a wide range of experiences. Meta-categories that are relevant to my study are Imagination [Expression, Fantasy, Simulation] and Excitement [Thrill, Subversion, Humor]. Arrasvuori, *et al.* (2011) describe the utilization of a range of PLEX categories as stimuli throughout the design process of an interactive miniature garden for social interaction. However, it is known that integrating PLEX into spatial designs might not always elicit explicitly playful experiences in those spaces.

The Multidimensional Sensory Framework: 'Multidimensional space' is a term some academics use to convey configuration(s) of overlapping sensory zones. "This conceptual framework involves understanding sensory spaces as volumetric shaped spaces that can be inhabited — spaces of warmth, color, light, sound, smell, texture, and the personal and cultural spaces brought to life through habitual use patterns. These spaces are understood as existing independently from the geometric space of walls and openings. Each of these spatial dimensions has identifiable characteristics of location, shape, boundaries (rigid or porous), intensity, duration, etc., that can be designed and perceived just as we design the geometric space." (Erwine, 2014, p. 299)

3.3. Methods.

The methods used in this research study include: (a) an interdisciplinary bibliographic review in the fields of urban design, architecture, public art, colour science and theory, sensory perception, environmental aesthetics, environmental psychology, etc. [Chapter 2.0]; (b) case study investigations; (c) the Delphi method, with respect to the aforementioned fields; and (d) survey interviews.

3.3.1. Case Study Investigations.

Case studies can be grouped into three categories: exploratory, descriptive, and explanatory. [Descriptive case studies may also be exploratory, if relatively little research has been done in the area. The ones chosen for this project can be classified as both.] Because of this, it was decided that case study research would be a highly-suitable methodological approach for this project.

The following examples of playful urban spaces that provide social benefit to citizens and visitors alike were selected and examined.

"21 balançoires" | montréal, canada

One of the objectives of *21 Balançoires* was to encourage citizens to engage with this abandoned area in Montréal by being a "collective instrument that stimulates ownership of the space, bringing together people of all ages and backgrounds." (IXDA, 2013) Consisting of a series of 21 musical swings, each one triggers different notes when in motion, determined by how high a person swings. The swing's colour indicates the instrument it plays: piano, harp, guitar, vibraphone. The instruments are distributed differently within each set of three swings to create different musical configurations, which fit harmoniously with the ambient noise of the urban environment. When used all together, the swings compose a musical piece in which certain melodies emerge only through cooperation; a game where you achieve more collectively than individually.

playful design features: (bright) colours, bells/chimes, swings, interactive (analogue/digital).

"appearing rooms" | perth, australia

Appearing Rooms is a permanent installation at Forrest Place in Perth, Australia. "Laid out in a 3 × 3 square grid, a programmed water pavilion creates a labyrinth of fluctuating water walls, constantly subdividing the plan into various combinations of nine appearing and disappearing rooms. The water walls randomly rise and fall [to a height of 230 m], defining different configurations of the space by changing shape and appearance every ten seconds. Moving from square to square, visitors find themselves enclosed in everchanging interior spaces or suddenly pushed to the exterior, without any means to control the confinement or exclusion." (Hein, n.d., para. 1)

playful design features: water feature (jets), transparency, element of surprise!, interactive (analogue).

"around about" | grand-métis, canada

"Three large mobile harrows are placed inside a gravel field. These instruments, whose design is inspired by traditional agricultural machinery, rake gravel in a circular manner. Here visitors will be active participants in the composition and the de-construction of the garden. Unlike the Japanese Zen garden, which is designed to be seen from the outside, this garden will be viewed, created and experienced from the inside, through a joyful and playful activity. As visitors walk away from the roundabouts, their footsteps violate the orderly pattern of the gravel. Once they get back on the roundabouts and spin them, the garden returns to its ordered perfection." (Reford, n.d., para. 1)

playful design features: curvature, sandy texture (gravel), wheels, pushing motion, interactive (analogue).

"be a pin up!" | london, u.k.

Be a Pin Up! was created by Lulu Guinness for Clerkenwell Design Week. A life-sized pin-art installation, visitors left the mark in portrait-form beneath St. John's Gate in London. Guinness told Vogue Magazine: "I decided to get involved with Clerkenwell Design Week as it is London's premier celebration of design and it was exciting to take part by designing this one-off commission. I also wanted to do something that people could interact with, which is why I came up with the idea of the Be a Pin-Up installation." (Alexander, 2011, para. 2)

playful design features: curvature, pushing motion, interactive (analogue).

"cloud gate" | chicago, u.s.a.

Cloud Gate in Millennium Park is affectionally nicknamed 'the Bean' by Chicagoans and the international fans alike. Inspired by liquid mercury, "the 110-ton elliptical sculpture is forged of a seamless series of highly polished stainless steel plates, which reflect Chicago's famous skyline and the clouds above. A 12-foot-high arch provides a 'gate' to the concave chamber beneath the sculpture, inviting visitors to touch its mirror-like surface and see their image reflected back from a variety of perspectives." (City of Chicago, n.d., para. 2)

playful design features: reflectance/shine/gloss, mirrors, curvature, smooth texture, interactive (analogue).

"confetti" | madrid, spain

"The most important feature of Confeti (Confetti) is that it doesn't sleep during the day, worrying the pedestrian with cables, lights off, and 'gray' structures, but becomes an active system which dialogues with citizens, in a sparkling plane that paints colours on the ground, using the largest lighting source, and the most economical we have: the sun. In sunny mornings, children play with dots that colour the granitic soil, young people enjoy a snack of colours, and old people chat around an orange circle which acts as a 'moderator' … When the night falls, these colour plates are transformed into a bright confetti [*sic*] falling from the sky and express joy … exiting the subway and find a ceiling that covers us by surprise, which reflects all the light it receives, and generates a large coloured carpet, on which people meets [*sic*]." (Sebastian, n.d., para. 3)

playful design features: (bright) colours, rainbows, (artistic) lighting, translucency (glass), random arrangement (dispersion).

"echoes" + kitsilano beach | vancouver, canada

Echoes is a whimsical series of 16 stainless-steel chairs. "Each chair is unique in design and has an inscription in French or English reflecting aphorisms of everyday emotions and dreamlike thoughts. The chairs have been positioned to encourage human interaction and communication and installed so that when sunlight hits them at the perfect angle, the phrases and aphorisms are projected onto the ground below as one large poem." (Vancouver, n.d., para. 2)

playful design features: trees, water feature (beach), water sounds, waves, sandy texture (sand), malleable form (sand), "beach" smell, ice cream, seating, reflectance/shine/gloss, mirrors, (engraved) typography.

"fish bellies" | san macros, u.s.a.

Artists Blessing Hancock and Joe O'Connell created a bioluminescent, biomorphic scene that changes colours (and their intensities) when touched. "Fish Bellies is an interlocking series of glowing enclosures that represent a school of fish. We are celebrating social and biological diversity by making a comparison between the life of the San Marcos River and the lives of Texas State University students. Our hope is that this comparison will spark additional interest in the unique ecology and biology found on the Texas State University campus." (Hancock, n.d., para. 2)

playful design features: (artistic) lighting, (bright) colours, translucency (acrylic), grass, curvature, seating, touch-activation (sensors), interactive (digital).

"funnel wall" | dresden, germany

Installed in 1999, *Funnel Wall* is "part of a complex called the Neustadt Kunsthofpassage (literally 'Art Courtyards'): a set of five courtyards which each have a different theme." (Longdon, 2017, para. 1) Sculptor Annette Paul and designers Christoph Roßner and André Tempel, who all live in the building, created the intricate network of pipes, funnels and spouts with optimal acoustics to amplify the rain.

playful design features: (bright) colours [blue], water feature (rain), water sounds.

"happy wall" | copenhagen, denmark

Happy Wall was erected on the metro construction site of Kgs Nytorv in Copenhagen, Denmark. "The piece consists of 1728 wooden pixels which can be flipped to display messages, pixelart and other in major scale in the public space. A privillege [*sic*] usually reserved for major cooperations and brands. In the year that Happy Wall was up at Kgs Nytorv, more than a million people interacted with it, more than 6500 people posted their work to Instagram and it was used in several promotional videos and was featured in various news channels." (Dambo, n.d., para. 2)

playful design features: (bright) colours, rainbows, writing, interactive (analogue).

"helvetictoc" | durham, u.k.

Helvetictoc began as a web application that mixed typography, minimalism, and randomness. "Reading time in words rather than reading it from a clock face activates other parts of the brain and pushes us to pause and 'feel' time. The randomly generated sentences, the tone, and the relative imprecision remind us of long-lost interactions with strangers when asking the someone for the time was a much more common ice-breaker." (Lumiere, n.d., para. 2) It aspires to be a cute homage to life pre-smartphones, when people would ask others for the time.

[*Helvetictoc* can be seen live at www.helvetictoc.com.]

playful design features: (artistic) lighting, typography (digital), digital screens.

"ifo (identified flying object)" | london, u.k.

IFO (Identified Flying Object) by Jacques Rival is installed at King's Cross in London, "[s]tanding at 9m high and magnificently lit in neon, it invites visitors to walk through its bars and enjoy the swing that's in its centre." (Rival, n.d., para. 1) Although this huge birdcage is usually on the ground, it is sometimes elevated into the sky to freely fly.

playful design features: (artistic) lighting, (bright) colours, rainbows, curvature, swings.

kensington market | toronto, canada

A colourful microcosm of the Canadian mosaic, this gem in Toronto, Canada is a kaleidoscope of dynamism and diversity. "Kensington Market has been a neighborhood of inclusiveness, adding layers of cultural richness and variety with each successive wave of immigration to Toronto over the past century." (Parks Canada, 2015, para. 2) The streets are closed here for Pedestrian Sundays, permitting all types of fun!

playful design features: (bright) colours, rainbows, murals, flowers, music, spices, incense, ice cream, savoury food (interna-tional cuisine), fruits, alcoholic beverages, coffee, seating.

lerner garden of the five senses | boothbay, u.s.a.

Complimentary samples are to be enjoyed at Lerner Garden, as sweet, savory, minty, and bitter, plants can be found in abundance. The inspiration for Lerner Garden: "Af-ter an avid gardener and one of the most active Garden members was suddenly struck blind due to an illness, the CMBG Board of Directors was moved to include a special garden in the master plan that would appeal to all of the senses, allowing the blind and others with disabilities to fully enjoy both being in the garden and actively gardening." (Landscape, n.d., para. 7)

playful design features: (bright) colours, trees, (edible) flowers, grass, water feature (fountain, waterfall, ponds), wood, spices, seating, rocks, bigness (boulders), (embossed) typography), smooth texture (rocks), sandy texture (gravel).

"les deux plateaux" | paris, france

Les Deux Plateaux (sometimes called *Colonnes de Buren*) is 260 striped columns installed in the courtyard of the Palais Royal in Paris. Designed to extend to different heights, the columns create a visual rhythm throughout the space as well as visual contrast — in colour (black and white) and style of the artwork and surrounding architecture (modern and classical, respectively).

playful design features: stripes, contrast (visual), curvature, seating, random arrangement (dispersion), alternating sizes (heights), water feature (jets).

"light graffiti" | london, u.k.

"Light Graffiti is an interactive installation that invites audiences to use a torch or any other source of light to paint the street. The installation uses a USB camera, projector and computer to transform light sources into a paintbrush, allowing users to repaint the space as they wish. Using this unconventional 'spray can', everyone is welcome to experiment with different colours, strokes and patterns on the street, the walls or on oneself." (Floating, n.d., para. 2)

playful design features: (artistic) lighting, (bright) colours, writing, interactive (analogue/digital).

"mi casa, your casa" | atlanta, u.s.a.

Make yourself at home at the High Museum of Art Atlanta in *Mi Casa, Your Casa*, with its hammocks, swings, bubbles, easels, and chalk. "The installation features 40 three–dimensional open frames in the shape of a house … The home, a simple metaphor of 'warmth & welcoming'. *Mi Casa, Your Casa* is inspired by the lively street markets 'Mercados' of Latin America where human connections are made every day." (Esrawe, 2014, para. 1)

playful design features: (bright) colours [red, green], hammocks, swings, grass.

"redball project" | worldwide

Why red?

According to artist Kurt Perschke, red is the colour of energy, love, and invites a sense of play. He states: "On the surface, the experience seems to be about the ball itself as an object, but the true power of the project is what it can create for those who experience it. It opens a doorway to imagine what if? As RedBall travels around the world people approach me on the street with excited suggestions about where to put it in their city. In that moment the person is not a spectator but a participant in the act of imagination. I have witnessed it across continents, diverse age spans, cultures, and languages, always issuing an invitation." (RedBall Project, n.d., para. 2)

playful design features: (bright) colours [red], curvature, balls, inflation, bigness, pushing motion, element of surprise!, interactive (analogue).

"révolution" | paris, france

"With its 40 meters path … Revolution takes its inspiration from a spiral stairway … deconstructs the symbol of vertical ascension with which it is normally associated. Here the sculpture allows one to enter an infinite cycle of revolutions where everything rises only to descend according to the rhythm of evolutions and transformations. The visitor can climb up the stairway and physically experience the idea of an eternal return, in a time loop where what comes, is similar to what returns." (de Broin, n.d., para. 1)

playful design features: spirals, curvature, waves/undulations, up-&-down motion, interactive (analogue).

"sPins" | london, u.k.

"sPins is an audio-visual installation inspired by playfulness — roly poly toy and the natural instinct of brushing long grass. sPins translate the gesture of human touch into an playful interactive performance. Traces of light, movement and ambient sound propagate the network enticing others to 'play' whilst forging the most basic human need of social connection." (Petrusevski, n.d., para. 2)

playful design features: (artistic) lighting, balls, bells/chimes, pushing motion, rolling motion, interactive (analogue/digital).

"spun" | london, u.k.

"After extensive research and experimentation, Heatherwick Studio produced an ergonomic form that works as a chair, whichever way it is rotated. To achieve this in a single form, the seat had to be capable of serving as a back support and the back support had to make a comfortable seat. The studio also collaborated with the Italian furniture manufacturer, Magis, to develop a version made with a different kind of rotational process, rotation-moulded plastic." (Heatherwick, n.d., para. 2-3)

playful design features: seating, spinning motion, interactive (analogue).

sugar beach | toronto, canada

"[A] series of hard rock candies with colored stripes and dozens of pink umbrellas are scattered across a sandy wedge of beach along the Jarvis Slip. Integrating the future Waterfront Promenade, along with a plaza for programmed and unprogrammed events, the design playfully adopts some of the most enduring elements from Toronto's emerging landscape identity — beaches, bedrock, trees, and water — as well as the urban horizon and a trace of the city's past industrial mood." (Claude, n.d., para. 1)

Also, the beach's neighbouring Redpath Sugar Factory emits the aroma of refining sugar into the atmosphere.

playful design features: (bright) colours [red, pink, green], stripes, trees, grass, sandy texture (sand), bigness (rocks), seating, water feature (lake, water jets), water sounds, 'refining sugar' smell.

superkilen | copenhagen, denmark

Superkilen, a kilometre-long stretch in Copenhagen, is the creative collaboration between BIG Architects, Superflex, and Topotek 1, extending through the multicultural district of Nørrebro. Its central concept is to operate as a large exhibition displaying a global collection of items from the 60 nationalities claimed by t he area's residents. (Frearson, 2012) This public park consists of three colour-coded areas — distinguished by red, green, or black ground — with each providing its own environment.

playful design features: (bright) colours, rainbows, stripes, curvature, swings, gym equipment.

"take a seat, make a friend" | worldwide

"Using real people in unsuspecting circumstances, the SoulPancake team creates larger than life props to prompt people to step outside of their comfort zones and truly explore what it means to be human in a fun, quirky, and joyful way." (SoulPancake, n.d., para. 1) *Take a Seat, Make a Friend* is a self-supporting wooden pit of colourful, plastic balls with life's big questions written their surface. There's enough room for two people to sit in the social crate at a time to talk to each other … a make a friend!

playful design features: (bright) colours, rainbows, balls, seating, interactive (analogue).

"the dream city" | doha, qatar

"THE DREAM CITY … is a combination of colorful sculptures and multi colored sections of sand of varying texture and is designed to capturing the imagination of the participants and encourage them to play with form and color. The project will evolve with the participants as colorful expanse of sand which will never come back to the starting point (entropy process). We invite you to explore a variety of weights, sand, colors and patterns that may arise during your barefoot walk through the project." (Kalinowski, n.d., para. 2) Some sand will inevitably escape its box, which can also be a seat, and mix with other colours.

playful design features: (bright) colours, rainbows, sandy texture (sand), malleable form (sand), seating, circles, boxes, interactive (analogue).

wavedecks | toronto, canada

The WaveDecks are a series of wooden structures constructed on the as part of the revitalization of the Harbourfront, rising as high as six feet above the ground and dipping to almost touch the surface of Lake Ontario. Inspired by the Canadian cottage experience, "[t]hey extend the public realm out over the lake in a playful imitation of the iconographic Canadian Shield shoreline." (DTAH, n.d., para. 3)

playful design features: curvature, waves/undulations, seating, wood, up-&-down motion.

3.3.2. Interviews.

Many believe that "[q]ualified judgment is reserved for those with special knowledge and insight into the architectural discourse, and what constitutes good design therefore becomes a matter of judgment by the designer's professional peers, rather than of other actors in the urban development process or the general public." (Shirvani, 1985, as cited in Steinø, 2003, p. 182) I, however, feel that community contributions can be just as valuable. Thus, participants chosen using non-random sampling included two groups: (1) art, design, and planning professionals and (2) the general public — those with and those without sensory limitations/sensitivities. With both groups, I intentionally created diverse memberships of participants, based on age, gender, ethnicity, etc.

Expert Interviews.

Carrying out this part of my research entailed asking questions to willing art, design, and planning professionals with expertise in inclusive design, urban design, sensory design, or playful design and conducting a brief interview either in person or via email.

Cheryl Atkinson | *Architect, Atkinson Architects*
Christopher De Sousa | *Program Director, School of Urban & Regional Planning [Ryerson University]*
Jeffrey Elkow | *Planner II / Heritage Coordinator, Township of King*
Tony Garcia | *Principal, Street Plans Collaborative*
Dennis Leyva | *Public Art Coordinator, City of Miami Beach*
Martin Maillet | *Program Coordinator, City of Montréal*
Ben Mills | *Vice President, Public Art Management*
Norma Rantisi | *Associate Professor, Dept. of Geography, Planning & Environment [Concordia University]*
Cheryl Sim | *Curator, DHC/ART Foundation for Contemporary Art*
Jutta Treviranus | *Director, Inclusive Design Research Centre*

Citizen Interviews.

Carrying out this part of my research entailed asking questions to willing individuals around Toronto, Canada and conducting a brief interview*in situ* .

When?
Interviews were conducted between February and April, 2017: 24 during daylight hours and 18 during the night.

Who?
Citizens were selected through random sampling — with an added effort to speak with representatives from each demographic group.

Where?
Site locations included Harbourfront, Distillery District, Bayview Village, Humber College (Lakeshore Campus), Devonian Square, Albert Campbell Square, Mel Lastman Square, and outside of Union Station.

3.4. Statistical Information.

Forty-two individuals [Table 001] — 13 of which identified themselves as having a sensory limitation/sensitivity [Table 002] — participated in this research study. They were all assumed to be over 21 years of age (as estimated by me).

[Table 001]:*Summary of Statistical Information*

participants	group [experts]	group [citizens]	sensory facility* (0 limitations)	sensory facility* (1+ limitations)	TOTAL
day (a.m.)	n/a	24	14	10	**24**
night (p.m.)	n/a	18	15	3	**18**
TOTAL	**n/a**	**42**	**29**	**13**	**42**

** the degree of participants' sensory facilities (i.e., limitations/sensitivities) was not obtained or assessed*

[Table 002]: *Participants Who Self-Identify as Having a Sensory Limitation/Sensitivity*

participants	visual [colour]	visual [non-colour]	auditory	olfactory	gustatory	tactile	vestibular	TOTAL
day (a.m.)	0	4	2	2	1	1	0	**10**
night (p.m.)	0	2	0	1	0	0	0	**3**
TOTAL	**0**	**6**	**2**	**3**	**1**	**1**	**0**	**13**

4.

data analysis

"Rather than seeking out immersive pleasurescapes,
geographically separated from the everyday, we now find kinesthetic pleasures
dotted around the city, inserted into familiar structures and enmeshed in the urban experience itself."

(kane, 2015, p. 47)

In this chapter, the aggregation of the findings from the literature review, case study investigations, and interviews of experts and citizens with or without sensory limitations/sensitivities, using a phenomenological approach, is provided. To achieve this, environmental scans, sensory mapping, as well as other analytical techniques were used.

4.1. Analytical Approach.

An inductive analytical approach was used since this study began with a definitive research question(s), which then led to the discovery of urban design features that citizens enjoy in their public spaces [Table 005].

4.2. Sensory Mapping.

Inspired by Kelum Palipane's mapping diagram (which was based on the vertical montage used by Sergei Eisenstein in the film *Alexander Nevsky* [Figure 007]), a variation of her multimodal mapping technique that showcases the sensory relationships between space, time, and movement was utilized during my analysis. This mapping technique "reveals the nuanced and layered interrelationships between the social body and the neighbourhood which could inform the development of a sensorially based urban design framework/process that acknowledges diversity." (Palipane, 2011, p. 15)

According to Palipane (2011): "Reflecting on the overall reading of the mapping diagrams, the multimodal information on a vertical column of this map is a concentrated representation of the sensory experience at a given moment in time and space." This mapping process can be a potential "conceptual apparatus for a design framework that could be a generator of urban space which genuinely accommodates social diversity." (p. 10) This visual analytical approach can highlight particular patterns and co-relations that emerge in the datasets by overlapping, whose intersections can provide a lot of insight that may have gone unnoticed.

4.2.1. Environmental Scans.

All participants were asked to name the urban public spaces in Toronto that they visit on a regular basis. These most frequented urban public spaces were visited by me, physically and/or virtually, to assess the number of playful design features from *The Multi-Playscape Toolkit* that were present. The findings are itemized in Table 003 and Table 004.

[Figure 004]: *Most Frequented Public Spaces in Toronto (map)*

The ten urban public spaces most frequented by participants are five parks [Trinity Bellwoods Park, Dufferin Grove Park, High Park, Christie Pits, Allan Gardens], one square [Nathan Phillips Square], two beaches [Woodbine Beach (Ashbridge's Bay), Scarborough Bluffs (Bluffer's Park)], one street/corridor [West Queen Street West], and one market [St. Lawrence Market] [Figure 004]. The playful design features were tallied and categorized by *sensescape* for each urban public space [Table 003].

Runners-up are Evergreen Brick Works, Artscape Wychwood Barns, and the Toronto Islands. One popular space mentioned often, but was excluded since it is not public or free to visit, is The Toronto Zoo (which requires admission fees).

[Table 003]: *Number of Playful Design Features in Toronto's Most Frequented Public Spaces (Ranked by Popularity)*

	greyscapes	colourscapes	soundscapes	smellscapes	tastescapes	tactilescapes	hapticscapes	TOTAL
trinity bellwoods park	5	3	5	4	4	6	7	34
dufferin grove park	5	3	5	7	7	7	7	41
high park	4	4	6	2	0	5	6	27
nathan phillips square	6	2	2	2	2	4	3	21
west queen west	5	5	1	8	9	3	1	32
christie pits	5	3	6	3	1	7	7	32
allen gardens	3	5	5	4	0	4	3	24
scarborough bluffs	3	2	4	3	1	8	5	26
st. lawrence market	2	3	0	9	9	3	1	27
woodbine beach	5	3	5	5	2	9	6	35
TOTAL	43	33	39	47	35	56	46	

[Figure 005]: *Most Frequented Public Spaces in Toronto by Those with a Sensory Limitation/Sensitivity (map)*

The ten urban public spaces most frequented by participants are five parks [Trinity Bellwoods Park, Dufferin Grove Park, High Park, Christie Pits, Allan Gardens], one square [Nathan Phillips Square], two beaches [Woodbine Beach (Ashbridge's Bay), Scarborough Bluffs (Bluffer's Park)], one street/corridor [West Queen Street West], and one market [St. Lawrence Market] [Figure 005]. The playful design features were tallied and categorized by *sensescape* for each urban public space [Table 003].

Runners-up are Evergreen Brick Works, Artscape Wychwood Barns, and the Toronto Islands. One popular space mentioned often, but was excluded since it is not public or free to visit, is The Toronto Zoo (which requires admission fees)

[Table 004]: *Number of Playful Design Features in Toronto's Most Frequented Public Spaces by Those with a Sensory Limitation/Sensitivity (Ranked by Popularity)*

	greyscapes	colourscapes	soundscapes	smellscapes	tastescapes	tactilescapes	hapticscapes	TOTAL
trinity bellwoods park	5	3	5	4	4	6	7	34
high park	4	4	6	2	0	5	6	27
harbourfront	5	2	4	4	3	7	5	30
dufferin grove park	5	3	5	7	7	7	7	41
west queen west	5	5	1	8	9	3	1	32
allen gardens	3	5	5	4	0	4	3	24
yonge-dundas square	3	2	1	0	0	1	1	8
scarborough bluffs	3	2	4	3	1	8	5	26
christie pits	5	3	6	3	1	7	7	32
nathan phillips square	6	2	2	2	2	4	3	21
TOTAL	44	31	39	37	27	52	45	

Regarding the most frequented urban spaces, this study did not survey participants' proximity to these locations from their places of residence, work, etc.

4.3. Playful Urban Design Framework: *The Multi-Playscape Toolkit*.

Using the data collected from the literature review, case studies, expert interviews, and citizen interviews, I discovered 64 playful design features that are the foundation of the playful and sensory urban design framework I have created and called *The Multi-Playscape Toolkit* [Table 005].

[Table 005]:*My Playful Urban Design Framework — The Multi-Playscape Toolkit*

	greyscapes	colourscapes	soundscapes	smellscapes	tastescapes	tactilescapes	hapticscapes
air inflation	•						
alcoholic beverages					•		
alternating sizes	•						
balloons					•		
balls						•	
bbq					•		
bells/chimes			•				
bigness	•						
bird song			•				
bonfire			•				
bubblegum				•	•		
chocolate/vanilla/caramel				•	•		
circles	•						
coffee					•		
colours (bright)		•					
contrast		•				•	
cubes/boxes		•					
curvature						•	
digital screens		•	•				
element of surprise	•	•					•
flowers	•	•		•			
fruits		•			•		
grass	•	•		•			
greasy/fried food					•		
gym equipment						•	
hammocks						•	
ice cream					•		
ice (rinks)	•						
incense				•			
interactive (analogue)			•				
interactive (digital)		•	•				
lighting (artistic)	•	•					
malleable forms	•						
mirrors							
motion-activation (sensors)	•						
murals		•					
music			•				
pushing motion							
rainbows		•					
random arrangements	•						
rolling motion							
rocks	•						
sand/beaches				•			
savoury food			•				
seating				•			
shine/gloss/reflectance	•						
smooth textures							
soft textures							
spaces				•			
sprats							
spinning motion	•						
stripes	•						
swings							
touch-activation (sensors)	•						
transparency/Lucency							
trees	•			•			
typography							
up-&-down motion	•						
water features	•						
way/undulating surfaces	•						
wheels	•						
wind			•				
wood							
writing	•						
TOTAL	33	15	13	18	12	23	24

4.3.4. Statistical Variations.

It should be pointed out that correlation does not imply causation. [With respect to Variables A, B, and C: A (playful design feature in urban public space) does not imply B (number of individuals frequenting urban public space). However, third factor C (individuals' proximity to urban public space) is related to B, but was not taken into account in this research study.] While there isn't a large difference among the playful design features by *sensescape* between the two sets of most frequented spaces, the highest numbers are seen in *tactilescapes* and *hapticscapes* and the lowest in *colourscapes* and *tastescapes*. Surprisingly, *greyscapes* and *colourscapes* didn't lead by a substantial amount, reflecting the vision hierarchy and dominance experienced in contemporary urban design and architecture. Then again, this study also considered nighttime activity, during which such visual features are perceived less.

The most significant differences between the two groups (all participants and participants who self-identify as having a sensory limitation/sensitivity) are:

- the *smellscapes* and *tastescapes* of the most frequented public spaces. This could be due to the diffuse and/or transient nature of these types of sensory stimuli across space and time, respectively. The other five *sensescapes* have more permanent properties and, thus, longer-lasting pleasurable experiences.

- Yonge-Dundas Square (a public space frequented more by those with sensory limitations/sensitivities), which has fewer of the 64 playful design features than the other frequented spaces (by both the citizen and expert participant groups). Perhaps less stimulation — in terms of quantity, not quality — is preferred by the participants who regularly spend time here? Hearing limitations/sensitivities were highest among these individuals, compared to those with other sensory impairments.

4.4. Discussion.

4.4.1.a. "What are 'playful' design features in urban public spaces?"

From my research, 64 playful design features (many of which span across multiple sensory modalities) emerged [Chapter 3.0] and have been collated into an urban design framework called *The Multi-Playscape Toolkit* [Table 005]. However, what is enjoyable to some is shunned by others. Cigarette smoke, loud conversations, and clashing stimuli are a few examples of features that were almost equally desired and despised in urban public spaces.

4.4.1.b. "Do they, directly or indirectly, increase social inclusion (or citizen participation) when applied to urban public spaces?"

It is hard to determine when privatization is at an all-time high. People rather be on a patio or on their couch, whether it be alone or around many. Why is there such rejection of the commons? Could it be their physical states or their social programming? Participants mentioned the rundown, malfunctioning parts in public spaces, such as rusty equipment, broken benches, chipping paint, and out-of-service drinking fountains. Others who live in Toronto's suburbs stated that with their need to drive (everywhere), they had less opportunity and little motivation to visit public spaces. A reason for this poor attendance rate could be the perceived lack of safety in urban public spaces — both during the day and night. Also, five participants referenced societal perception as a factor for avoiding these areas when alone. Members of certain demographic groups, such as young and middle-aged men, are concerned about being thought of as 'shady' or 'creepy' when visiting a public space by themselves. In the contemporary city, when did it become odd behaviour to go to a park *sans* company? A larger number worry about being victimized. However, be it a cultural shift or compounded anxiety, fear trumps fun. But what came first: the lack of maintenance or lack of interest? Catch-22: These seem to run parallel, making it difficult to distinguish which effect triggers the other.

So, should municipalities dig deeper into the public purse to improve underused public amenities? How should our other limited resources (i.e., time, energy) be invested into making public spaces more (sensorially and socially) inclusive when it appears that many people — regardless of (dis)ability — do not want to spend much of their time in them? Are playful design features enough to draw people back into public spaces without apprehension? Maybe there is hope. Whenever transformations to public spaces are announced or alluded to, local residents tend to be vocal about changes (perceived to be negative or non-conformist) — even if they themselves do not frequent the respective sites. All love is not lost?!

5.

playful urban design
[applications]

"Performance guidelines ... focus on the performance required by the end product
rather than its concrete physical characteristics
... [and] provide more flexibility because they allow different solutions to a given problem."

(Steinø, 2002, p. 173)

In this chapter, the process of implementing urban design strategies and interventions is examined. This also includes the procurement of land in an already-dense, space-deprived city. Focusing on the Toronto context, urban spatial provisions and permissions regarding the implementation of *The Multi-Playscape Toolkit* will be discussed. Lastly, sensory, playful, and inclusive design considerations are addressed.

5.1. Urban Public Spaces: Provisions.

Ros Diamond and Simon Henley (2008, p. 38) make an admirable declaration: "The legacy of new public development should be greater happiness."

> "[D]evelopment projects ... have the capacity to cause adverse effects on health and well-being at the individual and community level ... Social and community health may also be affected negatively where individuals face a loss of cultural identity and *quality of life*, social disruption and violence, and a *breakdown of community and family support networks*. Furthermore, socio-cultural well-being can be affected by increasing stress, anxiety, and *feelings of alienation*." [emphasis mine]
>
> (Health Canada, 1999, p. 1-8)

Because of the aforementioned, evaluations called social impact assessments (SIA) are conducted to examine the effects of projects on social and related economic conditions, with such possible social benefits including revitalizing neighbourhoods, enhancing community aesthetics, creating potential for new public spaces, and minimizing social exclusion. This is great, especially since constant vertical (and horizontal) development is a part of Toronto's reality. It is an urban centre that is experiencing rapid growth. However, the percentage of private to public landscapes is increasing disproportionately and disappointingly.

> Christopher De Sousa ([interview]) comments on this: "It fascinates me that we've seen the development, but you haven't seen new public space — even if it's unconventional" like putting "things on tops of roofs."

Interstitial spaces should be leveraged, as well. The "outdoors starts only a half-inch outside the door, so we need new ideas for spaces adjacent to buildings." (Martin, 2015, para. 8)

> When discussing the main benefits of tactical urbanism, Tony Garcia ([interview]) confirms that "[t]he one that [The Street Plan Collective] finds the greatest return on our time and investment is the re-animation" of urban areas. The cost-to-impact ratio of applying playfulness to the city's streets has been well-received. He adds that "[Miami Beach] remains (one of the) highest densities per capita in the United States. Most people don't think that. It's not Manhattan ..." Shocked, I (politely) injected with "*Miami Beach*?!," to which he responded, "Miami. Miami Beach. South Beach, yeah."

There is a three-storey height restriction for development projects in Miami Beach, but this does not define a city's density. With Miami Beach's unique nature of being an island, horizontal expansion is constrained not only by 'soft' policies, but by the ocean's hard coastlines. Prioritizing public engagement by creating opportunities to maximize available space is a positive outlook that Toronto can adopt. And it appears that we are beginning to.

> Because of their "slow reaction-time," "it has taken ages" for the City of Toronto to have such important conversations about the procurement of more physical space in the downtown core. (De Sousa, [interview])

5.1.1. Municipally-Owned Greenfields, Greyfields, Brownfields.

Greenfields.

> "We should return to an understanding of happiness and the joy that comes from feeling a wide range of natural conditions."
>
> (Fordham, 2008, p. 56)

Green spaces are urban oases. Offering delight and respite from city stressors, parks are popular for both mindfulness and playfulness. Natural sounds like the wind (especially when it weaves through leaves), falling water, and the songs of birds (and other small, non-threatening animals) are loved by many. "Trees are [urban] acupuncture that ease the pain caused by the absence of shade, life, color, and light." (Lerner, 2014, p. 84) City dwellers can never have enough trees! Grass and sand provide visual satisfaction along with tactile pleasure whether using one's hands or feet.

> "The Ravines in Rosedale ... have little infrastructure — just dirt paths and spectacular nature." (Atkinson, [interview])

But, some of Toronto's best gems are barricaded, safeguarding (fragile) ecosystems from human (and dog) contact.

> "The City [of Toronto] … put up fencing [in Rennie Park] to keep people, and their dogs, out of the natural areas. And you've seen folks put up letters saying, 'Don't fence us out!'" (De Sousa, [interview])

Greyfields + Brownfields.

> "These elements may form hierarchies and dependencies also at varying timeframes, with some being more active, permanent, primary, and dominant, and other ones being more temporary/periodical, discrete and subordinate."
>
> (Fowler, 2015, p. 144)

Second-hand urban spaces possess many physical advantages. Typically well-located, they tend to be geographically accessible. Greyfields are "outdated retail and commercial sites," whereas brownfields can be defined as unused industrial land that "refer to both known and potentially contaminated sites." (Adams + De Sousa, 2007, p. 4,5) The City of Toronto has incorporated brownfield redevelopment into its Official Plan by way of Section 28 of the *Planning Act*, which permits Ontario's municipalities to create community improvement project areas (CIPAs) and develop community improvement plans (CIPs). "Community Improvement Project Areas will be identified for areas exhibiting one or more of the following: a) physical decline in local building stock; b) conflicts between incompatible land uses or activities; c) deficient or deteriorated public infrastructure and/or amenity, including parks, open spaces, community facilities and streetscapes; d) barriers to the improvement or redevelopment of vacant or underutilized land or buildings such as contaminated soil, fragmented ownership, or financial disincentive to private investment; or e) declining social, environmental and/or economic conditions." (City of Toronto, n.d.) Such areas may be excellent places to implement more playfulness.

5.1.2. Privately-Owned Publicly-Accessible Spaces (POPS)?

"City officials would do well to realize that urban vitality depends on how citizens spend their leisure hours by giving well-intentioned community organizers and developers tax breaks or rent subsidies to plan and build innovative gathering places. Joyful association in the public domain is far better than watching television in our lifeless subdivisions." (Oldenburg, 2014, para. 6) But, what if civic participation provides little entertainment?

> Jeffrey Elkow ([interview]) feels that these new spaces popping up in Toronto seem like afterthoughts and display "a general push towards sterility and sameness."

However, can we demand the application of specific design features to spaces that are not 100% public?

> "[I]f the public sector is not willing to deliver the service [of providing great public spaces], then we're going to have to do public-private partnership to deliver the service." (De Sousa, [interview])

5.1.3. Recommendations for Acquiring More and/or Larger Urban Public Spaces.

- Intensify use of public spaces during off-hours/off-seasons.
- Inventory and leverage use of vacant, underutilized, non-traditional, and temporary-use spaces.
- When necessary, consider public-private partnerships (PPPs) with stakeholders to procure land for public spaces.

5.2. Urban Public Spaces: Permissions.

Cities have legislations, regulations, and by-laws to help maintain a minimum level of safety, cleanliness, and general order. While these are generally necessary, some can interfere with the quality and quantity of harmless fun and spontaneity that organically occurs when people gather.

5.2.1. Public Fun Prerequisites?

According to the findings, Trinity Bellwoods Park is Toronto's current favourite public playscape [Table 003 + 004]. But, where else can citizens experience as much fun with friends and strangers alike in this city?

> De Sousa ([interview]) believes that "we [Torontonians] just can't have the organic fun [experienced in public spaces by residents of other global cities]; it all has to be the proper form … if you really want to truly enjoy dynamic public space, go somewhere else. Can't do it here!" He continued, "I think we are too bureaucratic, formal, and overwhelmed with the rules we've created … We like the idea of [public leniency]; I don't think we have the capacity to allow ourselves to do it."

Sadly, this is partly why we can't have nice (or fun) things!

> "There is high demand for … street parties and celebrating teams winning, but one little thing happens, and someone from the City is going to make you have a permit … and the party is going to move somewhere else [to a private space] … We snuff the fun out of things with our rules. But that's who we are. But that's why we do so well as a city, too, because I think people like the safety, like the organization." (De Sousa, ([interview])

The principle of modernist architecture, *form follows function*, is well-known. Well, *fun follows function*, too. Functionality should always precede the fun (or playfulness) in any design. But, this advice should not be taken to an extreme as the outcomes — both the process and product(s) — of experimentation can be immeasurable! Unfortunately, attitudes towards potential short-term risk and liability here in Toronto are strong.

5.2.2. Recommendations for More Dynamic + Experimental Uses of Public Spaces.

- Animate Toronto's (or other city's) characteristic assets to its advantage — by installing temporary and permanent public art that embodies Toronto like *Flight Stop* by Michael Snow, according to Ben Mills ([interview]). Norma Rantisi ([interview]) agrees; the main goal of public art should be targeted towards providing benefits to citizens — the audience.
- Apply playful design interventions to public spaces temporarily and then evaluate their success for permanent feasibility. A pilot project for public drinking, for example, would especially be worthwhile, as a means of creating a more *laissez-faire* atmosphere in Toronto's outdoors areas.
- Streamline and support permit-free use of public spaces (at designated times).

5.3. Urban Public Spaces: Inclusive Design.

Inclusive design is defined as "design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference." (IDRC, n.d., para. 3)

> "Global cities like Greater Toronto are now hyper-diverse: home to intense social, economic, ethno-cultural, generational and identity mixing. In communities with nested and overlapping diversities, public spaces represent an essential and humanizing bulwark against social atomization."
>
> (Lorinc, 2016, para. 3)

Fundamentally, we believe that eliminating obstructions that prevent citizens from spending more time in urban public spaces is essential for the creation of inclusive, democratic cities. However, another powerful barrier to overcome is the negative or traditional outlooks of others about others.

5.3.1. Affordances.

> "Affordances are the values and meanings of our surroundings that individuals sensuously perceive. Hence, affordances are not already there, inscribed in space but activated through people's sensory experiences — by the moving through, touching, smelling, hearing, seeing of objects and places … Thus, we can view the experience of place as an active dialogical expression between users of space and the possibilities that the constitution of that place engenders. Space is performative in that it affords certain practices, sensory experiences, but at the same time performed through the actions and experiences attributed to this particular place. As we will see, the reconfiguring of public space involves a reconfiguration of affordances and resistances, which is a very sensual enterprise."
>
> (Degen, 2002, p. 2)

A ball can be rolled or kicked, but also used as a 'chair.' This is an example of James J. Gibson's (1977) Theory of Affordances that refers to the properties and behaviours of materials, objects, and spaces. It underscores the (invisible) possibilities of (unexpected) interactions between an agent and an environment's gestalt, surfaces, colours, layout, or textures.

5.3.2. Accessibility.

When the experiences of citizens are incorporated into their policies, plans, and laws, communities strengthen. In 2004, the City of Toronto released its Accessibility Design Guidelines, which are founded on current Canadian federal and provincial legislation, published standards, and the human rights principles of respect, dignity, and inclusion. The Guidelines are a major section of the City's Accessibility Plan and "are in keeping with the Official Plan which states that: 'A key city–building principle is that public buildings, parks and open spaces should be open and accessible to all members of the public including people with disabilities." (City of Toronto, 2004, p. 1) In addition to this, the Guidelines include some of the requirements of the Ontario Building Code (OBC, 1997, Section 3.8) in accessibility planning and universal design. But, what about inclusive design?

5.3.3. Co–Designing.

It is crucial that human–centric metrics are selected to measure and evaluate experiential phenomena. But, that is only the first part of the battle. A pluralistic approach to the urban design process is "to view the process as one evolving out of the needs and wishes of concrete people as the users and creators of physical space in concrete contexts. In this case, the design process is highly participatory, and involves little, or in extreme cases no preconfigured anticipations or ideals on behalf of the designer, who acts primarily as a facilitator and supervisor for the actors involved." (Steinø, 2003, p. 172)

To practice inclusive design, co–designing with the user group(s) — in this case, urban residents — is paramount. Co–designing throughout the project, across all its phases (and not just at the end), ensures more diversity and inclusion. *No designing for us without us* — no matter who 'us' is. Still, inviting citizens to participate in urban development discussions can be challenging, especially those who feel marginalized or intimidated by such bureaucratic processes. These communication channels have previously been reserved for the privileged — a small, non–representative group of today's population. For example, holding public community meetings at convenient times, and perhaps at the project site, with translators (spoken languages and American Sign Language) would increase accessibility, resident turnout, and the generation of diverse ideas.

Discovering how citizens interact within an urban public space — ways that are often unforeseen by the designers — is key to gauging its success. Continuous reflecting, evaluating, and re–imagining should reflect the constantly changing ways individuals use their environment.

5.3.3. Recommendations for More Inclusively–Designed Urban Public Spaces.

- Built environment professionals should co–design with citizens, making: (a) the design process more inclusive and more effective, and (b) the design outcome more informed by local priorities.
- Built environment professionals should make the effort to go *to* citizens, instead of expecting citizens to come to them.
- Evaluate (at various stages for increased citizen feedback) … then re–design … then re–evaluate …

5.4. Inclusive Sensescapes.

> "The achievement of sensory effects via architectural elements requires a long process of exploration, suggestion, and revision that will be different for every project. The impact of one building cannot be repeated or copied or transferred to another."
>
> (Jackson, 2010, para. 6)

5.4.1. Sensory Limitations + Sensitivities.

People with sensory impairments "are more likely to fall, make medication errors, have depression, or report social isolation." (Carter, 1994, as cited by Rosenberg + Sperazza, 2008, p. 1431) Thirty–one percent of participants self–identified as having a sensory limitation/sensitivity. Of those individuals, all confirmed to only have one type (i.e., only visual).

- Visual [possibilities: vision loss, colourblindness, migraines, seizures]
- Auditory [possibilities: hearing loss, tinnitus, migraines]
- Olfactory [possibilities: loss of smell, seizures, migraines]
- Gustatory [possibilities: loss of smell, loss of taste (hypogeusia + dysgeusia), allergies]
- Tactile/Thermoreceptive [possibilities: skin injuries (incisions, burns, etc.), loss of touch (neuropathy through nerve injuries, impaired circulation, or metabolic, toxic, and/or immunologic factors)]
- Kinaesthetic/Vestibular [possibilities: loss of balance (can impair walking, object–holding, etc.), nausea]

5.4.2. Multisensory Urban Design.

While few built environment professionals actively play with sounds, smells, tastes, and textures in their designs, a multisensory urban design approach makes spaces more accessible for everyone.

> "The achievement of sensory effects via architectural elements requires a long process of exploration, suggestion, and revision that will be different for every project. The impact of one building cannot be repeated or copied or transferred to another."
>
> (Jackson, 2010, para. 6)

Multisensory environments provide opportunities for bridging barriers and allow citizens to participate at their own pace as "[a]rchitecture is experienced with the entire body through the perception of the qualities, materials, and scale of the space: the constant interaction of all the senses articulates reality." (Jackson, 2010, para. 5) They can be multifunctional, as well: they can have a calming effect (which decreases stress levels), but can also arouse. So, should multimodal sensory design become the new environmental and architectural design standard?

<u>Designing for Visual Limitations/Sensitivities.</u>

> "Congruence between the information processing of people with vision loss and sensory cues in the environment are needed if they are to be successful in using places and spaces … If these signals conflict, the result may be uncertainty, fear, distress, discomfort and more often a loss of performance and participation"
>
> (Jenkins, *et al.*, 2015, p. 8651)

Like with any demographic group of individuals, the experiences of people with any sensory impairment are not the same from person to person. Actually, there are only a limited number of commonalities shared.

> Director of the Inclusive Design Research Centre, Jutta Treviranus [interview], explains that "when you are blind, you tend to like surfaces that echo and create noise shadows, texture boundaries as guidance, and scents to enrich your experience. Of course, you don't want obstacles that you can't detect with a cane, etc. … [I]f you have some vision, you usually want high colour contrast between surfaces (e.g., wall and floor)."

<u>Designing for Auditory Limitations/Sensitivities.</u>

"[A]n environment that has significant echo with reverberating noise can create sound distortion. This makes it difficult to isolate sound cues and determine the direction of the source of the sound in locations where people with visual impairment rely on auditory cues for travel. On the other hand, large open spaces, such as open fields and parking lots that are void of any sensory cues, are also difficult to navigate." (Jenkins, *et al*., 2015, p. 8649) This information is useful since urban public spaces vary in their size and the degree to which they are bounded — by tangible (i.e., walls) and intangible buffers.

For the hearing-impaired, (360°) space has a critical function in how they communicate: visual clutter can distract from visual cues, the configuration of benches is usually in rows that close-off sight lines needed to read lips or sign language, etc. Developed at Gallaudet University in Washington, D.C., the only university in the world designed entirely for the deaf and hard of hearing, a set of DeafSpace Guidelines tackle proxemics and public space properties that constrain interaction and mobility has garnered attention from built environment professionals.

> "When you have a hearing impairment you tend to want to sit by a wall, away from noise. Ambient noise is a problem in general. When you are deaf, you want a good visual field to see people speaking and not to be surprised by something that you can't hear coming from behind." (Treviranus, [interview])

5.4.4. Recommendations for Designing for Inclusive Sensescapes.

- Built space professionals should design with all of the senses in mind, or at least multiple.
- Consider the variability of the specific environmental stimuli incorporated into urban public spaces — some, by nature, are uni-functional and are, thus, less inclusive.

5.5. Inclusive Playscapes.

> "These elements may form hierarchies and dependencies also at varying timeframes, with some being more active, permanent, primary and dominant, and other ones being more temporary/periodical, discrete and subordinate."
>
> (Zavoleas, 2015, p. 205)

It is not being suggested that these playful design features be applied to all outdoor public spaces; just to those that (a) may be underused and have the potential to be activated (based on location, access to transit, etc.) or (b) are located in areas where higher rates of depression or lower levels of social well-being are experienced. "While it is hard to prove the link between mental illness and the city as a general concept what we can prove is that specific design variables do have a quantifiable effect." (Thomson, 2008, p. 161)

While Atkinson believes that it is the responsibility of the City of Toronto to implement more positive sensory elements in public spaces, she is not so certain about playful ones.

> "Not everyone's idea of playfulness is the same. Some interventions don't seem 'playful' down the road if they don't operate in multiple ways or are easily damaged or don't withstand weather and wear. Things that are both useful and playful are good — like the pink umbrellas and Muskoka chairs at Sugar Beach, or the climbing rocks there and in Yorkville Park. They need to work as seating or climbing or shade as well as 'playful' works of art." (Atkinson, [interview])

5.5.1. Overdesigned Urban Public Spaces.

> "Although the urban environment is bursting with numerous aesthetic resources and potentiality, this does not necessarily mean that it is always capable of providing a full and complete experience."
>
> (Thibaud, 2010, p. 8)

Design for design's sake does not work when it comes to the commons. Urban design should attend to the needs and well-being of citizens, not (solely) the beautification of public spaces.

> When asked whether she thought the City of Toronto would have any reservations applying (more) playful design features to our public spaces, Cheryl Atkinson ([interview]) replied, "I think the city encourages playfulness in their public art programming. They have always limited budgets to support maintenance of planting and other infrastructure — so things that don't need maintenance work best."

Adding avant-garde attributes to anything, anywhere, can be chancy. But, there's such a risk of alienating people if you depart too strongly from a previous incarnation of anything." (Vanderbilt, 2016, para. 15) Taking chances and being experimental isn't always bad, but at whose (literal) expense?

> "It's a risk to overly design a public space, particularly when there's public funds involved in its creation. People don't want to overextend, but, at the same time, those are the types of elements that make spaces interesting and unique and drive people towards them." (Elkow, [interview])

A goal is to increase spatial adaptability without increasing costs. Designing 1:1, or one-size-fits-one, may allow for the 'turning up' or 'turning down' the intensity of environmental stimuli (i.e., the amount or angle of light reflection).

5.5.2. Recommendations for Designing for Inclusive Playscapes.

- Apply playful design features from *The Multi-Playscape Toolkit* purposefully in areas (a) that are underused and/or (b) with reported rates of higher levels of depression or loneliness.
- Ensure designs are flexible in nature, so they can be adapted and re-interpreted by the users to suit their needs or preferences at the time.

[Figure 006]: *Swatches of Some Playful Design Features*

6.

conclusion

"Although the urban environment is bursting with numerous aesthetic resources and potentiality, this does not necessarily mean that it is always capable of providing a full and complete experience."

(Thibaud, 2010, p. 1)

In this chapter, concluding remarks are made, alongside the discussion of this MRP's contributions to the knowledge base and possible future steps.

6.1. Next Steps: Future Research + Design.

While interviewing more individuals would mean increased diversity and a richer database of playful, or pleasurable, design features, investigating one single dimension — one *sensescape*, one type of urban public space (i.e., parks, squares, streets), or the intersection of these — would also be beneficial. One very critical point to stress, though, is categorization — of people's characteristics, of specific design attributes, etc. — can result in reduction and the elimination of nuance.

Due to time constraints, I was not able to (re-)design an (existing) urban public space into an innovative, inclusive playscape and then evaluate its success(es) and failure(s), especially for that growing percentage of the population that opt not to visit public spaces (albeit for a variety of different reasons). This would have led to refining the design, re-testing it, and repeating this process (as many times as needed). However, this is the direction for upcoming urban design projects.

> Treviranus ([interview]) discusses 'edge scenarios' and the implementation of the inclusive design mapping tool. "Let's say you pick five, as diverse as possible, people who are currently unable to use the [urban] design. And then you figure out, 'How do I re-design this?' or 'How do I stretch the design, so that it encompasses them or incorporates their requirements?' … You're going to have to create a more generous envelope with more and with new, further adaptable designs. And, what you would then do is to look at, by virtue of doing this, 'Have I excluded anyone?'"

Regardless, more playful and sensory urban design research of any kind, with any academic or professional focus, will be valuable to these somewhat nascent fields of study. Approaching them through the lens of inclusive design is even more valuable — and necessary.

6.2. Culmination.

Civic life is what occurs in public spaces and in-between buildings. Being cognizant of this and designing for its success is an immense task. Is it more important for people to have a significant experience, or to reach lots of people? The former can be difficult to justify in a climate that is all about numbers and immediate rewards. So, what do we consider to be worth doing? But, why must we choose? Why can't we have both options?

This MRP has explored uncharted territory that can benefit design scholarship, practice, and most importantly those specific user groups. My literary contributions include my unique intersectional and multidimensional perspectives, which have never been proposed, presented, and/or published. In addition, my urban design framework, *The Multi-Playscape Toolkit* — a product grounded in primary and secondary research — has been established.

An aspiration for municipalities should be to make urban public spaces more fun(ctional) for people: more imaginative, interactive, and inclusive via design policies, processes, and practices. Let's continue to experiment with more playful civic upgrades — in Toronto and cities everywhere!

7.

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Interview Credits:

Atkinson, Cheryl — *Architect, Atkinson Architects*

De Sousa, Christopher — *Program Director, School of Urban + Regional Planning [Ryerson University]*

Elkow, Jeffrey — *Planner II / Heritage Coordinator, Township of King*

Garcia, Tony — *Principal, Street Plans Collaborative*

Mills, Ben — *Vice President, Public Art Management*

Rantisi, Norma — *Associate Professor, Dept. of Geography, Planning + Environment [Concordia University]*

Treviranus, Jutta — *Director, Inclusive Design Research Centre*

appendix [a]:

glossary

(intended meanings of terms)

urban public spaces:
outdoor urban areas that are open, accessible to, and collectively owned by all citizens.

privately owned publicly-accessible spaces (pops):
open spaces citizens are welcome to enjoy, but remain privately owned.

playfulness:
trait which enhances the attractiveness, amusement, and overall expressiveness of urban public spaces through the choice and arrangement of design features that can elicit pleasurable experiences for adults; an attribute associated with well-being and a higher quality-of-life.

playful design features:
urban design attributes or properties of an environment that exhibit playfulness.

visual design features:
urban design attributes or properties of an environment that comply with the sense of (colour) vision or the visual dimension.

auditory design features:
urban design attributes or properties of an environment that comply with the sense of sound or the auditory dimension.

olfactory design features:
urban design attributes or properties of an environment that comply with the sense of smell or the olfactory dimension.

gustatory design features:
urban design attributes or properties of an environment that comply with the sense of taste or the gustatory dimension.

tactile design features:
urban design attributes or properties of an environment that comply with the sense of touch or the tactile dimension.

haptic design features:
urban design attributes or properties of an environment that comply with the sense of touch or the haptic dimension.

sensory limitation:
impairment of one of the human senses, generally referring to less than 100% faculty in processing information visually, aurally, or both (deaf-blindness).

sensory sensitivity:
habitual experience with one of the human senses that can lead to discomfort of pain; either an oversensitivity (hypersensitivity) or undersensitivity (hyposensitivity).

sensory inclusion:
the consideration of the sensory needs of all individuals, whose abilities may range from 0% to 100%, which will ideally lead to increased participation in civic life.

appendix [b]:

the 64 features of "the multi-playscape toolkit"

a.
air inflation
alcoholic beverages
alternating sizes

b.
bakeries
balls
bbq
bells/chimes
bigness
bird song
bonfire
bubblegum

c.
chocolate/vanilla/caramel
circles
coffee
colours (bright)
contrast
cubes/boxes
curvature

d.
digital screens

e.
element of surprise!

f.
flowers
fruits

g.
grass
greasy/fried food
gym equipment

h.
hammocks

i.
ice cream
ice (rinks)
incense
interactive (analogue)
interactive (digital)

l.
lighting (artistic)

m.
malleable forms
mirrors
motion-activation (sensors)
murals
music

p.
pushing motion

r.
rainbows
random arrangements
rolling motion
rocks

s.
sand/beaches
savoury food
seating
shine/gloss/reflectance
smooth textures
soft textures
spices
spirals
spinning motion
stripes
swings

t.
touch-activation (sensors)
transparency/translucency
trees
typography

u.
up-&-down motion

w.
water features
wavy/undulating surfaces
wheels
wind
wood
writing