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Integrating place into research on drug use, drug users' health, and drug policy

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Introduction

Over the past 15 years, place has become increasingly prominent in research on drug use, drug users' health, and drug policy. This line of inquiry, however, is not new. Interest in the ways in which place characteristics shape drug use and drug users' health has varied over time, often in tandem with paradigm shifts in the extent to which contextual factors have figured as possible determinants of health and well-being. The 1800s witnessed an intensification of interest in how place characteristics and other contextual factors shaped health in general and substance misuse in particular. In 1826, for example, Villerme analyzed tax and death records in Parisian *arondissements* and concluded that mortality rates were highest in impoverished neighborhoods.(Susser & Stein, 2009) Twenty years later, Virchow attributed the typhus epidemic in Upper Silesia (Prussia) to the local confluence of several sociopolitical factors, including the rise of the plutocracy and the immiseration of the working class.(Brown & Fee, 2006) Likewise, physicians in the 1880s–1890s commonly ascribed opiate misuse among affluent White men in US cities to the strains of constructing civilization in the midst of rapid industrialization.(Cooper, 2004)

This focus on context and place diminished between World War I and the 1960s, and was replaced by an emphasis on individual-level factors. During these decades, hysteria about communism made it difficult to propose that social factors (e.g., poverty) shaped any form of health-related outcome,(Krieger, 2000) and the rise of successful biomedical interventions (e.g., widespread access to antibiotics) and the ascendance of psychology and psychiatry rendered individual-level frameworks attractive (Ellen, 1995). During this period, for example, physicians attributed opiate addiction to individual psychopathology, rather than to broader social factors.(Cooper, 2004)

Conflict of Interest
The authors have no conflict of interest to report.

Contextual factors were restored to etiologic frameworks in the latter decades of the 20th century. This restoration was prompted in part by widespread social movements that highlighted the power of social structures and by the challenges that HIV/AIDS posed to exclusively individual-level frameworks.(Fee & Krieger, 1993; Krieger) During this period, place moved to the foreground of research on drug use, drug users' health, and drug policy(Cooper, Bossak, Tempalski, Des Jarlais, & Friedman, 2009; Strathdee et al., 2010; Thomas, Richardson, & Cheung, 2008; Tempalski & Mcquie, 2009), most notably with the formulation of Rhodes' Risk Environment Model, which defined the risk environment as the "space … [where] factors exogenous to the individual interact to increase the chances of HIV transmission".(Rhodes, Singer, Bourgois, Friedman, & Strathdee, 2005, p. 1027)

Though a focus on place is not new in research on drug use, drug users' health, and drug policy, major challenges remain. Key challenges include theorizing place and place-making processes; defining place and measuring place characteristics; and delineating causal processes that link place characteristics to relevant outcomes. Additionally, work in this content area has been largely limited to specific countries (e.g., the US, Canada, Australia) and to specific subpopulations within these countries. This special issue has been designed to strengthen the resurgence of work on place, drug use, users' health, and drug policy by responding to these challenges.

Mapping Activity Spaces

The papers published in this special issue have generated several advances in the conceptualization and measurement of "place" in research on drug use and health. The majority of past geospatial research on the risk environment has located people using their home address and has operationalized "place" using administratively-defined boundaries (e.g., census tracts, ZIP codes). Many people, however, actively avoid acquiring drugs near their homes, given the stigmatized nature of substance use; likewise, sex workers may not want to communicate with clients or provide services to clients near their homes. While features of the residential areas where people live may indeed shape vulnerability and resilience to drug-related harms, features of the places where they acquire and use drugs, and where sex workers communicate with and serve clients, may also affect drug-related health outcomes; depending on the outcome, the latter set of exposures may be as or perhaps more influential than the former.

Martinez, Lorvick, and Kral (2014) described "activity spaces" in sample of people who inject drugs living in San Francisco, California (USA), and explored the relationships of these activity spaces to several health- and service-related outcomes. Activity spaces are defined as "the local areas within which individuals habitually move about in the course of their daily activities." This team mapped the locations where study participants "hung out" most during the day; slept most; and used drugs. Reflecting the limitations of simply focusing on where people reside, they found that the average distance among these three loci was 1.5 miles. Notably, only 9.6% of the sample had a syringe exchange program located within 50 meters of the routes connecting the places where they hung out, slept, and used drugs.

Kori et al's (2014) research further testifies to the significance of studying activity spaces. By mapping the locations where study participants injected, Kori et al. (2014) were able to identify an "HIV incidence hotspot" in which >90% of the people with newly-diagnosed HIV in their cohort had injected recently. This hotspot was approximately 1.95 km2, and overlapped substantially with Tijuana's "Zona Roja," an area in which sex work is tolerated. At issue in their paper is the set of factors that predicts injecting in this high risk activity space. While predictors varied by gender, encounters with police predicted injecting in this "hotspot" for both men and women.

Deering et al's (2014) innovative integration of geospatial data on sex workers' activity spaces with existing data on the local built environment allowed the team to explore novel questions about spatial isolation and drug-related risks. Deering et al., (2014) mapped the locations where sex workers in Vancouver, Canada communicated with and served clients, and created buffers with radii of 50 meters around each point. Drawing on past conceptual and empirical work on the built environment, they then integrated existing administrative data about features of the built environment (e.g., presence of light posts; road length) to create a new measure of the spatial isolation of each individualized risk space. A key policy recommendation emerging from this work is that specific safer-environment interventions (e.g., increasing the presence of light posts) may improve the health and safety of sex workers in their occupational environments.

Encompassing Multiple Scales and Histories in Conceptualizations of Place

Rosenblum and colleagues (2014) offer an expansive and enriching conceptualization of "place" that encompasses history and recognizes the interactions of global and local scales. This team integrated ethnographic methods with social epidemiology to study the relationship between Puerto Rican residential segregation in US cities to the diffusion of Columbian-sourced heroin. Quantitative findings indicate that cities with larger and more segregated Puerto Rican populations were more rapidly saturated with Columbian-sourced heroin, and had cheaper heroin, than other cities; these findings challenge past research that has suggested that distance from points of entry (e.g., Miami) alone shaped the diffusion of this drug. To help explain these statistical associations, the authors integrate insights from ethnographic work that highlight historical patterns of racial/ethnic discord; urban deindustrialization coinciding with mass migration from Puerto Rico to the US mainland; and persistent poverty.

Describing Micro-Environments

While most research has considered macro-environments as places of risk, Knight et al., (2014), Smoyer and Blankenship (2014), and Siegler et al's (2014) papers describe interior micro-environments that may foster or diminish risk. Knight et al's (2014) research, for example, analyzes the role of single room occupancy (SRO) hotel rooms in exacerbating and ameliorating negative mental health outcomes for substance using, poor women in San Francisco (USA). Drawing on Rhodes' risk environment framework, the authors examine the relationships among space, drug use, and mental health to reveal the linkages among housing policies, the socio-structural organization of urban built environments, and

everyday behaviors. By focusing on these interior micro-environments, this research provides new insight into the factors shaping local geographies of women's mental health.

Smoyer and Blankenship's (2014) research contributes to the emerging of field of "carceral geography," which seeks to understand "the nature of carceral spaces and the experiences within them" by examining how the regulation of prison space and the movement of people through these spaces affect incarcerated women's health and well-being. The authors analyze women's narratives about food in prison to describe how the "prison place" shapes access to food and eating behavior and how food and eating behavior construct the prison experience. This research moves beyond barbed wire to illustrate how the "prison place" is produced and structured by correctional policy, elected officials, and staff who create and enact these policies.

Siegler et al's (2014) report on unintentional drug poisoning deaths in New York City between 2005 and 2010 found that three-quarters of these deaths occurred inside the home. One implication of this finding is that overdose prevention efforts should focus on home-based interventions designed to prevent overdoses from occurring in the first place and to prevent overdoses that do occur in the home from becoming fatal.

Placing New Populations

While some papers in this special issue have focused on identifying and describing new "places" of risk, several papers have extended the line of research on place characteristics and substance use to encompass new populations. Noting that HIV prevalence among Malaysian fisherman is ten times that found in the general population, West and colleagues (2014) studied the ways in which boats, as physical and social spaces, shape the drug scene and HIV risk among Malaysian fishermen. Wechsberg et al. (2014) studied whether and how characteristics of neighborhoods in a Black African township near Cape Town (South Africa) related to HIV serostatus in a sample of men recruited from shebeens (which are informal drinking establishments) and their partners. Three papers in this special issue focus on understudied populations in extensively-studied geographic areas (the USA and Canada). Tobin and colleagues explored complex relationships among place, social networks, and substance misuse among African-American men who have sex with men in Baltimore, Maryland (USA). Kao et al. (2014) applied geospatial methods to study the relationship of spatial access to outpatient drug treatment facilities to drug use and treatment utilization among Mexican Americans in Houston, Texas (USA) who are current or former heroin users. McNeil and colleagues (2014) expanded research on gender-based violence in drug scenes to include "marginal men" – that is, men who occupy a marginal position in the drug scene because of their income-generation strategies, age, disability, health status, social isolation, or drug use practices. They find that hegemonic masculinities operating in the drug scene in Vancouver (Canada's) Downtown East Side shape marginal men's (and women's) experiences of violence, and that these experiences, in turn, influence the spatial practices of marginal men (and women) within the drug scene.

Delineating Causal Pathways

While several papers have identified statistical relationships between place-based exposures and drug- and HIV-related outcomes, the mechanisms underlying these statistical associations have rarely been explored in quantitative analyses. Sterk, Elifson and DePadilla (2014) take the important step of investigating some of the pathways linking a particularly potent place-based exposure – perceived neighborhood disorder – to the frequency of crack use in a sample of African-American adults living in Atlanta, Georgia (USA). They find that this relationship may be mediated by trading sex for drugs and by characteristics of drug use networks.

Describing Place-Making Processes

"Not-In-My-Backyard" (NIMBY) responses to harm reduction programs, drug treatment facilities, and drug-using clients have become common. Research by Davidson and Howe (2014) deepens our understanding of how characteristics of "place" affect whether particular areas adopt harm reduction services or other unpopular services. This study highlights how different experiences and meanings ascribed to a "place" shape local debates about the location of harm reduction services. Their study examined the role of NIMBY conflict in civil efforts to prevent the relocation of an existing syringe exchange program (SEP) and services for youth homeless in San Francisco, California (USA). This work offers a new analytic frame that focuses on the important role of "place-making and contested spaces" in shaping local responses to programs for stigmatized populations. The authors' argue that the specific form of NIMBY in their case study is not fueled by the hatred and fear of drug users that typically characterizes community debates around SEPs and services for homeless individuals, but is rather influenced by a desire on the part of new home owners to create and maintain a specific identity and character within the neighborhood.

Morrison et al's (2014) paper focuses on a highly relevant topic for harm reduction policy and drug policy advocates: the location of marijuana dispensaries. The authors hypothesized that dispensaries in the USA would be concentrated in and near areas of high cannabis demand, and in socially disadvantaged areas. In the absence of any prior research into medical cannabis markets, the authors utilize theory drawn from economic geography. Finding that cannabis dispensaries were located in areas with higher rates of poverty and alcohol outlets, and in unincorporated areas, the authors posit that dispensaries may open in areas that lack the resources to resist them.

Developing Theory: Place, Power, Agency & Drug Users' Health

Theoretical contributions in this issue articulate the ways in which "place" plays a key role in organizing and structuring our social and physical lives; "place" is a key element for understanding our identity and creates "context and meaning" (Cresswell, 2004) for our lived experiences, behaviors, and actions. Context and experience of "place" can differ for people who use drugs, compared with non-drug users. Duff's (2014) critical discourse of "contexts" as an assemblage of spaces, bodies, and affects provides a compelling new logic for examining individual drug use settings and experiences. Drawing on Deleuze's notion of assemblage, Duff documents the ways in which "context" is produced in the activity space

of drug use, and how "context" as a construct moderates drug use and experiences with drug use.

Additional theoretical contributions by Szott (2014) and Strike and colleagues (2014) consider the roles of place and notions of "governmentality" as sites of agency for people who inject drugs (PWID) within health care service settings. Szott's (2014) analysis examines how PWID negotiate the medical social control and institutionalized disciplinary power they encounter in hospitals, which are highly regulated places in the USA. De Certeau's insights about the relationships among space, place, and resistance guide this analysis, including De Certeau's notions of delinquencies and transverse tactics. Szott's (2014) discussion invites us to consider how the practices of hospital space become more important than the place of the hospital itself.

Strike and colleagues' (2014) commentary on practices within hospitals poses intriguing questions concerning the relationship between subjectivity and spatial arrangements in mediating the success of harm reduction policy and practice. This commentary considers the idea of implementing harm reduction principles in hospitals that treat significant numbers of people who inject drugs and are HIV positive. Drawing on theoretical contributions from health geography, medical sociology, and Foucault's discourse on "centralized power," the authors examine how implementing harm reduction policies and practices is shaped by "space and contested understanding of place and health." The authors chose to frame the hospital, Casey House, as a "drug using context" and then analyzed spatial relations and connections to practices of drug use. They find that two key, interconnected issues arise when harm reduction policy and practice are employed in this hospital setting: (1) the discordance between harm reduction and hospital regulatory policy creates contested spaces; and (2) within these contested spaces, drug-using and non-drug using clients negotiate spatial boundaries. Strike and colleagues (2014) recommend that harm reduction research and practice take into consideration the unique socio-spatial issues that emerge from the enactment of harm reduction policy and practice in medical settings.

Reflection and Summation

The papers in this special issue provide several methodological, conceptual, and theoretical advances that we hope will inspire and guide future research on place, drug use, and drug users' health. Moving beyond the traditional method of linking people to places via their home addresses, several papers in this special issue consider activity spaces, and seek to describe the nature of these spaces and the predictors and outcomes of engaging in specific behaviors in these spaces. One possible additional direction for this research might be to recognize that users inhabit multiple different kinds of activity spaces in their roles as parents, partners, friends, and workers (e.g., schools, workplaces), and that their experiences of these spaces may also affect health. Other papers considered users' interior micro-environments (e.g., SROs, prisons) as determinants of health. Expanding research on these interior micro-environments may be particularly important for understanding women's health, given that women's participation in public life is often constrained by gender roles and by the intense stigma of being a drug-using woman (particularly a drug-using mother).

While most studies of place, drug use, and drug users' health focus on either small areas (e.g., neighborhoods) or on larger geographic areas (e.g., metropolitan areas) and take an ahistorical view of places, Rosenblum et al's (2014) work calls attention to the interpenetration of the local with the global, and to the salience of the past to the present. We hope that their research helps to pave the way for new research that examines small areas within their broader sociopolitical contexts, and understands the ways that the history of a place shapes its present.

As is the case with research on place and health more broadly, quantitative research on place, drug use, and drug users' health tends to focus on statistical associations between exposures and outcomes and rarely explores pathways. Identifying these pathways, however, is important for bolstering arguments that these relationships are causal; helps build conceptual frameworks; and can identify key points for intervention. We hope that future quantitative analyses build on the efforts of Sterk and colleagues (2014) by seeking to identify the mechanisms that link place characteristics to health.

Several papers expanded the populations studied to include previously understudied groups. We note, though, that most papers in this special issue covered North and Central America; the field of research on place, drug use, and drug users' health is similarly limited in its geographic scope (though it typically also includes the United Kingdom and Australia). Findings from these select contexts may not be relevant globally. Expanding research on place, drug use, and drug users' health to include other geographic areas may open up new questions and identify new possibilities for intervention, particularly when it is spearheaded by residents of those areas.

Theoretical contributions considered how social conditions relevant to producing harm are incorporated (and reproduced) through every day practices and subjectivity (Duff, 2012). Duff's (2014) paper, for example, develops and applies a theoretical model of social context drawn from Deleuze's notion of assemblage to consider the "time and place" of drug use and harm. Additional theoretical contributions presented in this issue give new meaning to how place and governmentality discourses act as sites of agency for PWID within new and different service settings and medical practices. It is our hope that these thought-provoking contributions will help advance harm reduction policy and practices within health care and clinical settings.

Most civic debates on the location of unwanted services have focused on concerns about personal security, declining property values, or a generalized perceived threat to the neighborhood's quality. However, Davidson and Howe's (2014) research extends our understanding of NIMBY and contested space by describing how broader arguments that are rooted in local histories and narratives shape local NIMBY opposition to service relocation. This paper provides useful insights for future civic debates about implementing harm reduction services. Specifically, their findings suggest that service organizations should articulate the aims of the proposed service in terms that fit in with the local community's pre-existing narratives and histories.

Recent changes in drug policies in the US permit medical cannabis dispensaries to operate in several states, but the geographic locations of these dispensaries within states is highly contested. A parallel process has been evident in the US for SEPs for decades. To our knowledge, Morrison et al's (2014) paper presents the first analysis of factors that predict the locations of medical cannabis dispensaries. Their findings should inform future discussions and local debates about the locations of these sites by highlighting the importance of balancing local need for these important health services with concerns that these dispensaries may be overly concentrated in disadvantaged areas.

During this era of renewed interest in place, it is our hope that the articles in this special issue advance theory, overcome some methodological challenges, and expand the range of populations considered in the study of "place" as a context for understanding drug policy, drug use, and drug users' health.

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