Mapping personal geographies in psychosis: from space to place

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Abstract:

Recently, there has been a growing interest in the interaction between the urban milieu and the development of psychosis. While growing up in an urban environment constitutes a risk factor for developing psychosis, patients who develop a first episode of psychosis tend to avoid city centers and suffer from isolation. These observations have fostered emerging interest in ways of developing contexts in cities that are favorable to mental health and that may help service users in their paths to recovery. Building on work on place attachment as well as systemic therapy, we present a new approach to map the urban spaces experienced by service users. We propose two tools, the 'place attachment diagram' and 'life space network', to situate emotional bond and spatial dimension respectively at their center and help service users to map meaningful places in the city. We also suggest that different facets of the illness such as epidemiological risk factors (residential mobility, migration, urban living, trauma), early place attachment and abnormal space experience, may shape individual space and place experience in psychosis. Psychotherapeutic process with patients should aim at turning urban 'spaces' into 'places' characterized by a sense of familiarity, security and opportunity. Finally, we argue that the 'spatial' is a forgotten dimension in psychotherapy and should be taken into account when treating individuals with psychosis.

Introduction:

While living in an urban environment may offer several benefits in terms of diversity, atmosphere, opportunities for social interactions, cultural life and healthcare access, epidemiological studies have uncovered that, in the northern hemisphere, there are more mental health problems in cities. The link is best established for non-affective psychosis but also true to a lesser extent for other mental illnesses[1]. Different hypotheses have emerged to disentangle the constituents of urban stress, which may of course combine in a given individual and include environmental pollution, lack of nature and social stress (invasion of personal space, low socio economic status and inequality, social exclusion, social defeat)[1]. Beyond the question of etiology of psychosis, it is likely these factors may as well influence the health of service users with established psychosis[2]. In fact, more recent findings indicate that following the emergence of psychosis, patients struggle to adapt to the urban milieu and suffer from stress and isolation[3]. Further, there is a turning point in the psychiatric literature where the role of context is progressively recognized with a call for studying interactions with the city at a higher and individual resolution[1,4].

Urban spaces consist of much more than the physical walls and buildings[5] and interact with our emotions, social relationships[6] and mental health[7]. Findings also indicate that short term experiences in nature or urban environment may trigger stress or well-being[1,8] leading to the prospect that therapeutic interventions at the individual level may be effective[2]. Based on these observations, we have previously proposed that 'urban remediation', a set of approaches to provide favorable urban spaces and contexts may help service users to recover faster after a first episode of psychosis[2].

A first step in that direction is a relevant and detailed spatial description of service users' everyday urban environment. The aim of the current paper is to adapt cartographic tools and visual methods to capture the role and meaning of the urban space in the process of recovery at the individual level in psychosis patients[1]. To do so, we first review the potential role of place in the recovery process.

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[1] Here we consider psychosis as "clear and sustained emergence of psychotic features" as defined in the field of early intervention in psychosis[96]. The main psychotic features or symptoms are disorganized thought and

We then discuss the concepts of place and how they may acquire meaning. Characteristics of psychosis may also influence how service users experience space and place. We then review work on visual mapping of urban space and other approaches before proposing two tools, the 'place attachment diagram' and the 'life-space network'. Finally, in the light of a clinical vignette, we discuss how these novel tools could be integrated in a therapeutic process with persons with psychosis.

The role of place in recovery

Deinstitutionalization has triggered a decrease in duration of hospital stay which continued until today and led to short hospital stays mostly during crisis. As a result, users spend most of their time in the community and with their families. Recovery is thus occurring in the community, in places where service users live in the city - if they are urban dwellers - and spend time. Contemporary mental health services are not located in one place anymore[6] and large hospitals have been replaced by treatment in the community[9] with various services including for instance early psychosis treatment programs[10] and mobile teams[11]. In the UK[6] as in Switzerland, the philosophy of mental health services is to favor empowerment of users to eventually 'becoming absent from service users' lives'[6]. This movement was also accompanied by closure of day services [6]. Considering this change in the place where recovery occurs, it is important to explore the potential role this milieu can play in the recovery process.

There is no doubt that the environment in which we grow up, live and interact with, influences our mental health and well-being[7,12]. Individuals with psychosis search their way through the many facets of the city to render their environment habitable, a process some have called 'niching' [13]. The therapeutic properties of place have emerged in the literature under different concepts such as therapeutic landscapes, restorative places and enabling environments and been grouped by Duff under the term of 'enabling places' [14,15]. Places are enabling in the sense they promote recovery because of their enabling resources (affective, material and social) produced in persons' interactions with the environment. The importance of place in the recovery process of severe mental illnesses is

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behavior, delusions and hallucinations. Patients with first episode psychosis may later be diagnosed with illnesses including schizophrenia, schizoaffective disorder, mood disorders with psychotic features, schizophreniform disorder, brief psychotic disorder, delusional disorder.

increasingly suggested in the literature [6,14–18] and was recently reviewed with a meta-ethnographic approach [17]. Four different types of place emerge, depending on their role in promoting recovery: places (a) for 'being', (b) for 'doing', (c) for 'belonging' and (d) for 'becoming'[17] (**Table 1**).

The experience of space and place

In order to better understand the role of space and place in recovery, it is necessary to define these concepts and experiences as well as factors that may influence them.

It should first be mentioned that space and place have sometimes been used as equivalents[6].

The study of place has become a central topic in human geography [19–22] and environmental psychology[23]. For the geographer Tim Cresswell: "Space is a more abstract concept than place. […] *What begins as undifferentiated space becomes place as we get to endow it with value…. The ideas 'space' and 'place' require each other for definition. From the security and stability of place we are aware of the openness, freedom, and threat of space and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place. (Tuan 1977)"*[24].

Simply put, a place is a meaningful location[23,24]. Being in a place is a personal, social, multisensory, embodied and affective encounter[14,19]. Knowing a place requires time and experience[25]. The term 'place' is connected to familiarity and routines[21]. Our interaction with places influences our emotional state as well as our health. While some places and aspects of city life may be stressful[16], typically favorite places have restorative properties and are used in emotion and self-regulation[26].

The emotional bond which people develop with places has been coined "place attachment" in environmental psychology [23]. Proximity with the concept of interpersonal attachment has been noted by Scannel and Gifford : 'Both types of attachment are maintained through proximity-seeking, and if positively valanced, they can provide individuals with a sense of safety and comfort[27]'. 'Feeling of belonging, willingness to stay close, wish to return when away' also characterize place attachment [28]. The developmental aspect of place attachment is essential; the development of place attachment in childhood is a prerequisite for developing emotional bonds with places later in life[23,29]. Importantly, social capital, overall adjustment and life satisfaction increase with higher place

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attachment[28]. Places of attachment are also necessary because they 'offer a safe haven where one can retreat from threats, problem-solve, and gain emotional relief'[27]. It is thus not a trivial concept: being anchored in a place seems to be a need for most people [28]. Residents typically develop strong attachments to their homes given the time spent and the security it offers[30].

Place attachment is deeper with places where significant experiences occurred and created meaning[31,32]. "Through memory, people create place meaning and connect it to the self"[31]. Research on predictors of place attachment identified socio-demographic factors (length of residence), social factors (trust in neighbors, community ties or social capital, sense of security), and physical predictors (e.g. access to nature, neighbourhood and housing quality, safety, height of buildings)[23].

While affect favoring place attachment is usually positively oriented, negative experience which occurred in a location may also determine meaning attached to a place[32]. These negative experiences may give rise to ambivalent feelings, aversion or avoidance of places[32]. For some people particular places are important for introspection and reflection, which 'reinforce the notion that significant experiences in places are those that reflect one's personal journey in the world'[32] and bonding may be easier when places represent who the individuals are[31].

Based on studies dealing with service users' experience of the city[14,33,34], we have previously described this experience to consist of persons' relation to three entities: the built environment, social interactions and mobility of the individual within the urban environment[2] (**Figure 1**). Further, we suggested that changes in any of these domains or in their interactions may play a role in producing 'urban stress'[2]. Here we suggest that place experience is the result of interaction between 'built environment', 'social interaction' and 'mobility'. The personal dimension composed by (historical) characteristics of the individual is an essential component which will affect place and space experience which will be discussed in the next section in relation to psychosis.

Space and place experience in psychosis

We have seen above that persons living with a diagnosis of psychosis have left asylums to live in (what are often *urban*) communities and that there is an emerging consensus that places may influence the recovery process. Before describing strategies that may incorporate place in the recovery process, it is important to explore how persons with psychosis interact with place and to see how elements related to these disorders influence this experience.

Deficits in visuo-spatial abilities

As reviewed by Lengen and Kistemann "Neuroscience has provided evidence that place constitutes a very specific, distinct dimension in neuronal processing" at the brain region level (e.g. hippocampus, entorhinal cortex, parahippocampal place area) and cellular level (e.g. place cells, grid cells) [35]. Patients with psychosis exhibit deficits in spatial abilities[36] including spatial memory and spatial navigation[37,38]. In fact, some of the brain structures implicated in the navigational system like the hippocampus are also implicated in the pathophysiology of schizophrenia leading to the suggestion that schizophrenia may encompass a disorder of cognitive mapping[36]. Without denying the complexity and the social component of the city experience, it is tempting to speculate that deficits in the navigational system may contribute or modulate how patients experience space, develop emotional bonds to places and experience changes in location.

Abnormal space experience

Phenomenological studies of schizophrenia have focused on disturbance of selfhood[39]. More recently, there has been a renewed interest in "non-self related subjective experiences"[40], namely lived world with the EAWE (Examination of Anomalous World Experience), a semi-structured interview format[41]. Stanghellini et al. focused on alterations of the experience of lived space (a component of lived world) also termed abnormal space experience (ASE)[42]. In a group of 301 patients with schizophrenia, they showed that it affected 70% of them . ASE is defined as 'an anomalous awareness of surrounding environment affecting its extension, distances, or perspectival properties, as well as the characteristics of things or persons'[42]. 'The experience of the overall

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structure of space is changed or unusual in some way'[41]. For example, 'Space itself takes on a certain affective quality that seems abnormally prominent, often with a negative tone, of feeling threatening, frightening, or uncanny'[41], "Space and things lose their materiality and become spooky. A rarefied, ambiguous, and elusive atmosphere emerges"[42]. The space surrounding an individual has been termed 'peripersonal space'. Individuals with schizophrenia seem to need a wider peripersonal space to feel at ease in social interactions and may have feelings of oppression or invasiveness from others[42]. It is likely that in some service users, these phenomena influence meanings attributed to places and thus the experience of place affecting the sense of familiarity or sense of safety and theoretically the capacity for place attachment. While ASE were present in most people with acute schizophrenia, they were present in only about a third of people with chronic schizophrenia. Stanghellini et al.'s work[42] brings support to Klaus Conrad's pioneering description of space perception in schizophrenia[42,43]. However, there is also evidence as we discuss below that space and place have more ambivalent relation with mental health.

Urban living and urban practices

Short term experience of nature or urban environment can have significant impact on mental state[1]. With some exceptions, a large body of literature supports a positive effect of nature on well-being and cognition[1]. Green spaces in the urban environment have also been shown to improve well-being, particularly in individuals with reduced prefrontal resources in daily life[8]. Conversely, urban environment is generally described as stressful, even more so in patients with schizophrenia for whom a 10 min walk in a busy street can increase paranoia [44]. Negative symptoms as well seem to be reflected in services user's mobility (as assessed by GPS) determining their life-space [45,46].

The study of experience of either stress or respite in the city after a first episode of psychosis has been examined using video-recording of patients' urban walks in combination with video-recorded film elicitations [4]. This revealed that demographic density, sensory overload (mainly related to excess of noise and physical contact), the impossibility to avoid social interaction and hindrance to mobility (i.e., not being able to keep the pace, no escape options) were the main sources of stress [4]. 'Personal' psychological or social tactics such as creating sensory 'bubbles', programming mobility and creating places of comfort were used to face urban stress[16]. In a survey-based study [3], city

avoidance was shown to increase after the development of psychosis, and patients' tendency to avoid city center correlated with both problematic social interactions and stimuli perceived as unpleasant.

Taken together, these findings indicate that patients who develop psychosis experience the urban environment as more stressful and are also hindered in their capacity to experience the environment away from home in a positive way[3,47]. The fact that short experiences of urban or nature features trigger stress or resilience is encouraging for the development of interventions for prompter recovery from mental illnesses. The urban is however not all-together negative[3], and nature is not all-together positive[48] indicating that context and personal factors need to be taken into account when analyzing the impact of urban or nature experiences.

Residential mobility and migration

Children and adolescents who experience higher residential mobility are at higher risk of developing psychosis in adulthood[49,50]. It has been hypothesized that changing school and the instability of social relationships may be an important mechanism at play[49]. The prevalence and incidence of psychosis are higher in migrants and it is increasingly accepted that migration in adversity is a risk factor for developing psychosis [51,52]. Migration may however not have a causal role and 'ethnic minority status' and social exclusion certainly play a role[53]. Although more anecdotical, it is interesting to note that psychosis may be triggered by travel[54] and patients with psychosis may travel because of delusions, called 'voyage pathologique' in the French literature[55]. Here again, mobility seems to be tied to psychosis either as a trigger or as a way of escaping from a perceived danger and may at least contribute in some ways to shape the experience of space and place.

Trauma

Traumatic experiences during childhood or adolescence is a risk factor for developing psychosis later in life[56,57]. Further, severe traumatic experiences are important elements of the outcome in psychotic disorders[58] and psychosis itself may be traumatic and lead to post-traumatic stress symptoms[59,60]. It has also been suggested that urban upbringing may moderate the association between childhood trauma and psychosis in the sense that risk of psychosis with trauma increases with duration of urban living in childhood [61]. Interestingly 'neighborhood disorder' in the sense of lack of order and social control in the community were related to increased trauma exposure.

Similarly, for people exposed to trauma, 'neighborhood disorder' predicted greater risk of lifetime post-traumatic stress disorder (PTSD) [62].

One of the core symptoms of PTSD is avoidance or efforts to avoid external reminders that reactivate distressing memories, thoughts, or feelings closely related with the traumatic event(s)[63]. Given that memories are important aspects in our relations to places[35], it is easy to conceive how different aspects of places might trigger or reactivate PTSD symptoms and how individuals with PTSD may avoid places to escape traumatic memories or people. Interestingly, it has been hypothesized that peripersonal space may also be increased in individuals who experienced trauma[64]. Negative experiences like trauma may thus influence place experience and meaning associated with places leading to avoidance of such places[32] especially in cities where trauma and urban environment seem to interact.

Summary

In summary, we suggest that different aspects that characterize psychosis in terms of risk factors (e.g. migration, residential mobility, trauma) or phenomenology (e.g. abnormal space experience) may modulate how individuals with psychosis live, perceive, experience, navigate, develop emotional bonds with and practice urban space. The development of psychosis itself may also play a role and influence urban living. We argue that there is a 'spatial dimension' in psychosis and postulate that these factors should be taken into account in a psychotherapy of individuals with psychosis who live in cities and struggle with certain aspects of spatiality and urban life. These may be key factors in understanding the meaning associated with places and why and how individuals are attracted to or avoid certain places.

Mapping the spatial and affective dimension

Considering the importance of place in the recovery process and challenges patients with psychosis are facing in such environments, we think that the exploration of patient's environment and their relation with it should become part of patient's clinical assessment. This can be achieved through various forms of mapping: (1) mapping of the spatial environment, (2) mapping memories and affective component, (3) mapping place attachment. These elements were condensed in two different maps: place attachment

diagram and life-space network. Here we first briefly review mapping methods in different disciplines.

Although not focusing on place, systemic therapy has described the reciprocal interaction between the individual and his/her environment in fine details[65–68]. Systemic therapy has a long tradition of non-verbal and visual methods, coined 'floating objects' (e.g. genogram, familial blazon, sculpting) in the French-speaking literature[69,70]. In 1994, Philippe Caillé and Yveline Rey noted that information transmitted verbally by families were often "maps that lead you around in circles" highlighting the importance of using other means of communication[69]. These methods are 'floating' in the sense that they are more concerned by the process, the qualitative and metaphoric information that emerges and the 'therapeutic space' that is created rather than objectivity.

Recently, McGrath et al. have proposed mapping approaches for locating affective experience in participants in mental health services or intentional communities living with learning disabilities[71]. As reviewed by Mc Grath et al. many visual methods do not include space or location in their narratives[71] with some exceptions like Nold's 'emotion maps' of cities based on the fusion of participants' GPS location and galvanic skin response data showing participants' affective responses in urban environments[71,72]. In their work, McGrath et al. have explored ways of studying emotional experience and their location [71] based on work by Gabb[73]. Based on two studies, they point out that maps are well suited for making 'the close relationship between the material environment and the emotional experiences of participants visible' and allow to unfold the experience of participants[71].

Townley et al.[74] have used participatory mapping with a group of 40 participants mainly diagnosed with schizophrenia. Participants were asked to ''… use this sheet of paper to draw the places that are important to you.'', then each place was plotted on a printed map. A mean of seven activity locations were reported on average by the participants. 'Activity space', the places to which participants travel daily, were identified. 'Activity space' area was correlated significantly with one question regarding general life satisfaction. Duff[15] used different approaches including participatory photo mapping[75] to determine 'how and under what circumstances local places support recovery'. GPS technology which are progressively used to determine life-space, shows that individuals with schizophrenia spend more time at home and research starts to disentangle 'what gets people out of the house'[45–47].

Mapping place attachment and life-space network

Based on these elements, we decided to propose two new tools that allow first to map place attachment (the place attachment diagram) and second to map urban practices (the life-space network).

Emotional bond: place attachment diagram (supplementary Figure 1)

This diagram brings together work on the social network diagram [76], place attachment [77], favorite places[15,26], meaning of places[32] and importance of home[78]. Plotting the diagram with different temporalities was based on the work on sculpting in family therapy by Onnis et al.[79].

The diagram is composed of concentric circle around a central point as in the personal social network[76]. The patient is asked to place 10 significant places (i.e. associated with positive or negative emotions), including one favorite place and home. Places located closer to the center represent places with stronger emotional bond or place attachment. The role of the 'present' diagram is to display at one glance the relations of attachment to the most important places in the current 'urban life' of the person. The 'future' diagram represents a 'wishful future regarding how and where one would like to live in order to feel a greater sense of security, peace and/or purpose' and represents the most important places in the person's life (e.g. 10 years from now). Finally, the 'past' diagram represents a constellation of places in a more or less distant past. Mapping the three diagrams (present, future, past), introduces the notion of temporality[79] which is important for individuals with schizophrenia who often experience time as fragmented[80].

Spatial practices: life-space network (supplementary Figure 2)

Here we are interested in the network obtained by the constellation of the most important places in an individual's life. In his landmark work 'The Image of the city', Kevin Lynch defines five components (nodes, paths, districts, landmarks and edges) that describe the mental representation of the city[81] which have also been used for a quantitative formulation [81]. The movements of a person in the city can in fact be characterized by a graph: edges are paths (e.g. distance travelled on foot, by bicycle, by public transport) while nodes represent places (e.g. home, healthcare unit, parks) [82,83].

Here the patient is asked to position the 10 places chosen in the 'place attachment diagram' on a map. The aim of this approach is to emplace the personal history i.e. to get a topographical knowledge of the important events in the patient's life and explore the meaning of certain places which may trigger attachment or avoidance. In a second step, places from the 'future' place attachment diagram are also placed on the map. Here again, the aim is to explore how the service user wishes to broaden his/her social and geographical milieu. An understanding of what hinders this process is important (in terms of symptoms and meaning) before activating a change.

Discussion:

Studying the intimate and personal relationships tied with places allows to uncover 'personal geographies' which need to be recognized in order to work on the relationship with the city (clinical vignette in supplementary material). We thus suggest that the personal and wider geographical environment in term of places should be taken into account in psychiatric formulation which is usually not the case. McGrath et al. used map making to grasp the spatial experience in mental health service use and in an intentional community for people with learning disabilities[71]. Other authors have also used map making as a research tool to explore recovery in severe mental illnesses [15,74]. The novelty of our approach is two-fold. First, we suggest the use of cartographic tools to capture the role of urban space specifically in individuals with psychosis. Second, we conceptualize these tools to promote recovery in psychosis patients. The two proposed maps (place attachment diagram: supplementary figure 1; life-space network: supplementary figure 2) may be repeated during the recovery process to evaluate progress and broadening of the social and geographical

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perimeter. A brief semi-structured interview (table 2) can help assessing urban practices in relation to the life-space network. The current psychotherapeutic tool is concerned with the qualitative dimension and the process it can elicit with the patient rather than a quantitative dimension.

From the current work, which consists of a review, the conceptualization of two mapping tools and a therapy experience with a patient, three noteworthy themes emerge which deserve further discussion: (1) spatial biography through topography of life events (2) network through connectivity between places and (3) continuity in person place-bond and atmosphere.

Spatial biographies

Pierre's clinical vignette (supplementary material) illustrates how important memories are linked to places and thus have spatial coordinates. Here we argue that spatial biography is important to understand the lived experience in cities and service users' urban practices. The proposed tools may thus allow to map the 'spatial biographies' of individuals or the geographical emplacement of important life events in the city in terms of location of home(s), visited places as well as positive and negative experiences and emotions lived in the city. During different times of the day and at different clinical stages of recovery, patients may need different types of enabling places ranging from 'restorative' properties to more active 'stimulating' spaces[84]. Therapy could help creating habits and define places with different purposes like being, doing, belonging and becoming as well as places for transitions (table 1). A relevant topic that emerged during Pierre's psychotherapy was the everyday challenge to 'switch' between 'being' and 'doing' and the challenge of 'becoming'.

Urban network

We propose that the mesh of places in the urban lives of young individuals is best considered as a network which can be drawn in therapy. Representing urban practices by a network allows to map urban mobility which link together significant places for the service user. Duff suggested that there is a 'a link between recovery and the number and quality of the enabling places that one has access to…'[15]. Viewing urban life and practices as a network enables to take a systemic point of view and reveal the location of resources and stressors in the city. Affective bonds and sense of security offered by home may be necessary before an individual may be able to further explore the city. We

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hypothesize that the location of home and its relative position to significant places in the city (topology) is relevant for recovery. Place experience is the product of the interaction between mobility, social interaction and built environment useful in this perspective to perform a functional analysis (Table 2). Indeed, mobility and social interactions are often needed to access resources in different parts of the life-space network. Mobility and pauses are two complementary notions that determine the dynamics of the network: mobility as the way to access resources in the city and pauses necessary for respite, meaningful activities and for the process of place attachment. We hypothesize that in psychosis, different factors like stigma, abnormal space experiences, personal experience associated with places may interfere with these processes. Recently, GPS tracking and network analysis were applied to visitor mobility in the tourism industry[82] which may allow quantitative analysis of such life-space networks.

Continuity, identity and atmosphere:

Places and place attachment play an essential role in the development of a sense of security within a city and in establishing a relationship with a city. Citing Hay[85], Lewicka notes[23] that "The important part of Hay's analyses is the emphasis placed on the link between sense of place[2], developed through rootedness in place, and individual self-continuity. Rootedness, i.e., the person-place bond, is considered the prerequisite of an ability to integrate various life experiences into a coherent life story, and thus it enables smooth transition from one identity stage to another in the life course." These considerations may be particularly important in individuals with or at risk of psychosis known to exhibit difficulties in the narrative process of their lives[68,86,87]. Disruption in place attachment are major life events[30] and it is not known if these considerations may play a role either as a trigger (e.g. in relation to residential mobility, migration) or a consequence of psychosis. Interestingly, in one study, examining the impact of place attachment on quality of life in patients with psychosis or bipolar disorder[88], perceived physical and social-environment qualities predicted quality of life and place attachment mediated the relationship [88].

In the same line of thought, places contribute to defining ones' self[31]: 'In general, individuals may connect to a place in the sense that it comes to represent who they are.' The places encountered and used by patients thus also contribute to their social identity, important in early psychosis[89]. Congruence between the individual and place as defined by Kaplan[90] (i.e. places supporting one's

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[2] i.e. place attachment and identity

plans) seems also important in this context. Place attachment style and memory of events in the city may have an impact on urban practices. In fact, different approaches could be helpful to develop or enhance place attachment (Table 3).

While some places offer respite, others trigger stress or are less enjoyable for patients[3].

Abnormal space experience[42] may contribute to modulate this perception in some patients. It is possible that beyond the question of security and exclusion, for some patients, abnormal space experience may imbue place experience modifying its atmosphere which may become strange and unfamiliar.

"Atmosphere 'captures how we experience and are affected by the conjunction of different aspects of what surrounds us: the presence of others, physical space, light, heat, colour or other elements perceived by our senses' [16]. Duff found that "affective atmospheres provide a unique conceptual and empirical lens for delineating more of the embodied, social and political conditions of recovery"[91]. He suggests that during the process of becoming well, it is the encounter of the person with social, material and affective resources which provides an "atmosphere of recovery" [91]. In fact, patients in the early phase of psychosis during their process of recovery actively create atmospheres of comfort while moving around the city[16].

In summary, creating enabling places[91] or 'niches', habits in safe havens, meeting with people, helping with mobility are some of the avenues to be explored to transform an 'unfamiliar space' into a 'place'[17,25] embedded with sense of belonging, hope and positive atmosphere for individuals with psychosis. In a context where service users suffer from being defined only by their mental illness[92], connecting with places outside mental health services may help to redevelop their identity as a person[17].

Limitations

It may be argued that a recovery-oriented program applying the CHIME paradigm (personal recovery model)[93] may be sufficient to help patients recover in the spatial domain. Further, early psychosis programs with case-management services and mobile teams, accompany patients in the community and to a certain extent help patients in "reconnecting and rediscovering the spatial domain". However, the CHIME model has its limitations[16,91] and there have been calls to describe the ingredients leading to recovery at the individual level / first person perspective [91]. In addition many service users do not achieve functional and/or personal recovery[94,95]. We thus believe that recovery is best considered as an emplaced process[16] and adopting a clearer conceptual framework regarding space and place in early psychosis may further improve recovery.

Conclusion

We propose that psychosis and some of its characteristics (e.g. space experience, risk factors etc.) shape place experience which in turn may affect the process of recovery potentially through processes such as place attachment, identity or the narrative self. We thus advocate a 'place making' therapy[91] or 'place psychotherapy', in the sense of facilitating patients to '(re)-discover' or 'co-create' places to which they identify and support them in moving forward on the path of recovery. Here we also argue that 'spatiality' is a very much forgotten dimension in psychotherapy, especially lacking in approaches to treat psychosis. More work is needed to adapt these tools as a quantitative method and research tool, and it is clear that several aspects of the current paper remain speculative and should be tested in a community-based participatory research. We are however convinced that paying attention to such issues may contribute to foster the recovery process, in psychosis as well as in other disorders and clinical situations.

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Place impacts on recovery:	
Being	• Security, privacy and stability • Identity and self-esteem • Emotional bonds and place attachment • *Restorative properties**
Doing	• Every day and routine activities • Recovery-promoting activities • Choice and control over doing
Becoming	• Hope and exploration • Overcoming challenges, goal-setting and determination • Growth and development
Belonging	• Connecting with others • Inclusion and integration • Affiliation and belonging • *Place attachment**
Interrelated impacts (i.e. balancing between different 'functions')	• Being and belonging; balancing private and social lives • Moving forward; doing, being and belonging

Table 1. Place typology according to Doroud's meta-ethnographic approach (Doroud et al., 2018). Place characteristics influencing recovery are natural environments; housing; supported housing; financial and material resources; temporal aspects; neighbourhood and locality; services and social ressources.

* Added to Doroud et al. 2018 original table.

Accepted

Domain:	Questions:
Avoidance of the city	How many times a week do you go to the city center? At what time of the day? Where do you go? Are there things that make you feel uneasy in the city? (Explore in terms of crowding, noise, social interactions and stigma)
Home	Where do you live in the city? Do you feel at home there? Where does your family live? Is there anything you could change in your home to increase the sense of home? Would you like to move from where you live? How would you feel if your home was moved from here... to here... ? Would this increase your comfort ? Are there any risks/hindrance of doing so?
Places	Why do you go to these places and what do you do in these places (explore in terms of 'being, doing, belonging, becoming')? Why are these places important; were there any important life events in these places? How many times a week do you go to these places? What material, affective and social resources do you look for in these places? Have you experienced trauma in any particular location? Are there other places that do not appear on the map?
Mobility	How do you move around in the city; how do you get to these places? Do you experience any difficulties in moving around the city ?
Social interactions	Do you avoid any places in the city? (explore in terms of traumatic/stressful experiences, social defeat, paranoia, social anxiety, negative symptoms). Do you avoid places to avoid encounters with known others? Whom do you meet in these places (family, friends, colleagues)?

Table 2. Assessing urban network and urban practices (adapted from Baumann et al., 2019)

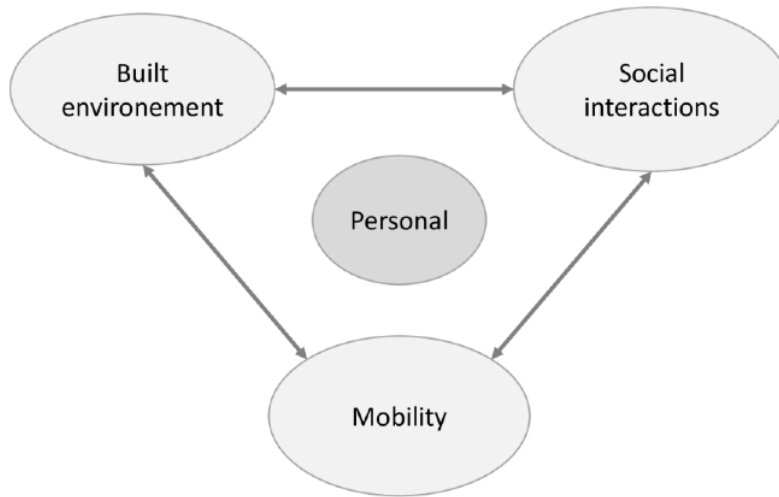| Domain:	Possible measures:
Habits and organization	• Stay long enough, move less (Lewicka 2011) • Develop sense of home as a secure base to further explore the city, gather objects (Graumann et al., 1983) • Know and organize details of the environment (cognitive dimension of place attachment) (Scannel and Gifford 2010; Fullilove 1996). • Creating habits (routine declarative memory) (Lewicka 2014)
Knowledge	• Interest in history of place (Lewicka 2014) or other emplaced culture • Interest in personal history (or family history) to understand the positive or negative emotions linked to the place
Being proactive	• 'Create' new places, find 'congruent places' • Experience the place through meaningful activities
Social interactions	• Develop bonds with people

Table 3. How to develop place attachment

Figure 1. The experience of place. Experience of place can be represented as the interaction of built environment, social interactions and mobility. The personal dimension is composed by the personal experience in terms of memories and emotional bonds with places (place attachment) as well as the spatial experience (possibilities to move around the city, migration, residential mobility), trauma, stigma, economical factors, psychosis, abnormal space experience.