

THE CAGE OF MODERNITY:
THE “RAT PARK” EXPERIMENTS AND THE HISTORY OF ADDICTION

JAMIE GIBSON

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Abstract

This thesis reconstructs the cultural, political, and intellectual influences that made Rat Park conceivable for Bruce Alexander in 1970s Vancouver. Alexander's research built upon a twentieth-century tradition of analogizing humans to rats, yet it reversed the assumption that learning occurs under deprivation by replacing laboratory cages with a rodent "utopia": the enriched environment of Rat Park. Under these conditions, addiction appeared not as neuro-physiologically predetermined but environmentally constituted. I propose that Rat Park's methodological divergence challenged punitive policy, as Alexander redefined addiction as an *adaptive* response to politically produced deprivation. Rat Park had limited uptake in its immediate aftermath until the experiments were canonized in the early twenty-first century leading to renewed interest in policy circles. This thesis argues that, despite Rat Park's successes, Alexander ended his career dissatisfied because he understood Rat Park not as a politically operative model but a thought experiment demonstrating the futility of drug policy.

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The Makings of Rat Park

On Monday, June 19, 1978, The Vancouver Sun's "Perspective on Science and Technology" section featured an article titled "Contented Rat Rejects Heroin; When frustration, boredom are absent, rodents kick habit, become social users" (The Vancouver Sun, 1978, p. 6). Since the 1960s, experiments conducted on caged laboratory rats—described in the article as animals "penned up" in "solitary"—had established that rejecting heroin was effectively impossible. These studies supported the dominant understanding of addiction: that drugs invariably produce addiction, not only in rats but in humans. Against this experimental norm, the figure of a "contented rat" able to take or leave heroin was anomalous. As the article reported, "the rats in Rat Park have friends, room to roam, and things to climb on and explore. Heroin is no curse here: the rats can take it or leave it and mostly they leave it alone" (The Vancouver Sun, 1978, p. 6). The article's author, Tim Padmore, was describing the Rat Park experiments conducted by Bruce Alexander and his colleagues at Simon Fraser University. More than half of the page-six article was taken up by a black-and-white photograph of a rat perched on a wire climbing structure inside an unconventional laboratory enclosure, with wood-chip-covered floors and walls painted to resemble the forests of British Columbia. The image was captioned, "Contented rat surveys his domain in Rat Park at Simon Fraser University" (The Vancouver Sun, 1978 p. 6).

The novelty of the "contented rat" rested on a reconfiguration of the experimental environment. Padmore described the two experimental conditions that produced this result: rats placed either in "Rat Oakalla¹", the standard laboratory cage, or in "Rat Park", an enriched environment. Given a choice between "plain water or morphine cocktail," "Rat Park residents went for the water," and their morphine consumption was "four times less than their kin in the repressive atmosphere of Rat Oakalla." In the late

¹ "Oakalla" refers to the Oakalla Prison Farm, a provincial prison complex in Burnaby, British Columbia that operated from 1912 to 1991 and became widely associated in British Columbia with incarceration, overcrowding, punishment, and social disorder (Anderson, 1993).

1970s, amid the escalation of the War on Drugs, this finding suggested that highly controlled, repressive—even carceral—environments did not mitigate addiction but could help produce it, a conclusion that threatened the legitimacy of prevailing addiction science, treatment, and policy. While acknowledging the risks of “projecting the rat results to humans”, Padmore nonetheless pointed to two radical implications of the study: first, that “drug taking behaviour in rats—and maybe humans—is distorted by an unnatural environment,” and second, that “if heroin were legalized and cheap there would not be an explosion of junkies; but there would, presumably, be a dramatic decline in dope-related crime” (The Vancouver Sun, 1978).

Yet this 1978 issue of The Vancouver Sun marked not only Rat Park’s public debut, but also the moment it became publicly contested. On page 5 of the June 19th edition, Vancouver’s chairman of the Alcohol and Drug Commission, H. F. Hoskin, issued a sharp editorial rebuttal arguing that “the experiments being conducted with morphine-addicted rats by Dr. Bruce Alexander at Simon Fraser University do not debunk some important assumptions about drug addiction”. Instead, he positioned the study as a direct challenge to “the policy of the Alcohol and Drug Commission to reduce chemical dependency”, suggesting reform “proposals such as those of Dr. Alexander” must be “resisted” so as not to “to add a substantial number of British Columbians to the list of persons unfortunate enough to be dependent on mind altering heroin” (The Vancouver Sun, 1978). From the moment it entered public circulation, Rat Park was not simply a laboratory finding but an intervention into a contested field of knowledge, in tension with dominant understandings of addiction, its causes, and the forms of control it justified.

This thesis first reconstructs the cultural, political, and intellectual influences that made Rat Park a desirable research project for its originator Bruce Alexander in late 1970s Vancouver before examining the selective uptake of this research in twenty-first century drug policy circles. Alexander’s research built upon a twentieth-century tradition of analogizing humans and their learning to the behaviour of rats. In these experiments, the lab rat was definitionally deprived—hungry, sex starved, or isolated—in a perpetual struggle for existence (Simmons, 2020). These experiments trafficked not only the image of the

rat as “bare life” but also as a “plastic” organism capable of learning new behavioural patterns through interaction with its environment. Alexander reversed the logic of much twentieth-century behavioural sciences: instead of depriving the rat to study the true “nature” of learning, he asked what if the scientists enriched their environment and built them a utopia. Would behaviours such as addiction—previously understood as neurophysiologically determined— become legible as learned responses produced by environments of deprivation? And if so, how might drug use change under enriched conditions?

I propose Alexander’s Rat Park not only reversed the logic of twentieth-century behavioural science but undermined the scientific foundations of late twentieth-century drug policy, demonstrating how “addiction” and the figure of the “addict” are produced, organized, and stabilized under politically produced conditions of environmental deprivation. Although belonging to a twentieth century research tradition, Rat Park had quite limited uptake in its immediate aftermath. This changed when the experiments were canonized among other dramatic if not dramaturgical experiments in the early 21st century (Slater, 2004). This led to renewed interest in drug policy circles where Rat Park became an icon of social movements in the 21st century, promoting interventions in drug education, treatment, and legislation that stabilized Rat Park’s findings in ways Alexander largely rejected. This thesis will reconstruct both the ways of life found in Rat Park and the experiment’s subsequent afterlives in the world of policy.

Prior to conducting Rat Park, Alexander had extensive experience using animals to model human phenomena. Trained in comparative psychology with a minor in zoology, he completed his graduate work at the University of Wisconsin under Harry F. Harlow (1905-1981). In the 1950s and 1960s, Harlow’s primate laboratory used animals to model human phenomena in highly dramatized ways (Harlow et al., 1964; Harlow et al., 1966; Vicedo, 2009). Most notably, Harlow’s wire-mother experiments forced infant rhesus monkeys to choose between a wire surrogate that provided food and a cloth surrogate that provided comfort, demonstrating how deprivation disrupted “normal” behavioural patterns (Vicedo, 2009). Alexander participated directly in this research program, co-authoring the 1964 paper *Maternal Behavior of Socially Deprived Rhesus Monkeys* and the later 1966 paper “The Effects of Peer-Deprivation on

Mother-Reared Rhesus Monkeys”. These experiments exemplified how captive animals, or the animal “other” (Haraway, 1989), could be used to tell human stories. Yet in Harlow’s lab, this “storytelling” came at the cost of controlled, harsh, and often cruel experimental conditions, casting the laboratory as a site of deprivation or even torture, as animals not only modeled emotional phenomena but experienced profound emotional distress (van Rosmalen, 2022). In this respect, Alexander came out of the wire-mother tradition, as Harlow’s work demonstrated not only the experimental link between social environment and behaviour but also a model in which pathology was produced through isolation—one that Alexander would later invert.

After completing his MA and PhD at the University of Wisconsin with Harlow, Alexander relocated to Canada. In a 2025 podcast interview, Alexander reflects on his upbringing in the United States and his reasoning for relocation (Wakaluk, 2025)². Born in 1939 in New York, he was raised during World War II in an atmosphere of intense nationalism, shaped by pride in the United States’ military, industrial, and economic contributions, and by its emerging position as the self-proclaimed “Leader of the Free World”. Yet as the 1960s began, this childhood American exceptionalism gave way to a growing disillusionment with both the political and academic climate in the United States. Politically, Alexander was appalled by the continued resistance to the Civil Rights movement and the escalation of the Vietnam War. As the 1968 election approached, Alexander joined the McCarthy for President campaign in an attempt to persuade others that the war was unjust and to salvage his belief in the United States through political solidarity (Wakaluk, 2025). Despite his efforts, Alexander continued to feel a deep “disappointment in the political process”, as the United States, rather than embodying the postwar democratic promise, appeared to him as “just another imperial power”. This growing disillusionment

² The transition from the United States to Canada is often alluded to but not made explicit in Bruce Alexander’s work and public interviews. In 2018, Chris Wakaluk launched *The Stories That Brought You Here*, a podcast focused on the residents of Pender Island, British Columbia. In a March 2025 episode, Alexander—who has lived on the island for decades—offers one of the most explicit accounts of his relocation from the United States to Canada. This account guides the following retelling of Alexander’s motivation to leave the United States. Quotes included are directly from the interview.

would come to shape how Alexander understood the institutions around him, as he began to recognize similar constraints within academia.

As he was finishing his PhD with Harry Harlow in the late 1960s, he saw similarities between the disappointing political climate and the constraints within academic communities. At the University of Wisconsin, government funding agencies imposed constraints on the Primate Lab he worked in, dictating what could be studied, how findings were interpreted, and how they were to be disseminated (Wakaluk, 2025). Primate research on sex differences in the brain, for example, was discontinued under these constraints. By 1966, despite these growing frustrations, Alexander had completed his PHD and started a family. Yet the election of Richard Nixon in 1968 marked a breaking point for Alexander. As historians have noted, Nixon's defeat of McCarthy signaled “the end of the civil rights era” and the beginning of “Republican dominance” (Mayer, 2002, p. 351). In this context, Alexander left the United States for Canada in 1970, leaving his wife and children behind. In 2025, he reflected, “I am kind of an anti-American...” (Wakaluk, 2025), a position that shaped his political commitments, intellectual trajectory, and ultimately his relocation to the newly established, “free thinking” Simon Fraser University in Vancouver, British Columbia (Johnston, 2005).

Alexander had moved to Canada in search of a more palatable political and intellectual climate. A key part of Canada’s appeal for Alexander lay in Prime Minister Pierre Trudeau’s (1919-2000) refusal to support the Vietnam War, a stance that stood in sharp contrast to the escalating military intervention of Richard Nixon (Wakaluk, 2025). Yet what drew him to British Columbia specifically was the newly established Simon Fraser University, which had been in operation for only five years at the time of his arrival. The university was built on an explicit commitment to free speech and political expression, exemplified by “Freedom Square,” an open space dedicated to rallies, protests, and demonstrations (Johnston, 2005). It also upheld the academic freedoms Alexander was seeking, as early research at the university —often described as radical— was embraced rather than restricted, with colleagues inviting one another to present, debate, and challenge ideas in open forums. In 1970, Alexander accepted an assistant professorship at Simon Fraser, noting that “it is possible to think in Canada the way it is not

possible to think in the United States” (Wakaluk, 2025). It was in this environment that Alexander built his career, teaching in the psychology department and working within the Simon Fraser psychology laboratories.

As the youngest member of the faculty at Simon Fraser University, holding only an assistant professorship, Alexander was assigned to teach a course few others wanted to teach: Social Issues (Cohen, 2019). In Vancouver, drug use was a longstanding social issue. The city’s entanglement with drugs can be traced back to the late nineteenth century, when opium was imported in large quantities during the construction of the Canadian Pacific Railway (Hazzan, 2023). By the mid-twentieth century, this history had developed into a persistent problem of opiate use, as British Columbia “had less than 10 percent of Canada's population, but 47 per cent of all convictions under the Opium and Narcotic Drug Act” (Hazzan, 2023, p. 88). The rising incidence of drug use across the province prompted the establishment of the Narcotic Addiction Foundation of British Columbia, which in 1959 pioneered one of the first methadone maintenance programs in Canada (Eibl et al., 2017). This concentration of drug use is often attributed to the city’s geography, as Vancouver was described as the “Terminal City” (Alexander, 2001; Hazzan, 2023), the final destination of both the railway and the Trans-Canada Highway. In the late 1960s, federal efforts to investigate what officials called the “ecology” of non-medical drug use in Canadian cities began. The Le Dain Commission, established to conduct such inquiries, released an initial report in 1970, describing Vancouver as a key destination for drug traffickers, resulting in the widespread availability of cannabis, LSD, amphetamines, and heroin (Marquis, 2013). The city, however, was not only characterized by a marginalized population of low-level dealers and users—whom the Commission described as “active proselytizers”—but also by Canada’s largest “hippie population”, composed of middle- and upper-class, often university-going young adults described by the Le Dain Commission as “pseudo-intellectuals” (Marquis, 2013). In this context, Alexander, despite noting at the time that he “had no intention of being in the field of addiction; I was in the field of experimental psychology” (Cohen, 2019), was required to teach about a phenomenon that was already deeply embedded in the social and institutional life of the city.

Alexander therefore taught what he knew: the dominant psychological understanding of addiction, grounded in behaviourist theories of reinforcement, reward, and dependence, in which drugs were understood to transform individuals into “drug-seeking machines” (Wakaluk, 2025). During one lecture, a student interrupted Alexander to ask, “Have you heard about the rats?” (Cohen, 2019)—a reference to the growing body of behavioural pharmacology research using rats to model addiction. Alexander later reflected that in the 1970s addiction researchers had “based a whole science on rats” (Cohen, 2019), a body of work that came to define the field. “Have you heard about the rats?” would become a phrase Alexander repeated throughout his career, later describing the student’s question as the origin of Rat Park—the day his life changed, and he turned toward experimental models of addiction involving the rat.

The “Rat Park” studies were a series of experiments conducted in the late 1970s and early 1980s in the basement laboratories of Simon Fraser University. Led by Alexander, then an associate professor in the Department of Psychology, the research was carried out by a small group of faculty and graduate collaborators. This included colleagues such as Barry Beyerstein, an associate professor of psychology at Simon Fraser during the time of the experiments, and Marilyn Bowman, the director of clinical psychology. Throughout the experiments, graduate researchers—Robert Coombs, Patricia Hadaway, and, in the final experiment, Mark Brunke—contributed to the project under Alexander’s supervision, with several of them completing MA or PhD theses based on the experiments (Alexander, 2010). The studies were conducted in quick succession between 1978 and 1980, with the first two published in *Psychopharmacology* and the final study in *Psychological Reports*. The first, “The Effect of Housing and Gender on Morphine Self-Administration in Rats” (1978), was followed by “The Effect of Housing and Gender on Preference for Morphine-Sucrose Solutions in Rats” (1979), and “Failure to Find an Effect of Catheterization on Oral Morphine Consumption in Rats” (1980). Together, these studies examined how different housing conditions shaped patterns of morphine consumption in rats, comparing isolated and socially housed environments across a range of experimental conditions. While the specific designs and results of the experiments pertinent to this work will be examined in later chapters, the series established

the central premise of Rat Park: that drug consumption varied systematically with the social and environmental conditions in which it occurred.

At the time of the experiments, the studies received attention from local news outlets, making headlines in *The Vancouver Sun* and *North Shore News* (The Vancouver Sun, 1978; North Shore News, 1979, as cited in McMillen, 2013). This visibility, however, did not translate into sustained institutional support. By the early 1980s, after the third study in the series, the research program came to an end after failing to secure further funding (Alexander, 2010). This lack of support occurred within a broader scientific and cultural context. In the late-twentieth-century, animal models were increasingly subject to scrutiny, as questions were raised about their validity, reliability, applicability to human life, and ethical justification (Pettit, 2017; Kirk, 2018; Kirk, 2019). At the same time, the growing animal rights movement—marked by publications such as *Animal Liberation* (1975) by Peter Singer and the formation of organizations such as People for the Ethical Treatment of Animals (Brown, 1981)—further unsettled the use of animals in experimental research. While these developments did not determine the fate of Rat Park, they formed part of the shifting intellectual and institutional landscape in which the project came to a close. With this, collaborators went their separate ways, leaving Rat Park and its local success behind. For Alexander, however, this was just the beginning. For him, Rat Park was not simply an experiment but evidence that unsettled dominant understandings of addiction, serving as the impetus for a broader critique of how drug use and addiction were governed across science, policy, and culture.

This thesis will examine the impetus, emergence, and afterlife of Rat Park. The choice of Rat Park as the object of analysis is motivated by a broader concern: the apparent failure of drug policy to curb the rising incidence of addiction in Canada. These conditions raise a set of related questions: what forms of drug policy have been possible across time and place, what political orientations underpin them, and to what extent have they succeeded on their own terms? During preliminary exploratory research, Alexander's Rat Park experiments repeatedly emerged as a salient point of reference in contemporary discussions of addiction and drug policy. Given the scale and complexity of these issues, this thesis does not attempt a comprehensive historical account of policy developments across the globe. Instead, it takes

Rat Park as a historically situated lens through which to examine how addiction has been conceptualized in North America from the 1960s to the early 2010s, and how these conceptualizations have shaped the possibilities and limits of drug policy. This thesis is situated within an already rich body of work examining the history and sociology of drug addiction and drug policy. Two key texts from critical drug scholars Richard DeGrandpre and Marina Valverde inform this analysis, as both question how modes of governance and regulation shape how drugs and drug users are understood in contemporary society.

Richard DeGrandpre's *The Cult of Pharmacology: How America Became the World's Most Troubled Drug Culture* (2006) offers a cultural and historical account of how dominant beliefs about drug effects shape the ways drugs are understood and governed. Central to this critique is what DeGrandpre terms "pharmacologicalism," the assumption that drug effects are determined solely by their chemical properties. To challenge this, DeGrandpre introduces what he calls the "myth of the demon drug", exposing how the meaning of drugs is shaped by historically contingent forces of culture and commerce. He illustrates this through comparisons between chemically similar substances such as methamphetamine ("meth") and prescription amphetamines like Adderall, asking how meth can be constructed as a dangerous "demon" drug while Adderall appears as an "angelic" miracle cure. His answer is that these drugs acquire different social meanings depending on the demographic of users, the social context of use, and the means of distribution. Meth is typically imagined as an illicit recreational drug used by "hardcore" or career "addicts", whereas Adderall is understood as a therapeutic pharmaceutical prescribed to children to improve focus in educational settings. DeGrandpre argues, however, that these distinctions are themselves socially produced by what he calls the "cult of pharmacology," an amalgamation of industries that profit from the differential regulation of drugs, including the tobacco and pharmaceutical industries as well as drug enforcement agencies. In this way, DeGrandpre shows that the positive or negative valence attached to drugs is not prior to regulation, but produced through it: how drugs are regulated shapes how they are understood, and, in turn, how their effects are experienced.

Marina Valverde's *Diseases of the Will: Alcohol and the Dilemmas of Freedom* (1998) offers a historical and sociological account of how alcohol use has been understood and governed over the past

century and a half. Central to this account is an enduring tension between frameworks of free will and determinism, in which alcoholism—and addiction more broadly—is alternately constructed as a moral weakness of character or as a disease acting upon the individual. Rather than unfolding as a linear shift from one framework to the other, Valverde shows how these frameworks coexist in tension across different historical junctures, producing competing modes of governance. For example, in the 1970s, self-help movements such as Alcoholics Anonymous emphasized the cultivation of self-discipline and the restoration of the will through communal and spiritual practices, while emerging alcohol treatment centres sought to intervene clinically and medically in the course of the disease. In this way, shifts between moral and disease models do not resolve the problem of alcoholism, but instead reconfigure both the sites and the mechanisms of its governance, redistributing authority across domains such as law, medicine, and social intervention. For Valverde, across these domains, the figure of the “alcoholic” remains defined by an inability to govern oneself, requiring ongoing oversight, treatment, or reform.

In conversation with these works, this thesis examines how the Rat Park studies have been taken up in policy and public discourse as a challenge to dominant understandings of addiction and drug policy. While DeGrandpre’s work on the moral politics of categorization served as an initial inspiration for this project, the thesis aligns more closely with Valverde in examining how addiction and the figure of the addict are historically constituted through shifting regimes of governance and intervention. Focusing on the study’s “afterlives” (Pettit and Vigor, 2015), this work will demonstrate how Rat Park has been mobilized in support of changes to drug education, policy priorities, and legislative frameworks. Building on Valverde’s account, it situates the contemporary figure of the addict as shaped by late twentieth-century War on Drugs discourse, in which drug users were frequently represented as ineducable, reckless, and criminal. While both Valverde and DeGrandpre demonstrate how the governance of substances and substance users tends to reproduce such figures, this thesis asks whether policy reforms inspired by Rat Park can meaningfully challenge these classifications. In this way, Rat Park is examined as a mechanism through which both the construction of drugs as “demons” and the figure of the addict as possessing a “diseased will” are called into question. If, as Valverde and DeGrandpre suggest, the figure of the addict

is constituted through practices of classification and regulation, the question becomes whether policy reform can meaningfully transform this figure, or whether such transformation simply reclassifies individuals within a different mode of governance.

To carry out this work, a genealogical approach was undertaken (Foucault, 1984) to identify key texts and situate them within their historical context. These sources are treated not simply as materials of analysis, but as sites through which the object of study is constituted. A variety of digital archives were consulted to reconstruct the history of Rat Park, which can be understood as an assemblage of bodies and concepts throughout time. The first archive consulted was Alexander's self-archival website where he houses academic publications alongside unpublished manuscripts, conference presentations, interviews and third-party representations of his work. Materials identified in this archive were then traced back to their original publication contexts where possible. Second, a comprehensive inventory of Alexander's publications spanning from 1964 to 2022 was compiled using databases such as ProQuest and Web of Science. This inventory included the three original “Rat Park” studies. Alexander’s body of work serves as the central analytical corpus of this thesis, anchoring the analysis throughout the project.

For Chapter 1, apart from Alexander's work, *The New York Times* Archive was consulted to reconstruct the cultural history of the rat. Articles containing the term “rat” and “rodent” published between 1850 to 1910 were compiled and analyzed to establish the cultural assumptions about the rat that underpinned Alexander's study. For Chapter 2, to establish the afterlife of the Rat Park studies, multi-page Google searches using the terms “Bruce Alexander” and “Rat Park” were conducted. These searches identified the sites and discursive communities that have taken up the study since its publication. Taken together, this assemblage of digital archives traces the Rat Park from its historical conditions of emergence to its subsequent uptake, producing a genealogical account of the study.

Importantly, this work was not co-constructed with its primary historical actor Bruce Alexander. Given his extensive self-archiving practices and established public narrative, his account of Rat Park is already highly curated and stabilized in the public sphere. Accordingly, although direct consultation was possible, it was not pursued in order to maintain analytic distance from Alexander's own

interpretations. Limiting analysis to his published and archival materials thus enables a critical reading of his work without reproducing that narrative, allowing alternative interpretations to emerge that may not align with his own.

This thesis proceeds in two chapters. The first chapter unfolds in three stages. It begins from the premise that the figure of the rat is constituted through an assemblage of human–rat relations across time, producing an animal with multiple, divergent histories. Two of the rat’s salient histories are then examined. First, it examines the rat’s cultural history as diseased, dirty, urban vermin through representations of rats in early twentieth-century newspaper accounts and public health discourse. Second, it traces the rat’s scientific life in the twentieth-century laboratory, showing how it was transformed into an ideal model of learning through processes of standardization, experimentation, and behavioural control. Third, these cultural and scientific histories are brought together to reveal the rat as a plastic organism, showing how this plasticity is mobilized in Alexander’s Rat Park studies to demonstrate that addiction is not fixed but environmentally constituted.

The second chapter hinges on a tension between the success of Rat Park in North American policy circles and Alexander’s dissatisfaction. It unfolds in three stages. First, it examines how Rat Park entered public consciousness in the early 2000s, gaining visibility beyond the laboratory and becoming widely recognized in popular discourse. One of its most salient sites of uptake was within policy circles, mobilized as a politically operative model. Second, it reconstructs Alexander’s evolving political interpretation of the study over the four decades following its publication, tracing how he mobilized Rat Park to critique dominant understandings of addiction and to articulate an alternative vision of drug policy and social organization. Third, it examines a range of uptakes of Rat Park within different movements in the 2010s, showing how the study developed multiple “afterlives” as it was mobilized to support political projects ranging from prevention and harm reduction to decriminalization. Finally, the chapter brings these trajectories together to examine the tension between Alexander’s interpretation of Rat Park and its political afterlives, asking why he remained dissatisfied with both its mobilization and with contemporary shifts in addiction policy, treatment, and science.

Chapter One:

From Urban Vermin to Model Learner: How the Rat Entered Alexander's Laboratory

This chapter explores the Rat Park study as a moment of both continuity and rupture in the cultural and scientific histories that made rats legible as models of addiction. In 1978, Alexander and his colleagues created an enriched rat utopia later known as Rat Park to understand the “nature” of addiction under altered environmental conditions (Alexander et al., 1978; Alexander, 2010). This is historically significant for a couple of reasons. First, the study built on the scientific tradition of rats as human surrogates and especially as models for learning. Second, this tradition was further culturally loaded by the rats' cultural history as *urban vermin*, a disease carrying, physically destructive and especially urban pest. The logic of Alexander's Rat Park studies hinges on this cultural memory but importantly preserves many of these core assumptions. By building an enriched model city for his rats, he showed they could transcend their lowly culturally inherited status as vermin and become “civilized.” The implied equivalences between the rat and the addict embedded in Alexander's work would have tremendous implications for how researchers, policymakers and community organizations would cast the “subhumanity” of the human “addict.” To foreground these cultural assumptions, this chapter first traces the rodent's history outside the laboratory before examining how that history is trafficked within scientific tradition.

Histories of the rat consistently negotiate the tension between the animal's cultural life as an urban pest and its scientific life as an ideal model of learning. Nineteenth-century natural histories such as Rodwell's (1858) cast the rat as a pestilential and destructive form of life, a framing that persists in later journalistic and ethnographic accounts of urban rats, including Sullivan's *Rats* (2005), which documents how rats survive on the effluvia of urban life. Writing within the history and philosophy of biology, Clause (1993) provides an account of the rat's transfer from city to laboratory, asking why this despised and unwanted animal nonetheless became central to biomedical research. She advances a markedly

pragmatic and utilitarian interpretation, arguing that the rat's elevation from pest to experimental object reflected the need to find scientific use for an abundant and already-available animal, rather than any intrinsic experimental suitability. Shapiro (1996/2002), working from a historically grounded social constructionist perspective, examines how the rat was made into a laboratory animal, showing how breeding practices, laboratory routines, and scientific language reconstructed the rat as a de-individuated and standardized model organism. Wertz's (1994) phenomenological account of the rat reframes this transformation at the level of meaning, arguing that the laboratory rat functions as a figure of anti-life onto which modern science displaces decay, death, and moral ambiguity. Finally, Beumer (2014) rejects singular histories of the rat, advancing a practice-oriented approach informed by Haraway and Latour that foregrounds situated practices through which multiple human–rat relations are enacted, such as the fancy rat, the sewer rat, and the laboratory rat. It is within this layered history of pestilence, laboratory incorporation, scientific reconstruction, moral displacement, and spatial separation that the Rat Park studies must be situated.

The Rat Park studies are informed by both the rats' cultural life as an urban pest and as an ideal model of learning. The rat emerges as a knowable cultural and scientific subject through an assemblage of human-rat convergences throughout historical time (Wertz, 1994). Feminist science studies scholar Donna Haraway (1944-) describes this convergence of human and non-human life as a “transspecies encounter” producing “co-shaped histories” (2008, p. 46). Invoking history in its plural form suggests these encounters were neither uniform or stable in meaning or value. In this chapter, two knowable archetypes of the rat, each with its own set of assumptions will be illustrated. This first section, titled “Outside the Laboratory”, will detail assumptions about the rat that culminate in the vision of rats as pests to be exterminated. These assumptions grew out of human and rat encounters in the late 1800s and early 1900s that were informed by the discovery of the rats' role in transmission of disease. The second section, “Inside the Laboratory”, will delineate assumptions about the rat that culminate with the vision of the rat as an ideal model of learning. These assumptions grow out of human and rat encounters from the early to

mid-twentieth century that were informed by the rats' role in scientific discoveries about processes of learning.

Haraway would call both the “Outside the Laboratory” and “Inside the Laboratory” histories of the rat *inherited histories* (p. 38) to describe how meaning is assigned by human observers and received by animal subjects. This observer–observed dynamic mirrors the broader human–animal divide. The rat or the observed is thus only relationally recognizable, emerging as an extension or artifact of human subjectivity that is constantly re-articulated and re-worlded through human-authored histories. The rat's history is discursively produced, the outcome of human interpretations of trans-species encounters. Guided by Haraway's concept of “simian orientalism” (Haraway, 1989, pp. 10-11), stories about animals are understood as being almost analogously stories about race, gender, and class. The “race” of the rat is not itself the text. However, the crowded and decaying inner-city spaces with which rats were associated, along with the forms of social disorder problematized in twentieth-century rat experimentation, were understood as racialized social problems. In this way, the histories examined in this chapter are understood as entangled with hierarchical distinctions between populations and spaces associated with order or pathology, cleanliness or contamination, and civilization or degeneration (Thompson, 1999). As such, the animal-human divide positions human narrators as the sole architects of the rodent identity. Human representations of the rat range from widely documented plague outbreaks and extermination projects to everyday utterances that give texture and nuance to the rat's symbolic life. To illustrate the cultural assumptions of the rat, narrativizations of human-rat encounters documented in the *New York Times* from 1900-1919 will be presented in tandem with historical evidence.

Outside the Laboratory

In this section, the cultural assumptions that the rat is diseased, dirty and urban dwelling are explored. To reconstruct the rat's association with disease, dirt, and urbanity, this section, Outside the Laboratory, turns to newspaper coverage from the early twentieth century, particularly reporting from the *New York Times*. In this work, the *Times* is approached not simply as a press outlet, but as a platform through which expert knowledge, municipal policy discourse, and public anxieties about disease and

sanitation were mediated and circulated into public consciousness (Schudson, 1978). Historians of psychology have adopted similar approaches, using the *New York Times* as a record of scientific and urban concerns that offers insight into the cultural and institutional contexts of psychological knowledge (Rutherford, 2000). Read in this way, newspaper coverage did not merely report on disease but actively made the rat visible as a legible urban problem—rendering it at once a carrier of contagion, a sign of unsanitary living conditions, and an unwanted yet persistent inhabitant of city life. It is this mediated visibility that anchors the cultural figure of the diseased rat examined in the following section.

Newspaper reports of rats in the early twentieth century can be read as records of recurring human–rat encounters through which disease and urbanity were co-produced. Drawing on Haraway’s account of interspecies relations, such encounters make visible how animals acquire historical meaning (Haraway, 2008). In Haraway’s analysis of human–dog relations, interspecies cooperation—emerging through practices such as herding and hunting—ultimately produced forms of accommodation within the built environment. The story of the rat, however, unfolds differently. Although rats are synanthropic animals (Guetté et al., 2017) whose survival depends on proximity to human settlement, their co-existence with humans in cities was marked not by reciprocity but by competition, intensified through disease discourse. This competitive relation became embedded in urban public health practice, for example in Baltimore’s early 1940s Rodent Control Project, which framed rat infestation as a problem of housing, sanitation, and infrastructure requiring intervention (Baltimore City Health Department, 1943). The mass circulation of the pamphlet *You Can Help Fight the Rat* mobilized residents to modify domestic and urban space, while housing ordinances and design standards increasingly emphasized rat-proofing through concrete flooring, copper piping, and wire mesh barriers at points of entry (Adams & Ramsden, 2024). In this way, rats emerged as persistent competitors within human-built environments, prompting architectural strategies of exclusion that reshaped the city. Unlike dogs—whose presence was accommodated through parks, licensing regimes, and domestic inclusion—rats were met with an urban architecture designed explicitly to keep them out.

Diseased

The first cultural assumption about the rat that underwrites Alexander's study is that the rat is diseased. Rats are deeply intertwined with the epidemiological history of humanity. The vision of the diseased rat grows out of historical events such as the bubonic plague. The disease caused three major pandemics and resulted in millions of deaths worldwide (Zietz and Dunkleberg, 2004). The first occurred in the 6th century, the second in the 14th century, and the third in the late 19th to early 20th century. During the second pandemic, the plague came to be known as the “Black Death” as the outbreak killed approximately 20 million Europeans—roughly one-third of the population (Wertz, 1994). Yet it was not until well into the third pandemic that the plague-causing bacterium *Yersinia Pestis* was identified in 1894, and the rat's involvement in the spread of plague formally recognized in 1898 (Simond et al., 1998, p. 101). Following French physician Paul-Louis Simond's (1858-1947) discovery “that the rat flea was the vector for the disease” (Simond et al., 1998, p. 101), the mechanism of transmission was clarified: infected fleas living on rats passed the bacterium to humans. Even so, the centuries of human suffering, fear, and death came to rest symbolically on the rat. Although the rat was neither the bacterium or origin, it was configured as the mobile vessel of contagion—the animal through which the disease seemed to grow legs and walk the streets.

The discovery of the role of the rat in disease transmission marked the beginning of a cultural equivalence between rodents and disease that solidified throughout the 20th century. At the turn of the twentieth century, rapidly expanding coastal cities in the United States—defined by dense ports and global trade routes—became ideal sites for rodent-borne disease transmission (Lynteris, 2022). As cities across the United States took shape, the third wave of the pandemic spread rapidly across oceanic highways (Zietz and Dunkleberg, 2004). The fear of being “decimated as was medieval Europe” (*New York Times*, 1907) was particularly salient for burgeoning “half-built” cities such as San Francisco. In 1907, San Francisco faced an outbreak of the plague after a sailor who arrived by ferry fell ill. The effort to stamp out the disease faltered after a string of misdiagnosis and improper quarantine procedures resulted in cases cropping up across the city.

When reports of this outbreak circulated in the New York Times, the burden of disease rested not on urban infrastructure, but on the rat. An article titled “Stamp Out Plague by Killing Rats: San Francisco Exterminating These Pests to Shake off Dread Disease” laments the struggle of the city in its infancy where the “plague was walking the streets” (*New York Times*, 1907). Here disease is no longer invisible and microscopic but ambulatory, imagined as moving through the city carried in the fur coat of the rat. Dr. Robert Blue, a marine physician, was appointed by the federal government to manage the outbreak. Rather than reforming diagnostic procedures or quarantine protocols, Blue’s response reduced disease management to a single imperative: rat extermination. In an interview he summarized disease management efforts in this statement; “No rats, no plague; that's the whole story”, “get rid of the rats, that is all that is necessary" " (*New York Times*, 1907). In this formulation, disease control is tautologically akin to rat extermination. The rat, though only one link in the chain of infection– from bacterium to flea, to rat, to human– was thus labeled as disease incarnate.

The conflation between disease and disease carrier would reappear in twentieth-century epidemic discourse. During debates surrounding HIV/AIDS and drug use in the 1990s, people who used drugs were increasingly framed not simply as individuals at risk of infection but as sources of contagion themselves. Writing in this context, pioneering harm-reduction advocate and psychologist G. Alan Marlatt (1941-2011) noted that dominant drug policies often treated people who use drugs as the problem rather than as individuals in need of care (Marlatt, 1996). In this formulation, much as the rat had been cast as plague incarnate, drug users appeared not as individuals at risk of disease but as embodiments of the disease they were presumed to carry. The rat's lowly status grew out of cultural discourse in the early 1900s as experts and authorities positioned the rat as both the cause of urban suffering and the object of eradication, cementing its status as diseased vermin in the cultural imagination. Anchored in this historical memory of the plague, Alexander's study would provide an alternate vision of the rat, complicating time-honored narratives of diseased vermin *plaguing* humanity.

Dirty

The second cultural assumption about rats that underwrites Alexander's work is that rats are inherently dirty. In the 20th century dirt can be understood as a material administrative issue that structured how populations were classified and governed. National Health Reform campaigns across the United States in the early 20th century looked to rat eradication practices to not only reduce the spread of disease, but improve public sanitation and hygiene (Hoffman, 2003). Concerns about the accumulation of dirt in city centers intensified alongside rapid population growth; in New York City the population rose from 3.4 million to almost 6 million from 1900 to 1920 (US Census Bureau 1900-1930). Early Health Department-mandated sanitation programs used the absence or presence of rats to classify human spaces as sanitary or unsanitary; clean or dirty (Ramsden and Adams, 2024). In this new terrain, rats symbolized not only disease, but ordinary uncleanness and sickness.

In December of 1919, the article “Lessons of a City Block” appeared in the New York Times reporting on an investigation into New York City housing conditions. The Phillips houses often referred to as west end “slums” were a segregated neighborhood built in 1911 explicitly designated “for coloured people” (*New York Times*, 1919). Upon inspection, the neighbourhood was now home to 165 white families and 885 families classified as other races or ethnicities. The Woman's Municipal League of the City of New York surveyed the block, describing the buildings as “old, dark, dirty and not fit for human habitation”. A common factor united each inhumane structure, “a cellar full of rats” which rendered each dwelling “*unfit for human occupancy*” (*italics added*).

While the rats were identified as the problem, public health legislation allowed authorities to selectively target marginalized communities and individuals through the rat. Crucially, the rat figured as an invasive presence—both vermin and metaphor—marking certain populations as contaminating forces encroaching upon white, middle-class urban space. Appalled by the filth and excrement left behind by the rats, the city officials decreed that “We must rid our city of slums through ever-increasing restrictive legislative measures” in the name of “moral and physical well-being”(*New York Times*, 1919). For “slum”

dwellers across the United States, an unfit dwelling authorized forms of state intervention that operated both to remove rats and to remove residents. (Adams and Ramsden, 2024).

In the early 20th century dirt and filth were understood as not only a physical attribute but a moralized internal state. Not only could one's house be filthy, but one's mind and morality. The moral imperatives surrounding health and cleanliness in the 20th century arose from what historians of medicine refer to as "the modern period of dermatology" that began in the mid-19th century (Cox, et al., 2018). During this period, sickness, both moral and physical, was thought to live on the skin in the form of dirt or grime. This connection between uncleanliness and pathology led to institutions such as prisons and asylums subjecting patients to forced supervised bathing to wash away impurities (Cox et al., 2018). 20th century health reforms thus amplified this ideology, mobilizing the rat to cast certain populations as analogous to "dirty" vermin. With this, the rat came to connote not only the dirt of the city streets and underground cellars, but the filth residing in the minds and souls of those who lived in squalor.

Urban

The third cultural assumption about rats that makes Alexander's Rat Park study thinkable is that rats are urban dwelling creatures who cohabitate with humans. The rat is a synanthropic species (Guetté et al., 2017) that lives proximate to or within human settlements and benefits from this closeness. Not only is the rat synanthropic, but it is resistant to change, a neophobic species "with a preference for feeding on or visiting familiar foods, objects, or places" (Greenberg, 2003, p. 180). Robert Sullivan, an author from New York, writes that the rat's very existence consists of "surviving on the effluvia of human society; thriving or suffering in the very cities where we do the same" (2005, p.2). The urban system is not a transient home but an entrenched ecological niche for the rat, a reliable industrial cornucopia of food waste, sewer networks, and dense housing that not only allows but encourages rats to stay.

In this sense, welcomed or unwelcomed, wanted or unwanted, the rat is a New Yorker, a San Franciscan, a shadowy citizen of the world's cities. A New York Times article published in 1900 grapples with the surplus of rodents in the city. The article "The City's Rat Population" jests that New York's rat population is so large a census ought to be performed. The city's fleet of Rat Catchers estimate that

"several million" rodents live in the city, and they forecast a steady increase "by the ordinary means of multiplication and by whole regiments from the ships that come into port" (*New York Times*, 1900). The rat's means of multiplication is anything but ordinary. With a single pair of rats able to produce 15,000 offspring in a year and a single rat nest turning into a colony of 50 within 6 months, the rat's reproductive capacity translated ecological opportunity into visible population pressure (Sullivan, 2005). In 1900, New York City's human population was approximately 3.4 million (US Census), a number that struggled to rival the estimated rat population. Living off urban effluvia—garbage, sewer waste, and food scraps—the expansion of rat populations mirrored rising human density and urban development at the turn of the century. In this framing, the city's population is co-produced, a shared habitat which breeds inter-species competition for territory and resources.

The article continues, noting that "rats seem to like New York [...] they are so well fed that they seem to spread the news to others". Despite the droll tone of the article, the rats' synanthropic tendency to leech food, warmth, and shelter from human settlement was seen as deeply problematic: "The damage done by these rats is sometimes enormous. They simply gnaw valuable goods for the fun or devilry of it. [...] grains, provisions, country produce and similar foods are naturally their favourites" (*New York Times*, 1900). As disease, dirt, and overcrowding converged in urban life, the rat was increasingly imagined not as a symptom of these conditions, but as their living cause. The article itself registers this symbolic shift, noting how problems of rodent population density slip quickly into fears about resource allocation and material security. The article ended in a defeatist tone, stating that the city must "resort to extreme measures to protect their goods", framed as the only viable solution to the rodent problem, "kill them off, one by one".

Inside the Laboratory

Despite this history, rats took on a new cultural life inside 20th century laboratories where they came to represent an ideal model of learning. This vision grows out of three assumptions; the rat grows, learns, and changes. Important to Alexander's work is the paradoxical nature of this change the rat undergoes. While laboratory rats appear to undergo a metamorphosis from wild to domestic, from vermin

to cherished vehicle of learning, the rat's fate remains unchanged. Both inside and outside the laboratory, the rat is subject to systems of governance and management that seek to regulate it, reshaping its behaviour to align with human needs and expectations. Later mobilizations of Rat Park would echo this paradox: the addict appears to be transformed but is more accurately reclassified and subjected to new modes of governance. In this section, I will first provide examples from the history of psychology to illustrate how the vision of the rat as a growing, learning and changing organism came to be.

Grow

The first assumption about the rat that emerged from its use in 20th century laboratories is that the rat grows and develops. Diverging from its cultural life as an uncontrollable urban pest, the rat in the laboratory was genetically designed to be a standardized, measurable, laboratory animal vulnerable to epistemic and scientific control. In 1903, Herbert Donaldson (1857-1938) began an albino rat breeding program at the Wistar institute. Through this program he aimed to standardize the species used in experimental research to improve reliability and reproducibility of experimental findings (Clause 1994). Until this point, a variety of species often with noncomparable genetic makeup or anatomical structures were used in experimental research: frogs, guineapigs, cats, dogs, and chicks, to name a few (Ankeny and Lioneli, 2011). However, Donaldson believed the rat was uniquely suited for empirical research due to its altricial pattern of growth, four-day estrous cycle, and rate of neurological development that he would later neatly map onto that of humans.

In Donaldson's 1938 biographical memoir he is quoted articulating how the rat to human equivalence is an emerging scientific method, the method's functionality being dependent on the rodent's growth patterns: "I selected the albino rat as the animal with which to work. It was found that the nervous system of the rat grows in the same manner as that of man—only some thirty times as fast. Further, the rat of three years may be regarded as equivalent in age to a man of ninety years, and this equivalence holds through all portions of the span of life, from birth to maturity. By the use of the equivalent ages observations on the nervous system of the rat can be transferred to man and tested" (Conklin, 1938). Here

Donaldson not only authorizes rat to human equivalences but provides the methodological tools to do such.

By 1915, Wistar's lineage of albino rats had become the preeminent model organism used in scientific research as Donaldson's "progeny populated laboratory colonies across the country" (Pettit, 2012, p. 2). This marked a diversion from the rat's cultural life as a diseased, dirty, and urban vermin as Herbert Donaldson heralded the age of the laboratory rat. No longer "a useless scourge to humankind" (Clause, 1993, p. 330), the albino rats of Wistar lineage were "synonymous with quality and dependability" carrying with them an air of epistemic legitimacy (Clause, 1993, p. 331). Leonelli and Ankeny's anthropological history of the model organism suggests that standardization led to the formation of "big science"; the "development of large, centralized infrastructures, a shared ethos, and a specific long-term vision about the "right way" to do research" (2013, p. 209). The Wistar breeding program was the machine of big science; breeding, branding, packaging, and distributing not only the rat, but the new scientific ethos of equivalence (Castle, 1947).

In 1924, Donaldson published, *The Rat: Reference tables and data for the albino rat and the Norway rat*. This book represented the culmination of decades of research and would serve as a guide for others looking to use rodents to model human problems. Early experimental psychologists would be among the first to take up Donaldson's work, the rat becoming not only an apt neurological model but an ideal model of associative learning processes. The contrast between the rats' cultural life outside the laboratory and within the laboratory would inform Alexander's work, as he too would look to demonstrate how cultural assumptions are subject to change, specifically how environment could reshape assumed biological destiny.

Learn

The second assumption about the rat to emerge from the laboratory in the 20th century was that the rat was capable of learning. This assumption challenged late 19th century neuroanatomical theories such as those advanced by German neurologist and neuroanatomist Paul Emil Flechsig (1847-1929), who argued that rats lacked the cortical structures in the brain required for learning (Thorndike, 1898).

Because of this, rats were widely regarded as incapable of learning new behaviours beyond a fixed repertoire associated with scavenging, disease transmission, and disruption of human environments. Flechsig's neurodevelopmental ranking of species based on cognitive capacity trafficked an implicit moral logic, in which the absence of higher association cortex marked not only biological immaturity but also diminished capacity for discipline, improvement, and social regulation.

This view was empirically challenged by Edward L. Thorndike (1874-1949), whose 1898 dissertation *Animal Intelligence: An Experimental Study of the Associative Processes in Animals* marked one of the first systematic experimental investigations of animal learning. Thorndike demonstrated not only that animals could learn, but that learning could be studied through controlled experimentation, careful observation, and quantitative measurement (Thorndike, 1898; Chance, 1999). Central to this work was the puzzle box, a small wooden enclosure that could only be opened or *escaped from* after the animal performed a specific action. By timing escape latencies across repeated trials, Thorndike rendered learning visible, redefining it as a gradual, measurable process rather than a speculative mental capacity. By redefining learning and making experimentally documenting learning possible, Thorndike planted the seeds for studies on rodent learning that would redraw the boundary of who was considered educable.

Thorndike's puzzle box methodology was adopted by other researchers studying albino rats, including Linus W. Kline (1899) and Willard S. Small (1900, 1901). Although Thorndike himself primarily used young cats, the albino rat soon emerged as the preferred experimental subject. Rats were inexpensive, compact, easy to house, and well suited to repeated trials, making them ideal for large-scale experimental research (Miles, 1930). By the early twentieth century, the rat had become the dominant organism for investigating learning processes (Beach, 1950).

John B. Watson (1878-1958) adopted the puzzle box in his 1903 dissertation, explicitly seeking to "give a systematic account of the gradual unfolding of the associative processes in the rat" (Watson, 1903, p. 5). In one experiment, Watson deprived rats of food, placed them in a puzzle box, and measured the time required for the animal to perform "the act necessary to obtain food" (Watson, 1903, p. 8). Watson

concluded that rats as young as 10 to 13 days old could form associations, which he termed “habits,” and that rats reached full neurological or “psychic” maturity at approximately 23 days of age.

Drawing on Donaldson’s work on human–animal equivalence, Watson extended these findings to human development. In the final remarks of his dissertation, he argued that, like rats, the intelligence of human infants was unlikely to “play a role” until the second month of postnatal life (Watson, 1903, p. 121; Todd & Morris, 1986, p. 76). For Watson, these results illuminated the age at which individuals became “teachable” (Watson, 1903, p. 122), a claim that resonated with contemporaneous efforts to scientifically determine the developmental readiness of children in support of emerging compulsory education frameworks and the expansion of public schooling in twentieth century United States (Franklin et al., 1991).

By mid-century, the rat’s centrality to the science of learning was unmistakable. Frank A. Beach, the president of the American Psychological Association’s Division of Experimental Psychology, reported in 1949 that since 1900 approximately 70% of experimental psychology publications involved studies of the albino rat, and that nearly 80% of these focused on learning (Beach, 1950). In this cultural and scientific terrain, rat studies not only shaped emerging educational practices, but also provided empirical counterarguments to eugenic theories of intelligence which claimed that learning capacity was biologically fixed and unevenly distributed, trending towards the upper class (Thompson, 2010).

Alexander’s later use of rats can thus be understood as a return to this earlier insight, as Alexander would look to prove that the urban addict, like the urban vermin rat, was able to learn different behavioural patterns to escape a predetermined destiny. In this framework, the capacity to learn is a universal feature of behaviour, shaped by the environment rather than intrinsic deficits. Alexander’s work hinges on the early twentieth-century reconfiguration of the rat as teachable, as he would redeploy it decades later to contest new forms of biological determinism surrounding addiction.

Become Plastic

The third laboratory assumption was that the rat was malleable — capable of not only changing its bodily composition and learned behaviour but changing its ontological and moral status. The task-

learning celebrated in early experimental work was only the visible surface of a deeper transformation in the rat's position within cultural hierarchies: a shift from wild, urban, diseased, and destructive to standardized, disciplined, and governable. This was less domestication than what Lockard (1968) calls "laboratization", as this cultural shift is produced by the demands thrust upon the rat in 20th century laboratories. By the time rats emerged as governable experimental subjects, their genetic and temperamental reshaping had already been accomplished through Donaldson's breeding program at the Wistar Institute. At the Wistar Institute, so-called "wild" rats were delivered by catchers who trapped them in city streets and back alleyways (Castle, 1947). There, artificial, or "human selection" (Wertz, 1994, p. 183) ensured that only the most tame, docile, and submissive animals were bred, producing homozygous colonies void of genetic variation. This reduction of variation made behaviour more predictable and therefore more governable.

The rats were standardized not only in weight and size, but in disposition and temperament. This ontological shift rendered the laboratory rat almost unrecognizable from their wild counterparts. Working alongside Donaldson, zoologist Helen Dean King documented behavioural differences between the albino laboratory rat and its wild ancestor (1919). Summarizing this work in 1929, Donaldson wrote: "The wild Norway are more excitable and much more savage. They gnaw their cages." (as cited in Castle, 1947, p. 111). Other researchers echoed this, describing wild rats as unmanageable — biting handlers and attempting escape (Olds & Olds, 1979). The distinction between wild and laboratory rats therefore functioned less as a biological difference than as a boundary between governable and ungovernable forms of life.

Once the rat had been standardized as a governable scientific object, psychologists would reposition behaviour as fully programmable. After working with the albino rat for over a decade, John B Watson articulated this position in what would come to be known as the *Behaviourist Manifesto*. With ample evidence of the rats' teachability and propensity to learn, in 1913 Watson proclaimed behaviourism could both predict and control behaviour. For Watson, behaviourism's promise was not species specific; he saw "no dividing line between man and brute" (1913, p. 158). If the rat could be shaped to suppress its

tendencies to flee, bite, and destroy, Watson reasoned, then human conduct should be equally malleable. He made this explicit in 1930: “Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I’ll guarantee to take any one at random and train him to become any type of specialist I might select— doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors” (Watson, 1930, p. 115). Watson’s universal promise masked a more targeted concern; those whose behaviour appeared unruly or pathological. Like the once wild rat made orderly in the lab, the deviant human subject became the primary object of behavioural correction. Despite Watson’s positioning of behaviourism as “a purely objective, experimental branch of natural science” (1913, p. 158), a moral imperative lingered. As the 20th century bore on, it became clear Behaviourism was not a *natural* science as Watson claimed, but a dogma that *naturalized* technologies of behavioural control and their focused deployment on populations marked as unmanageable.

If Watson made behavioural change thinkable, then B. F. Skinner’s (1904-1990) work made it architecturally exacting. For Skinner, behavioural change hinged on the meticulous arrangement of environmental conditions. Behaviour, he argued, was shaped and maintained by mediated consequences (Skinner 1938; Skinner 1953), consequences that were built into the artifice of the experimental environment. If the laboratory was the site of behavioural engineering, the Skinner Box was its central instrument of the mid 1900s. The design was deceptively simple: a compact enclosure proportioned to house a single adult albino rat ($18 \times 25 \times 18$ cm, or 0.045m^3 , fitted to a 23–28 cm rat body), and concentrate all experimental contingencies in a manipulable space. In "*The Behavior of Organisms: an Experimental Analysis*" (1938), Skinner described the mechanisms of control built into the box. It ensured “maximum isolation,” eliminated “incidental stimuli,” and maintained the rat in an “inactive state”. The chamber was “sound-proof, dark, [and] smooth-walled,” ventilated only through a “singular tube” (Skinner, 1938, p. 70). Spatially and experientially, it was the opposite of the unbounded cityscape: the

roaming, scavenging, opportunistic behaviours of urban vermin were not merely curtailed—they were impossible within this enclosed architecture.

The skinner box enforced behavioural control along three axes. First, it isolated the rat socially, severing contact with other animals and restricting interaction to the researcher tending the cage. Second, it constrained behavioural possibilities, stripping the environment of objects, obstacles, or activities outside those required by the experimenter (every lever press or nose poke was prefigured). And third, it limited sensory and motor stimulation, confining movement and reducing extraneous stimuli so that every response occurred within the controlled environment and under predictable consequences. Common consequences included food deprivation or electric shocks delivered through the cage's metal floor, designed to reinforce desired behaviours and suppress undesired ones (Skinner, 1938). In this way, the box made the rat's behaviour a product of the experimental environment, leaving no room for sociality, alternative action, or agency. Most importantly for Alexander, these three axes of control implied that behavioural change required strict behavioural control—an implication his later work would later challenge.

Scholars interested in the naturalization of animal exploitation have drawn parallels between Skinner's experimental chamber and carceral human spaces such as jail cells (Alexander, 2010; Calhoun 1973), the implicit criticism of behaviourism being that behavioural control did not just punish incorrect action, but the intervention in and of itself was a punishment for those behaving in unfavourable ways. Tellingly, some of the first applications of operant behaviour on human populations targeted institutionalized individuals. In Alexandra Rutherford's book *Beyond the Box*, she describes Skinner's students' use of operant conditioning on institutionalized populations, noting that: "They had access to these relatively captive populations [...] partly because these were individuals who were deemed beyond help and powerless to make their own decisions about whether or not to participate" (2009, p. 48). Summarized bluntly, Rutherford stated "these patient populations were, so to speak, up for grabs" (p. 48). The populations she refers to that became the object of operant behaviourists' study included autistic children, psychotic patients, and "addicts". While Rutherford emphasizes their vulnerability and lack of

agency, these populations were also framed as disruptive, unmanageable, or socially burdensome — their behaviour understood less as suffering than as disorder requiring correction. Like the rat, populations framed as burdensome, disorderly, or socially disruptive became ideal experimental material, a perfect challenge for behaviourists looking to prove they could manage, reform, and render governable societies outcasts.

The work of Skinner's students further demonstrates the similarities between the rat and those constructed as un-reformable, unchangeable, or chronic. In the early 1960s after working in Skinner's Harvard laboratory, Charles B. Ferster (1922-1981) began his work with autistic children. His goal was to "bring the behaviour of these children under the close control of the artificial environment" (Ferster and DeMyer, 1962, p. 97), as he had done with animals in the laboratory. To conduct his work, Ferster built a human Skinner's box—a small room with a two-way mirror for observation—and found that tantrums and other disruptive behaviours could be mitigated, managed, and mostly eradicated. In one of Fester's more difficult cases, a child was locked in the experimental chamber almost daily for over a year until the tantrums had all but disappeared (Rutherford, 2009). Comparing the behaviour of animals and humans under similar environmental conditions, Fester noted "the patterns of the child's behaviour was like that normally occurring under similar reinforcement conditions in other species" (Ferster and DeMyer, 1962, p. 94). In this sense, while behaviourism sought to solve human problems by engineering behavioural change, the true result was a branch of psychology that metaphorized humans, reducing them to rats in a cage.

If the disciplined, regimented, confined laboratory environment could extinguish the rat's behavioural inclination to scavenge, scurry, and disrupt human life, maybe human institutions could do the same. Some scholars have likened the laboratory to institutions like schools, prisons, factories, and military bases; each an environment designed to regiment behaviour (Hudson, 2011). Skinner had prophetically dreamt up a society based solely on the principles of behaviourism. Detailed in his Utopian novel *Walden Two* (1948), he described such a society stating that he believed it could "come closer to satisfying human needs" (Skinner, 1979 p. 292), claiming it was a blueprint for "a social environment in

which we shall live productive and creative lives” (1976 p. xvi). For Skinner, a better society, a utopia, meant a world in which behavioural deficits were quieted, and all acted in a civilized manner. Just as a utopic vision of the urban landscape may be one free of rat, the utopic society was one free of social disruptions and pathologized behavioural abnormalities.

The assumptions about the rat illustrated in this section culminates in the vision of the rat as an ideal model of learning. Returning to Haraway’s notion of the value and meaning of transspecies encounters, it was clear that unlike the encounters outside the laboratory, within the laboratory the human-rat encounters had undeniable value. The late nineteenth century and early twentieth century was marked by a therapeutic nihilism as institutionalized populations seemed incapable of being reformed and were destined to live out their lives in captivity (Thompson, 2010). The rat’s propensity to grow, learn and change, as demonstrated in 20th century laboratories, challenged this notion that pathologically disruptive and uncivilized populations are beyond reform. In the mid-1950s, following Skinners rise to prominence and the uptake of his principles of operant conditioning and environmental control, the conventional wisdom was that behavioural change required confined, isolated, and under-stimulating environments. While Alexander was in favour of environmental intervention, he disagreed with the methods and technologies of the time. Like others, he would question if behavioural change could be considered a form of rehabilitation or therapy if the conditions were coercive and oppressive. Like the diseased, dirty, and city scavenging rat, Alexander believed that populations considered to be burdensome and disruptive could undergo a dispositional, behavioural change that was agentic, not forced.

Intersecting Experimental Paradigms

Beyond the cultural and scientific symbolism of the rat, Alexander’s studies can be understood as a response to two more proximate experimental paradigms that mobilized the rat to model the development of human pathology. Following historian of science Hans-Jörg Rheinberger (1946-), such configurations can be understood as “experimental systems”—historically specific arrangements of organisms, instruments, and practices through which scientific knowledge is produced (Rheinberger, 1997). Rather than treating these traditions as a sequence of competing theories, this perspective directs

attention to the experimental arrangements through which different forms of pathology became visible. Here I refer to these configurations as experimental *paradigms*. In the 1950s and 1960s, pathology was often understood as arising either from the organism's physiology or from environmental structure. These paradigms positioned the laboratory rat in two distinct experimental arrangements. In one arrangement, the animal was isolated within the operant chamber. In the other, it was embedded within complex social environments.

Alexander's Rat Park study did not emerge in isolation from this landscape. Rather, it took shape within and against these methodological traditions. The physiological and ecological paradigms that preceded Rat Park clarify its intellectual stakes, revealing how Alexander both drew upon and reworked their experimental designs and explanatory logics. Rat Park can be understood as an intervention at their intersection: preserving the rat as an experimental model while reorganizing the conditions under which pathology could be said to emerge.

The Physiology of Addiction Paradigm

The first paradigm located pathology in the drug's capacity to reinforce behaviour through brain mechanisms, and it was formalized through operant self-administration methods. By the 1950s and 1960s, rats had become the primary experimental subjects within a physiological paradigm of addiction research that consolidated in behavioural pharmacology and neurobiology (Alexander, 2010; Ahmed, 2020). Drawing directly on the operant conditioning apparatus designed by B. F. Skinner, researchers adapted Skinner's box to examine drug dependence in rats under controlled laboratory conditions. Within this formation, addiction was conceptualized as a physiological and neurological process located in the brain, a pattern of neurochemical dependence initiated and sustained by exposure to pharmacological agents. This interpretation was reinforced by emerging research demonstrating that reinforcement itself had a neural substrate; Olds and Milner (1954) showed that rats would repeatedly self-stimulate specific brain regions, suggesting that reinforcement operated through identifiable neural mechanisms. On this basis, psychoactive drugs were increasingly understood to act upon these same neural systems of reward, a logic

operationalized in intravenous self-administration studies (e.g., Weeks, 1962; Weeks & Collins, 1964; Thompson & Schuster, 1964).

Representative studies from this period employed intravenous self-administration procedures in which a rat was housed alone in a Skinner box and surgically implanted with a catheter threaded into the jugular vein (Weeks, 1962). The catheter connected to an external drug reservoir such that each lever press delivered a precise intravenous infusion of the drug of study. The sequence was mechanically simple: the rat approaches the lever, depresses it, receives drug, and repeats. Isolation was the core of the design. By minimizing social interaction and environmental variation, such experiments staged drug-taking as the direct consequence of the drug's reinforcing properties (Schuster & Thompson, 1969). Repeated lever pressing was interpreted as evidence that psychoactive drugs functioned as powerful reinforcers, activating neural reward pathways and producing physiological dependence that sustained continued intake over time.

The interpretation of these experiments projected a powerful equivalence between rat and human. If drugs reliably reinforced behaviour in rats under controlled conditions, then addictive potential was understood as intrinsic to the substance and generalizable across mammalian bodies. This logic was later articulated explicitly by neuroscientists such as Roy A. Wise (1940-), who observed that “lower animals seem universally susceptible to the reinforcing effects” (Wise et al., 1989, p. 903) of drugs such as heroin and cocaine, a formulation that rendered susceptibility as biological rather than situational. Wise further argued that addictive drugs exert their reinforcing effects by pharmacologically activating neural mechanisms of motivation and reward, requiring “no special conditions” for reinforcement to occur (Wise et al., 1989, p. 906). Rat responses were thus taken to reveal a universal addictive property of drugs presumed to extend to humans. These physiological studies operated through two related reductionist logics: a pharmacological reductionism that treated the drug as the primary causal agent of addiction, and a neurobiological reductionism that located the maintenance of drug-taking behaviour in the substance's effects on the brain.

This interpretation converged in mid-century medical discourse and contributed to the formal medicalization of addiction. In 1950, the World Health Organization's Expert Committee on Habit-Forming Drugs positioned drug dependence as a medical concern within international public health, and in 1956 the American Medical Association recognized alcoholism as a disease (World Health Organization, 1950; Levine, 1978). These classifications aligned institutional authority with laboratory findings that located addiction in the brain. This medicalization logic laid the groundwork for what would later be formalized as the brain disease model of addiction (BDMA), which understands addiction as rooted in “changes in brain systems that mediate the experience and anticipation of reward, systems responsible for perception and memory, and higher order executive systems underlying cognitive control” (Lewis, 2017). As such, findings emerging from the physiological paradigm reinforced the consolidation of medical authority over addiction, positioning dependence as a disorder properly addressed through biomedical intervention. In this way, the physiological paradigm constructed addiction as a medical disorder located within individual physiology.

Behavioural Sink Paradigm

However, in the mid twentieth century, the physiological paradigm was not the only experimental mode of exploration for researchers interested in the development of pathology. A second paradigm located pathology not within the organism's neurobiology but within the socio-spatial organization of the environment. In contrast to operant conditioning models that isolated the organism from its social context, ecological researchers argued that behaviour must be understood within complex environmental systems. Within this paradigm, pathology was understood as socially and environmentally produced rather than as the result of physiological or biological determination.

Animal ecologist John B. Calhoun (1917-1995) was a prominent architect and public advocate of this ecological approach. In the 1950s Calhoun constructed semi-naturalistic rat environments to model modern urban life. His central question was when would a planned “rat city” become a “rat slum”—that is, how much environmental pressure a population could sustain before pathological behaviours materialized. Departing from the isolating Skinner box, Calhoun built a 10-by-14-foot enclosure divided

into interconnected sections with ramps, elevated platforms, and shared feeding areas that mimicked high-rise apartments and city blocks (Ramsden, 2011). In “rat city”, food and water were continuously available and famine and disease were absent. Survival was secured, but space was not. As the population multiplied, opportunities for withdrawal, nesting, and stable interaction were limited; population density produced escalating aggression, disrupted maternal behaviour, withdrawal, and cannibalism. Calhoun described this phenomenon as the effect of a “behavioral sink,” noting that unfavourable environmental conditions “aggravate all forms of pathology that can be found within a group” (Ramsden, 2011, p. 667). In this way, crowding operated not as scarcity of resources but as a deprivation of livable space—an environmental pressure that reshaped behaviour.

The behavioral sink thus marked the point at which environmental degradation became visible as pathology and behaviour was interpreted not as biologically predetermined, but as environmentally driven. For Calhoun, behaviour changed in response to the environment; it was plastic. As he later emphasized, “The behavioural repertoire of an animal may be innate, but it was flexible; it changed according to the environment” (Ramsden & Adams, 2024, p. 114).

This experimental work unfolded within a broader postwar environmental movement, often traced to the late 1940s (Ramsden and Adams, 2024), that emerged in response to mounting concerns about industrial pollution, air quality, and the public health consequences of ecological degradation. Through this movement, environmental management and design were increasingly understood as central not only to citizens’ physical health but also to their mental and social well-being. Landscape architects such as Ian McHarg (1920-2001) mapped patterns of disease, crime, and social breakdown onto layers of housing conditions, employment, land use, and density (1969), treating pathology as geographically structured rather than biologically determined. This spatial logic underwrote what Ramsden and Adams (2024) describe as “socio-architecture”: the deliberate design of built environments to influence behavioural trajectories, a framework that extended beyond the laboratory into architectural and institutional reform (Dyck, 2010). Calhoun’s rodent universe rendered this environmental logic experimentally visible, modeling how environmental conditions could generate pathology. In this way,

the ecological paradigm did not merely run parallel to environmentalism; it located pathology in environmental conditions rather than within the organism.

The Rat Park Paradigm

It was within this tension between physiological and environmental explanations that Alexander positioned Rat Park. Like proponents of the physiological model, he regarded addiction as a phenomenon worthy of rigorous experimental study in rats. Yet, like Calhoun, he treated pathology as environmentally structured rather than solely biologically determined. As an experimental psychologist, he did not reject laboratory methods or the finding that isolated rats readily self-administered morphine. What he rejected was the prevailing pharmacological and neurobiological interpretation of addiction, which treated heavy and continuous drug consumption as the inevitable consequence of a drug's effects on the brain rather than as conduct structured by environmental conditions—an argument already implicit in the Rat Park studies and later articulated more explicitly in Alexander's theoretical critiques of addiction research (Alexander & Hadaway, 1981, 1982). Within the physiological model, such behaviour was taken as evidence of a universal and context-independent process of dependence.

Alexander believed these previous experiments overlooked the impact of deprived, isolated experimental conditions. He argued that the physiological paradigm treated isolation in the operant chamber as neutral background when it was in fact a substantial environmental manipulation; isolation was not the absence of environment but the imposition of a highly restrictive one. Such conditions severely restricted the species-typical social and exploratory behaviour of rats which Alexander described as “gregarious, wide-ranging, and curious animals” (Alexander et al., 1978, p. 175). He further maintained that Skinner's box drastically narrows behavioural alternatives, making repeated drug-taking difficult to disentangle from the monotony built into the apparatus itself. Alexander described this as a “housing conditions effect, “noting that “for isolated rats the reinforcement value of morphine ingestion was enhanced by relief of the discomfort of spatial confinement, social isolation, and stimulus deprivation” (Alexander et al., 1978, p. 178). Finally, he suggested that high morphine intake observed within this constrained environment could not be explained solely through neurochemical mechanisms.

As Alexander and his colleagues noted, “a neurochemical change theory would also need to account for a housing conditions effect” (Alexander et al., 1978, p. 178). This early skepticism toward reductionist neurochemical explanations would later lead Alexander to pose the problem more directly. Rejecting drug-centered accounts of addiction, he asked: “If drugs are not the cause of addiction, what is?” (Alexander, 2010).

Rather than abandoning experimental psychology, Alexander redesigned it in light of these critiques. Specifically, he inverted three conditions of prior studies: isolation, constraint and deprivation. Isolation became social housing; constraint became expanded behavioural possibilities; deprivation became enrichment. Calhoun had forcefully demonstrated that pathology could emerge as the direct result of environmental degradation—an urban dystopia some have described as rodent hell (Ramsden, 2011, p. 668). If Calhoun’s urban dystopia could produce pathology, Alexander asked whether the inverse might also hold: could an urban utopia—an enriched rodent environment—prevent its development? In pursuing this inversion, Alexander retained Calhoun’s experimental premise that built environments function as causal instruments, capable of generating or diminishing pathological behaviour. The experimental logic was direct: if drug addiction were primarily neurobiological, as previous studies had proposed, then the sustained patterns of drug intake observed in isolated rats should reappear regardless of environment. In this sense, Rat Park preserved the laboratory rat as a model organism while relocating addiction from the organism to the structure of its environment, displacing the assumption that its cause lay within individual physiology.

The Political Power of a Plastic Rat

Rat Park did more than test the robustness of the physiological paradigm; it reactivated and rearranged the inherited cultural histories of the rat. Outside the laboratory, as shown earlier, human–rat encounters were largely negative. The rat was configured as urban vermin—crowded, dirty, disease-bearing, and in need of extermination. Within this stabilized cultural image, the rat appeared fixed in its degeneracy, defined by inherent traits rather than by environmental conditions.

Important to Alexander's creation of the Rat Park is how these assumptions about the rat mapped onto humans; specifically, how marginalized groups in society were metaphorized and reduced to sub-human vermin. For Alexander, the constitution of the "addict" in politics and media during the 1960s and 1970s mirrored this image of an urban pest that must be eradicated from the streets. Yet Alexander believed both the rat and the addict could transcend this lowly status and become civilized. This metamorphosis from wild to civil—one Alexander would model in the Rat Park studies—hinged on the rat's plasticity, its demonstrated capacity to learn, grow, and adapt.

In the political and popular discourse of the 1960s and 1970s, the "addict" was frequently cast as a chronic figure—compulsive, incurable, and burdened with a condition understood as a permanent fixture of identity, a mark that could not be erased (Conrad, 1979). Popular self-help movements such as Alcoholics Anonymous emphasized lifelong identification with addiction, reinforcing the idea that one did not cease being an addict, but remained one indefinitely (Valverde, 1998). The widely circulated mantra "once an addict, always an addict" captured this logic of permanence. Within this framework, the addict, like the vermin rat, appeared fixed: marked by pathology and incapable of complete transformation.

The so-called "Myth of the Demon Drug"—a narrative with roots in earlier moral and temperance discourses—gave rhetorical force to this fixation on permanence (Szasz, 1975; DeGrandpre, 2006; Alexander, 2008). It cast drugs as reified forces that possessed and overtook individuals; earlier rhetoric invoking "demon rum" or the "ensnaring power of morphia" illustrates this mythologization framing of addiction as a condition beyond the individual's control (Alexander, 2008, p. 173-174). Later reframed as the brain disease model of addiction, this logic of possession was recast as neurological determinism, locating addiction within the structures and chemistry of the brain and explaining its persistence through enduring neurochemical processes. Though the explanatory language shifted, the underlying assumption remained: addiction was intrinsic and enduring rather than contingent and plastic. In both cases—the outside-the-laboratory rat and the late-twentieth-century addict—pathology was imagined as intrinsic and enduring, rendering both figures resistant to meaningful transformation.

Rat Park unsettled this assumption of fixity by constructing what can only be described as an urban utopia— an enriched model city within the laboratory. For Alexander, this enriched environment was a deliberate intervention into the assumption that addiction reflected an intrinsic and enduring condition of the organism. If addiction were fixed within the individual—whether moralized as weakness or naturalized as a brain disease—then altering socio-environmental conditions should make little difference.

On the floor of the Simon Fraser laboratory, Alexander built an 8.8 m² open-topped plywood enclosure housing sixteen to twenty mixed-sex rats in continuous social contact. Food and water were freely available throughout the experiment alongside a morphine solution (Alexander et al., 1978; Alexander, 2010). Climbing structures, nesting materials, hiding spaces, and wood shavings expanded the rats' range of activity, ensuring that morphine consumption competed with social interaction, exploration, mating, and play. As Alexander explained in the original publication, the study was designed “to contrast oral morphine self-administration of isolated rats with that of rats in the least isolated and least confining conditions that could be contrived in the laboratory” (Alexander et al., 1978, p. 175). In contrast to the deprivation and monotony of solitary cages, this environment multiplied behavioural alternatives. Drug-taking was no longer the only available behaviour; it was one option among many.

This design presupposed—and strategically leveraged—the rat's established status as a learning organism, an inheritance from early twentieth-century experimental psychology that had already rendered the rat teachable and malleable. Rats housed in Rat Park consumed dramatically less morphine than isolated rats, at times drinking ten to sixteen times less during experimental phases (Alexander et al., 1978). On this basis, Alexander and his colleagues concluded, “housing conditions appear to play an important role in determining morphine self-administration” (Alexander et al., 1978, p. 178). The same drug, delivered under different environmental conditions, yielded markedly different patterns of use. Under these conditions, the rat's relation to morphine was not fixed but generated within particular socio-environmental arrangements. Heavy intake emerged under deprivation; enrichment diminished it. Drug-

taking appeared not as an inescapable neurobiological destiny but as conduct constituted through environmental structure.

The significance of this transformation depends upon historically enduring cultural assumptions that cast the rat as dirty, diseased vermin, and as an inhabitant of crowded and degraded urban housing stock. Alexander's use of rats was not merely methodological convention; he chose them because they were organisms already positioned within this narrative of decay, making their behavioural reconfiguration legible as a reversal of that script. The rat can be transformed to "civilized" only because it was first cast as uncivilized and in need of eradication. Paradoxically, this reversal does not escape that inheritance but remains tethered to it; redemption is intelligible only because degeneration was long established. In this sense, Alexander both mobilized and unsettled the rat's cultural script, trafficking the very associations he sought to demonstrate were contingent. Transformation here occurs through inheritance, not in spite of it.

Through Alexander's mobilization of the culturally loaded laboratory rat, Rat Park marked the culmination of the rat's laboratory history of growth, learning, and plasticity in the figure of a plastic organism—evidenced by the marked reconfiguration of previously established drug-taking patterns. What had appeared as compulsive and fated morphine consumption gave way to selective and diminished use, rendering the rat a "civilized" drug user capable of monitoring and regulating its own intake. In this sense, Alexander renders not only the rat but the addict as plastic rather than fixed. What appears as "civilized" is revealed not as moral elevation, but as an ontological classification grounded in environmentally contingent patterns of conduct. In providing experimental evidence that addiction was environmentally constituted rather than intrinsically fixed, Alexander unsettled the logic of the Myth of the Demon Drug and its contemporary neuroscientific successor, the brain disease model—both of which presume a fixed relation between substance and subject. Rat Park disrupted a longstanding therapeutic pessimism that treated addiction as biologically inevitable (Peele, 1981), an assumption that had come to inform dominant political, medical and therapeutic responses. This reconfiguration opened conceptual space for reimagining addiction beyond the confines of the laboratory.

Chapter 2:

From Marginal Experiment to Icon of Policy: The Uptake of Rat Park in Twenty-First Century Drug Policy

In 2004, journalist Lauren Slater (1963-) published *Opening Skinner's Box: Great Psychological Experiments of the Twentieth Century*, a collection of essays revisiting key studies in twentieth-century psychology, including Stanley Milgram's (1933-1984) obedience experiments, David Rosenhan's (1929-2012) pseudo-patient study, and Harry Harlow's wire mother experiments. Unexpectedly, Slater included Alexander's Rat Park study among these landmark experiments, devoting a full chapter to the study's methodology and findings, as well as interviews with Alexander reflecting on his work. The inclusion is striking as in 2004 Rat Park had not achieved the same level of recognition as the other studies in the book. In the decades following its late 1970s publication, the study circulated primarily within psychopharmacology and animal research communities, with citations occurring only sporadically and often by members of Alexander's own research team (Bozarth et al., 1989; Alexander & Hadaway, 1981). Outside these domains, Rat Park remained relatively obscure, exerting little influence on broader scientific, political, or public discourse. Following the publication of *Opening Skinner's Box*, however, the study began to circulate far beyond its original disciplinary context. References to Rat Park appeared across an expanding range of sites, including policy documents, educational curricula, popular media, advocacy materials, and journalistic accounts. In this way, Slater's book initiated a new appreciation and recognition of the study, as Rat Park emerged as a delayed and unexpected success of the early twenty-first century.

Rat Park's twenty-first-century circulation stands in marked contrast to Lauren Slater's assertion that "no one paid much attention" (Slater, 2004, p. 169) to the study, as after 2004, Rat Park was everywhere. This resurgence was evident across major media outlets, including a 2006 New York Times article titled "An Anti-Addiction Pill?", a 2013 BBC editorial "Drug Addiction: The Complex Truth," and

a 2015 Psychology Today article “Addiction, Connection, and the Rat Park Study”. Its reach extended further through popular digital media, most notably in British journalist Johann Hari’s (1979-) 2015 TED Talk *Everything You Know About Addiction Is Wrong*, which has been viewed tens of millions of times across platforms and was adapted from his New York Times bestselling book *Chasing the Scream* (2015), which features an extended discussion of Rat Park. Its circulation extended into visual media, including Australian artist Stuart McMillen’s 2012 comic adaptation which was originally housed on his website garnering over 700,000 views before being printed and sold to practitioners and clinicians across the globe looking to integrate it into practice. In this way, Rat Park became iconic within twenty-first-century drug discourse, as the study was taken up across diverse media forms and circulated globally. However, its mainstream visibility is not the primary concern here; rather, its less visible but more consequential influence lies in its uptake within policy circles and its mobilization by proponents of twenty-first-century social movements.

In the 2000s and 2010s Rat Park was taken up in drug policy circles and became subject to multiple policy-oriented interpretations. At the center of each of Rat Parks interpretations was a redefinition of addiction: not as a physiological or neurological response to specific substances, but as a socially situated practice, “chosen” under conditions of deprivation across both human and nonhuman populations. The study was particularly of interest to social movements looking to reform drug policy as most early 2000s policy grew out of medicalized understandings of addiction. Those looking to oppose dominant policy frameworks that guided education, policy, and legal frameworks looked to evidence of “the social” to demonstrate the malleability of biological processes (Pettit and Vigor, 2015). Three of the most prominent discursive communities to take up Rat Park were those involved in preventative education, harm reduction and decriminalization.

However, like the laboratory rat itself, the study did not carry a fixed meaning, as each community interpreted it differently. In this sense the study acquired multiple “afterlives” (Pettit & Vigor, 2015). Pettit and Vigor (2015) use the term “afterlives” to describe how a single scientific study travels across discursive communities and political contexts, taking on multiple meanings. The study’s political

plasticity extends the experimental claim at the heart of Rat Park: as addiction was shown to be plastic under ideal environmental conditions, subsequent interpreters of the study sought to reform drug policy rendering drug-use environments themselves plastic. In this way, Rat Park traveled across multiple “environmental imaginaries” within drug policy discourse, as its core insight—that addiction is shaped by environment—was translated into different sites of intervention. After 2004, Rat Park emerged as a politically plastic object, mobilized to support different political agendas.

Rat Park proved remarkably successful in its uptake in drug policy circles in the twenty-first century, becoming an iconic point of reference used to promote reforms in drug education, policy directives, and legal frameworks. Yet Alexander, as the original author, remained dissatisfied with this success. Writing at the end of his career in his 2022 article “My Final Academic Article on Addiction,” he sought to “state what I have learned in my long career as emphatically as possible before I quit,” yet instead of reflecting on the study’s widespread uptake and impact, he concluded that “the modern age has failed to face its addiction problem in a realistic way”. For him, Rat Park was not a politically plastic object, but a politically directed one he had meticulously reshaped over the course of his career to convey his own account of addiction and a corresponding vision of how it should be addressed. The central problem of Chapter 2, then, is to reconcile Alexander’s dissatisfaction with the apparent successes of Rat Park in the twenty-first century by examining the evolution of Alexander’s political vision for the experiment from the late 1970s to the early 2000s, tracing how these different interpretations reflected his own changing political orientation. It then examines how the study was taken up and understood by people in prevention, harm reduction, and decriminalization circles, analyzing how each community’s understanding diverged from Alexander’s, leaving him ultimately frustrated.

Alexander’s Political Interpretation

The first person to interpret the study politically was Alexander himself. Writing in the early 1980s, his interpretation was shaped by the anti-psychiatric and anti-institutional critiques of the 1960s and 1970s associated with scholars such as Michel Foucault (1926-1984), Thomas Szasz (1920-2012), Ivan Illich (1926-2002), and Ronald Laing (1927-1989). While the movement was politically multivalent,

its thinkers were united by a shared dissatisfaction with psychiatry's expanding institutional authority despite being unable to provide a clear scientific account of mental illness (Mayes and Horwitz, 2005). Initially, anti-psychiatric critiques challenged the medicalization of mental illness, arguing that it was iatrogenic, produced through psychiatric institutions, practices, and forms of expertise (Illich, 1976). Yet over time, these critiques became increasingly politicized, as countercultural movements—including feminist organizing and opposition to the Vietnam War—reframed mental illness as produced not by psychiatry, but by broader social and political conditions (Staub, 2011). In this context, mental illness came to be understood as a fundamentally political phenomenon (Staub, 2011, p. 6). At its most radical, some argued that “the entire society was becoming a lunatic asylum,” suggesting that madness was not pathological but a rational response to unjust political conditions (Staub, 2011, p. 7).

Alexander would extend this reasoning to addiction, arguing that, like mental illness, addiction is socially produced, an adaptive response to one's social and environmental conditions. Like the anti-psychiatric thinker who preceded him, Alexander's work emerged at the intersection of disciplinary debates and broader political unrest. In the 1970s, addiction, much like mental illness in earlier debates, occupied an unstable position within psychiatry and psychology, marked by shifting classifications across successive editions of the DSM and persistent disagreement over its underlying causes (Rounsaville et al., 1986; Spillane, 2004). This uncertainty was intensified by the escalation of the War on Drugs alongside the persistence of countercultural drug practices, reframing drug use as a deeply political issue, entangled with questions of social control, deviance, and resistance (Dyck, 2005; Herzberg, 2006). As such, the medicalization of addiction functioned as a politically charged effort to depoliticize drug use by extending regulatory control over substances and those who used them. It was this framework that Alexander would challenge, seeking to re-politicize addiction by exposing the entanglement of addiction science with broader political projects.

Like anti-psychiatric thinkers, Alexander's critique emerged from within the discipline as he challenged the conclusions of fellow experimental psychologists in 1970s addiction research. He argued that the neurological and physiological explanations dominating the field functioned to medicalize and

individualize addiction. For Alexander, this medicalization justified not only medical and psychological intervention, but also punitive and coercive policies associated with the War on Drugs: the field of addiction thus operated as a machination of political control. Seeking to reform the field of addiction, Alexander proposed an alternative model that redefined addiction as an adaptive response to social and environmental conditions. Over the course of his career, the scale of the environment he identified as causal expanded from individuals' immediate social environments to broader political conditions, and ultimately to the globalized systems of capitalism and colonialism. At its most expansive, Alexander's critique drew on Rat Park to describe society not as an asylum but as a "cage" (Staub, 2011; Alexander, 2010), casting addiction as an adaptation necessitated by the confining political and economic conditions that structure modern life.

However, Alexander diverged from anti-psychiatry in two important ways. First, he shifted the object of analysis. Whereas anti-psychiatric thinkers largely treated psychosis and schizophrenia as the primary conditions through which to interrogate psychiatric power, Alexander treated addiction as a comparable site for interrogating psychological and political power, bringing it into the centre of critical analysis. Second, he departed methodologically. While anti-psychiatric critiques were typically developed through ethnographic, clinical, or genealogical approaches, Alexander was among the first to launch an antipsychiatry critique on the back of a psychological experiment involving laboratory animals. This argument would unfold over the four decades following the Rat Park studies, as Alexander's anti-psychiatric critique developed through an evolving political interpretation of the experiment, transforming it from a psychological study into a politically operative model that challenged the assumptions of addiction science, drug policy, and modern social organization.

Alexander's political interpretation of Rat Park unfolds through a layered, interdisciplinary critique, as he reinterprets the experiment over the course of his career by integrating evidence and theory from psychological, sociological, historical, and anthropological traditions. This section reconstructs this interpretation through four developments: (1) a psychological critique of addiction science, (2) a sociological critique of inadequate environments that produce addiction, formalized in his adaptive

model, (3) a historical critique of War on Drugs policy through which he articulates a political program of reform, and (4) an anthropological critique of capitalism and colonialism that culminates in his theory of social dislocation. In this reconstruction, each critique builds on the last. Rather than departing from his psychological foundations, Alexander extends them, adding new analytical strata—sociological, historical, and anthropological—to produce an increasingly expansive account of addiction in the modern world.

Psychological Critique

Alexander first interpreted Rat Park as a way of diagnosing addiction science itself. He interrogated how addiction was constituted within experimental psychology, developing a critique of dominant psychological theories of addiction that, in his view, carried significant political consequences. In *Theories of Opiate Addiction: Time for Pruning* (1981), he and co-author Patricia Hadaway argued that addiction science had become characterized by theoretical eclecticism. In addiction research, this eclecticism had produced a proliferation of competing explanations, or what Alexander described as “theoretical overgrowth” (Alexander & Hadaway 1981, p. 78). Theories of addiction ranged from physiological accounts emphasizing metabolic processes and endorphin deficiencies to psychological explanations portraying addiction as a response to emotional distress or family dysfunction. For Alexander, this “theoretical overgrowth” did not reflect productive scientific disagreement. Instead, it was a symptom of what he called a “disordered science,” shaped by “political and emotional complications” (Alexander & Hadaway 1981, p. 86), in which competing theories led to different approaches to legislation, treatment, and social control. As he warned, “confused and inhumane policy can grow out of disordered science, [...] because theoretical overgrowth obscures the true nature of opiate addiction and the deeper issues it raises” (Alexander & Hadaway, 1981, p. 86). Addressing this condition required “careful pruning”: the development of an integrated theory capable of “guiding research, public understanding, and policy responses.” Such clarification, Alexander argued, was also a professional responsibility: “professionals, especially through their professional organizations, could perform an important public service by publicizing a simple, realistic conception of addiction” (Alexander &

Hadaway, 1981, p. 86). Rat Park appeared to Alexander as an experiment that could cut through this theoretical confusion, pointing towards an yet-unarticulated theory of addiction with far-reaching implications for both science and drug policy.

At the level of theory, Rat Park provided empirical evidence that challenged dominant explanations of addiction. Alexander first developed this critique in 1981, targeting what he called the “exposure orientation,” the view that “exposure to opiates is the essential cause of addiction” (Alexander & Hadaway, 1981, p. 78). The exposure orientation represented the theoretical culmination of the physiological paradigm of addiction research examined in the previous chapter. In later work, Alexander reframed this critique, arguing that the exposure orientation was only one variant of a broader and more influential framework: the disease model of addiction. If the physiological paradigm reduced addiction to the pharmacological and neurological effects of drugs, the disease model extended this logic through a form of biomedical reductionism that located addiction within the pathological body of the individual. One example of this medicalizing logic that Alexander highlighted was the claim that individuals were “seen as vulnerable to drugs much as people with other genetic defects might be vulnerable to diabetes” (Alexander, 1987, p. 49). Addiction thus was said to reside within the body, casting the addict as the locus of pathology and echoing earlier public health discourses that located disease in the bodies of urban pests. Individuals were therefore understood as progressively incapable of governing their drug use once the disease had taken hold, a framing that justified medical and institutional intervention to manage this internal pathology. In this way, medicalized accounts of addiction not only defined addiction’s cause, but also structured its management.

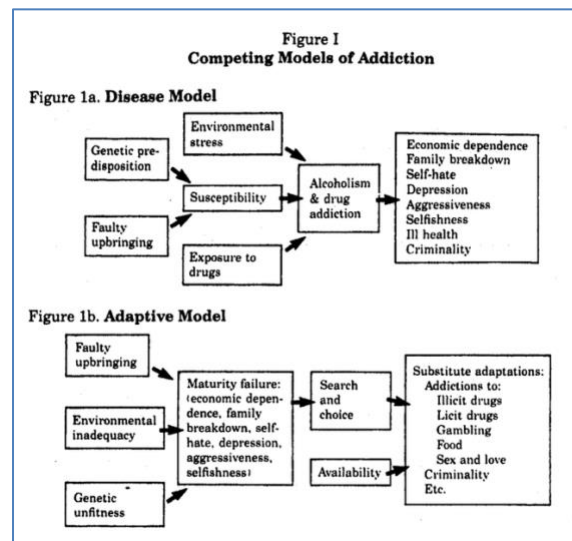
Alexander’s psychological critique thus extended into questions of drug policy, as he interrogated how medicalized understandings of addiction shape modes of governance. Framing addiction as a disease placed drug use and therefore “addicts” under medical jurisdiction governed by public health authorities. This framing could lead to the inflation of the harm posed by addiction and the necessary “remedies” needed to treat it. As Alexander (1987) observed, “If drug addiction is not only a disease but an epidemic, then curtailment can become violent without limit—epidemics warrant any measures necessary to protect

public health” (Alexander, 1987 p. 57). Framed as an epidemic, addiction became a public health emergency in which population-level intervention and behavioural regulation were not only permitted but expected. Alexander argued that this governing logic had deeper historical roots. Drawing on sociological and historical scholarship, he traced the disease model to the temperance movement of the eighteenth and nineteenth centuries, when figures such as physician Benjamin Rush recast drunkenness as a disease rather than a vice, a framework later extended from alcohol to opium, cannabis, and cocaine (Alexander, 1987). From this perspective, the War on Drugs represented not a historical break but the continuation of an older political rationale in which “the disease model provides a logically consistent, putatively scientific justification for cruel, ineffective, and mendacious policies” (Alexander, 1987, p. 58). Policies such as mandatory urine testing, forced treatment, incarceration, and the denial of social and medical services exemplified how the disease model oriented policy toward regulating drug-using bodies rather than addressing conditions that produced drug use. As he noted, the disease model rendered coercive intervention legitimate because “it is justifiable to abrogate normal civil rights when the likelihood of contracting a severe disease is certified by medical science” (Alexander, 1987, p. 58). For Alexander, this psychological critique of addiction science and the “mendacious” policies it validated necessitated a new theory of addiction.

Sociological Critique

Building on his psychological critique, Alexander used Rat Park as the empirical basis for an alternative theory of addiction grounded in a sociological critique of the social conditions that produce and sustain addiction. Much of the scientific authority underpinning the disease model rested on animal experiments, particularly studies involving laboratory rats. By the 1980s the image of the drug-addled laboratory rat had moved beyond the laboratory into War on Drugs propaganda. One widely circulated advertisement warned that “only one drug is so addictive that nine out of ten laboratory rats will use it until dead. It’s called cocaine. And it can do the same thing to you” (Partnership for a Drug-Free America, n.d.). Rat Park provided Alexander with the means to challenge this vision of addiction and the assumptions about the nature of addicts that accompanied it. The experimental claim that addiction was

environmentally plastic was translated into a theory that reconceptualized addiction as an adaptive response to environmental conditions. On the back of Rat Park, Alexander articulated the Adaptive Model of Addiction. Unlike the disease model, the adaptive model posited “no disease, pathology, or disorder,” instead proposing that “addicted people are responding adaptively within the limitations of their own abilities, perceptions, and environments” (Alexander, 1987 p. 50). While he first outlined the model in 1981, it was formalized in his 1987 paper “The Disease and Adaptive Models of Addiction: A Framework Evaluation”. This paper included not only a comparative chart titled “Competing Models of Addiction” (Alexander, 1987), but a detailed explanation of the casual logic of his new model:



“The adaptive model is also depicted as an organized set of causal relationships (Figure 1b). The process starts with some combination of faulty upbringing, inadequate environmental support (e.g., ghetto conditions, societal breakdown), and genetic unfitness (i.e., inborn physical or psychological disability). These problems, and the way the person understands them, result in failure to achieve the levels of self-reliance, competence, social acceptance, self-confidence, and so on that are the basic expectations of society. In short, some people fail to “grow up” or to maintain adult integration. Failure to reach or maintain adult integration is a grave problem. It invites social ostracism, despair, mental disintegration, and ultimately suicide. Therefore, it creates an urgent need to search out and choose substitute ways to provide meaning, organization, and social support. Various “substitute adaptations” may be, consciously or unconsciously, adopted for this purpose. Substitute adaptations do not provide the abiding satisfactions of adult integration, but at least provide a basis for survival and allow hope for the future. Therefore they are seized and held desperately when their availability is threatened. From an adaptive viewpoint, drug addiction or any other “substitute adaptations” are adaptive because the alternatives are worse. The substitute adaptations may be visibly harmful, but they provide something essential. (Alexander, 1987, p. 49)

As the passage above demonstrates, his adaptive theory explains addiction not in terms of the pharmacological properties of drugs or individual pathology, but through conditions of “inadequate environmental support,” including “ghetto conditions” and “societal breakdown.” This reversal of the disease model's causal logic resonated with anti-psychiatric theorist like R. D. Laing who questioned who was truly mad—the sufferers or society (Laing, 1960). He ended the 1987 Adaptive Model debut article by provocatively asking: “If conditions are so harsh that significant numbers of people are unable to achieve minimal mature functioning, does it not follow that society needs therapy rather than its individual members?” (Alexander, 1987, p. 60) In this sense, Alexander’s sociological critique implied a starkly anti-psychiatric conclusion that disease lay not within individuals, but within society. In other words, addiction is the symptom of a diseased society. This emphasis on society’s inadequacies made visible Alexander’s proto-reformist impulse: in contrast to R. D. Laing, he aimed not only to diagnose but to catalyze the transformation of the social conditions that produce addiction.

Echoing the logic of Rat Park, addiction appeared as the outcome of social environments that failed to sustain healthy forms of life. For Alexander, the punitive logic of the War on Drugs cultivated precisely such environments: rather than integrating people who use drugs into supportive communities, it further isolated, stigmatized, and shamed them, thereby reproducing the very conditions that make addiction appear necessary. As with Alexander’s reform of the laboratory rat cage, societal reform required a similar stepwise approach: first identifying what made the environment harmful and second transforming it. Applying the lessons of Rat Park, Alexander rendered his sociological critique actionable by turning to a historical analysis of the War on Drugs to identify the policies he sought to reform and replace.

Historical Critique

Building on his psychological and sociological critiques, Alexander extended his analysis through a historical critique of drug policy. Together with his adaptive model of addiction, this critique provided the grounds for a reformist political program, articulated in his 1990 paper “Alternatives to the War on Drugs”. He began this historical critique by stating that “the so-called ‘War on Drugs’ has neither

prevented drug use, curbed addiction, nor alleviated social problems” (1990, p. 1), pointing to a growing body of critical scholarship documenting the regime’s failures (e.g., Brecher, 1972; Szasz, 1985; Nadelmann, 1988). In Alexander’s eyes, a new approach was long overdue, yet he felt politicians and the general public were unable to “envision better ways of approaching the grave problems that bedevil these times” (1990, p.1). Alexander took it upon himself to diagnose the problematic logic behind the War on Drugs, arguing that the focus had drifted from reducing drug use to “controlling behaviour,” marked by the “overuse of legal and social controls,” resulting in “misery at great public expense” (Alexander, 1990, p.8).

As in his other works, the environment remained salient. Before launching into his alternative political program, Alexander emphasized the importance of “regionalism,” noting that “regulation of public drug use is a legitimate expression of community values and taste,” similar to “local control of architecture through zoning and building codes” (1990, p. 2). In this sense, regulation is positioned not merely as a legal mechanism but as a means through which social environments are organized and maintained. This line of argumentation suggests a collapse of the distinction between policy and environment, extending his sociological argument by implying that environments are politically constituted, shaped by policy. He described the environment created by War on Drugs policies as marked by “black markets, police corruption and strong, [and] unsterile drugs” (Alexander, 1990, p. 7). These conditions, rather than reducing addiction, can be understood as producing conditions of ostracization, despair, and mental disintegration to which individuals may turn to addiction to survive and adapt. Alexander sought to offer an alternate political program that also functioned as an intervention into the environment of drug use and drug users.

While Alexander drew on anti-psychiatric critiques of coercive drug policy (e.g., Szasz, 1975) to situate his approach, he diverged from their libertarian emphasis on the abolition of state intervention. He conceded that “simple abandonment of drug prohibition cannot be a realistic possibility”, continuing that such an approach would “invite disaster, followed by a reinstatement of even harsher prohibition laws” (1990, p.1). Instead, Alexander advanced a reformist program aimed at reconfiguring drug policy by

restructuring the social and institutional conditions governing drug use. In other words, he argued that transforming policy would transform the environments in which drug use occurred. Following the stepwise logic of Rat Park, Alexander first identified the policies and practices that cultivated damaging environments and then proposed corresponding reforms. He advocated (1) replacing drug prohibition laws with localized, pragmatic controls, (2) shifting treatment away from bureaucratic professional systems toward community-based social innovations, and (3) replacing anti-drug propaganda with valid information.

These reforms were not simply policy adjustments but interventions into the environments of drug use. For example, Alexander explains how the prohibition of cocaine had led to the sale of “unsafe cocaine substitutes such as ‘Yocaine,’ ‘Rock Crystal,’ and ‘Snort,’” (1990, p.7) each with dangerous side effects and possible long-term health consequences. He posits that controlled distribution through professionalized venues could not only “eliminate much of the black market” (1990, p. 7), but replace makeshift labs with pharmacological testing facilities, street dealers with doctors, and back alleys with pharmacies—a transformation of the environments in which drugs are manufactured, distributed, and sold. If the War on Drugs was a regime of control, Alexander sought to loosen its constraints. Contrary to popular belief, he stated that “severely addicted persons are best understood as controlling their intake” (1990, p. 8), suggesting that policies need not control drug use, but improve the conditions under which it occurs. In his cocaine example, this meant improved environments that not only change the setting but also reshape the person–environment relation, making the individuals aware of “pharmacological and social hazards, and of alternative drugs and practices” (1990, p. 7). In this framing, policy operates through the environment, and the environment thus shapes individuals’ relationships to drug use.

Alexander’s historical critique can be read alongside scholars like Michel Foucault, as his theories of addiction emerged in part through the analysis of historically specific forms of governance that shaped environmental arrangements. Alexander ended this historical critique by stating that “the true naivete of the past century is the drug warriors’ faith that there can be simplistic coercive solutions to deep structural problems” (Alexander, 1990, p. 19). Reform, in this sense, entailed a shift in the object of

intervention from individuals to environments. If the landscape created by the War on Drugs was akin to the unlivable laboratory cage, then transformation depended on strengthening, supporting, and enriching the environments in which drug use occurs rather than controlling individual behavior. Without such transformation, Alexander warned, “people cannot be forced to behave moderately in a chaotic, inhospitable world—desperation begets excess” (Alexander, 1990, p. 19). Alexander translated the experimental lesson of Rat Park into a political argument: transformation at the level of the individual depends on transformation at the level of the environment. Rat Park thus moved beyond the laboratory and into the terrain of social policy, where it functioned as a politically operative model for reform. At the turn of the twenty-first century, shifts in drug policy in Vancouver would bring elements of this reformist framework into practice, testing the limits of environmental intervention as a means of addressing addiction.

Anthropological Critique

Building on his psychological, sociological, and historical critiques, Alexander extended his analysis into an anthropological register as policy-centered interventions proved insufficient. By 2001, aspects of the policy framework Alexander advocated had been implemented in Vancouver through the city’s “Four Pillars” drug strategy centered on harm reduction, prevention, treatment, and enforcement. Yet, in 2006 five years after the framework was implemented, Alexander argued that “there is no reason to think that the prevalence of addiction to drugs, alcohol or anything else has decreased under the Four-Pillars regime” (Alexander, 2006, p. 119). Despite expanded harm-reduction services and treatment programs, he noted rising incidence of drug use, limited uptake of medical dispensation programs, and persistent rates of HIV and other infectious diseases (Alexander, 2006, p. 119). For Alexander, these outcomes necessitated a move “beyond the Four-Pillar Approach” (Alexander, 2006, p. 119), not toward an alternative policy framework but toward a deeper interrogation of the socio-cultural conditions producing addiction.

Drawing on an anthropological understanding of human life as embedded within systems of meaning (Geertz, 1973), Alexander expanded his Adaptive Model of Addiction into a broader Dislocation

Theory of Addiction. Turning to Erik Erikson's concept of *psychosocial integration*, he described the conditions under which individuals achieve identity, belonging, and meaningful participation in social life (Alexander, 2000). The failure to achieve this integration resulted in what Alexander termed "dislocation", defined as the "social breakdown" of culture, tradition, religion, and communal forms of life. He argued that such dislocation is systemically produced by free-market capitalism, an economic system founded on the principle of the "unencumbered pursuit of wealth," which privileges the maintenance of a "free market in labour, land, currency, and consumer goods" (Alexander, 2000, p. 502) at the expense of forms of life that sustain psychosocial integration. In this way, Alexander collapses two distinctions. First, the boundary between systems and culture, where capitalism becomes the dominant organizing condition of social life, the dominant "culture" structuring the lifeworld in which individual integration is enabled or foreclosed upon. Second, the boundary between the individual and society: as he argues, "human beings are not psychologically self-sufficient," and "interdependence with society creates identity" (Alexander, 2000).

Addiction thus emerges as a means of adapting to dislocation, or what Alexander termed a "poverty of spirit", as he believed addiction is "the best substitute for a sustaining cultural, social, spiritual wholeness". He argues that when identity can no longer be generated through membership in a culture, participation in traditions, and communal pursuits, "substitute adaptations" and corresponding "substitute lifestyles fill the Eriksonian void. He gives an example of drug use as a substitute adaptation and "membership in a violent youth gang" as a substitute lifestyle, noting that "as offensive as it may be to society and to the gang members' values, it is better than no identity at all" (2000, p. 503).

Working through this anthropological framework, Alexander turned to the history of Indigenous communities in western Canada, arguing that these communities developed addictions to cope with the dislocating effects of colonialism (Alexander, 2000). Prior to European contact, Indigenous societies organized social life through stable kinship networks, spiritual traditions, and intra-community trade. After European arrival, addiction rates rose rapidly alongside land dispossession, the outlawing of ceremonial practices, and assimilation policies such as the residential school system (Alexander, 2000).

One particularly illustrative practice was the prohibition of potlatch ceremonies between 1884 and 1951 (Alexander, 2010). These practices, which centered on the redistribution of wealth and the maintenance of social bonds, stood in direct opposition to emerging capitalist economic logics and were criminalized accordingly. In this sense, dislocation was not merely cultural disruption but the outcome of colonial governance that reorganized social life in accordance with racialized hierarchies and economic imperatives. Thus, communities such as the Coast Salish in BC who generated their individual and communal sense of identity and meaning through ancient cultural practices were left dislocated, turning to gambling, alcohol, and drugs to cope (Alexander, 2000). Alexander notes that the effects of this mass dislocation persist to this day among indigenous communities in BC, yet for him this case was not exceptional but indicative of a broader historical enduring process. In his view, as free-market capitalism globalized, dislocation was no longer confined to colonized populations but had become a generalized condition of modern life, producing what he termed “The Globalization of Addiction” (Alexander, 2000).

Following the intellectual trajectory of other anti-psychiatric thinkers, the stakes and scale of Alexander’s argument intensified over the course of his career; addiction came to encompass a wide range of behaviours beyond drug use and to impact not only individuals but entire communities and populations. And at the same time, his analysis broadened through a layered set of critiques—psychological, sociological, historical, and ultimately anthropological—each building upon and extending the former, resulting in a stratified account of addiction. Within this increasingly interdisciplinary awareness, Alexander’s analysis expanded without abandoning its core commitments. He remained opposed to medicalized and/or physiologically centered accounts of addiction, rejecting what he described as the “futile debate about whether addiction is a ‘criminal’ or a ‘medical’ problem” (Alexander, 2000, p. 520). At the same time, he was committed to a psychosocial framework, arguing that addiction is “a political problem” (Alexander, 2000, p. 520) with psychological ramifications for individuals. Crucially, this commitment rested on an understanding of psychology as a social science rather than a medical one, a distinction that echoes the disciplinary tensions Alexander identified in

1981—tensions that continue to animate debates over the objects and methods of psychological inquiry (Goertzen, 2008; Green, 2015).

While articulating the dislocation theory in 2000, Alexander's position appeared to contradict his earlier reform proposals, as he stated that "society cannot 'treat' or 'harm reduce' its way out of addiction any more than it can 'police' its way out of it" (Alexander, 2000, p. 520). This marked a change in Alexander's political orientation—from reformist to abolitionist. He called for the "rejection of overwhelming involvement with free-market principles" (Alexander, 2000, p. 524). Free-market principles, he argued, were accepted "either enthusiastically, grudgingly, or unconsciously" across the political spectrum (Alexander, 2000, p. 522), leading him to conclude that society was suffering from "civil myopia"—an "apolitical denial of reality" that had become "an unsustainable luxury" (Alexander, 2000, p. 522). This widespread, uncritical acceptance allowed what Alexander characterized as "the current addiction of politicians to free-market ideology" to persist without scrutiny, which he warned "may, in the end, prove more catastrophic than the addictions that are seen on downtown streets" (Alexander, 2000, p. 523–524). Abolition was therefore necessitated across all levels of Alexander's analysis. The language of "rejecting an overwhelming involvement" suggested not only the abolition of economic and political systems but also the abolition of the forms of thought and subjectivities through which they are sustained.

Taken together, the movement from the Adaptive Model to the Dislocation Theory does not mark a conceptual break from Rat Park but an expansion of scale. The pattern Alexander named "dislocation" was first rendered visible in the laboratory, where rats were removed from their social and environmental worlds and confined within experimental regimes structured by the priorities of experimental science. In this sense, the dislocation of human populations mirrors the treatment of the laboratory rat, as the conditions imposed on the rat were structured by broader scientific and cultural frameworks that rendered the animal governable and subject to experimentation. Seen in this light, the laboratory itself functioned as a microcosm of the broader social conditions Alexander would later critique. By the 2000s, Rat Park

was no longer simply an experimental intervention but a metaphor for the socio-cultural environments that fail to sustain life and, in doing so, produce addiction across the globe.

The Utopian Turn

By 2010, Alexander's interpretation of Rat Park had reached a limit. As his critique expanded across psychological, sociological, historical, and anthropological domains, Rat Park ceased to function as a locus of political solutions and instead became a device for diagnosing the conditions of modern life that produce addiction. This marked a shift away from the question of how to construct environments capable of sustaining psychosocial integration toward the plausibility of escaping the dislocating conditions that structure modern life. In the 2010 article "Addiction: The View from Rat Park," he reflected on the experiment asking "Why is there currently a flood of addiction to drugs and many other habits and pursuits? People do not have to be put into cages to become addicted – but is there a sense in which people who become addicted actually feel 'caged'?" (Alexander, 2010) This language echoed earlier anti-psychiatric critiques of the "great confinement," through which scholars such as Michel Foucault interrogated how deviant populations were held captive within institutional and social systems (Foucault, 1965; Scull, 2015). Where these critiques treated asylums as the primary site of confinement, Alexander extended this logic beyond institutions, suggesting that modern society itself had become a form of confinement—an "invisible cage" (Alexander, 2010).

In this moment, Alexander's political orientation shifts: no longer reformist or abolitionist, his critique leans toward a more fatalistic orientation. As Michel Foucault suggests in "What is Critique?", there is "a critical attitude that is quite specific to modern civilization" which "offers a view over a domain that it would like to police but where it cannot set the rules" (1978/2007, p. 20). Alexander's critique thus enters a Foucauldian mode, as if one can no longer hope to escape the invisible cage that is modernity; the task of critique becomes not transformation but the exposure of modernity as a system of confinement—pervasive and totalizing rather than localized or exceptional. In this sense, Alexander's interpretation of Rat Park in the 2010s produces a view of modernity and addiction so expansive that it repositions Rat Park not as a practical model of reform but as a conceptual device to think with, what

Foucault might describe as “an instrument, a means to a future or a truth that it can never know and will never be” (1978/2007, p. 20).

Rat Park thus transformed from an experimental study in the late 1970s into a political thought experiment by the early 2010s. Under this interpretation, its central insight—that environment shapes patterns of drug use—no longer functioned as a practical guide for intervention but became the basis for a broader critique of modern society itself. Modernity had become the environment under scrutiny, and the project of “civilizing” the addict now required a reorganization—or “recivilization”—of society. This tension was not unique to Alexander. In 1948, B. F. Skinner’s utopian novel *Walden Two* imagined a “civilized” society organized through behaviourist principles, free of persistent social and behavioural problems. Similarly, Alexander’s theory of dislocation suggested that overcoming addiction would require a society structured around humanistic principles of psychosocial integration, in which meaning, belonging, and identity were prioritized. In this sense, a human equivalent of Rat Park approached the status of a utopia: what scholars of utopian literature describe as a “good place” that is also “no place,” a vision of a radically different society that can be imagined but not materially realized (Sargent, 2016, pp. 184–185). The utopian turn thus marks the point at which Alexander confronts the structural limits of scaling his psychological framework onto the material conditions of modern life.

The utopian limit of Rat Park was not simply a late theoretical development but was embedded in its scientific life. A 2020 review of the study’s numerous replications over the 40 years since its publication concluded that “successful direct replication of the experiments has neither occurred nor should further attempts be made” (Khoo, 2020, p. 2). One of the primary barriers to replication was the enriched environment itself, which departed so radically from standard laboratory design that direct replication was methodologically untenable (Petrie, 1996; Gage and Sumnall, 2019). In this respect, Rat Park’s scientific life resembled the very definition of utopia: a good place that had no place within the empirical practices of experimental psychology. Yet despite this, the study proved highly generative at a conceptual level, with extensive literature reproducing the protective effects of social and environmental

enrichment. As the review concludes, “The Rat Park studies are far more reproducible conceptually than methodologically” (Khoo, 2020 p. 7).

This tension between direct and conceptual reproducibility in Rat Park’s scientific afterlife prefigured the limits Alexander would later encounter at the level of modern society. The experiment demonstrated the plasticity of addiction under idealized environmental conditions, yet within both the methodological constraints of laboratory science and the socio-political constraints of modern society, such conditions could not be reproduced. As utopian scholar Fredric Jameson argues, the political function of utopian thinking lies less in presenting realizable programs than in exposing the “mental and ideological imprisonment” (2007, p. xiii) imposed by existing social arrangements. In this sense, Rat Park’s scientific and political limits converge, both revealing the structural limits of the systems within which solutions to addiction must be realized. In other words, the study was both scientifically and socially irreproducible. Rather than pointing to an attainable “elsewhere,” Rat Park’s utopian vision exposes the dystopian conditions of modernity. The rat remains confined within the laboratory cage, just as the addict remains confined within the “invisible cage” (Alexander, 2010) of modernity.

By the 2010s, Rat Park had evolved from a psychological critique of addiction into an interdisciplinary, layered critique of modernity itself—one so expansive that it exceeded its own political horizon in reaching its prefigured utopian limit. Yet subsequent movements did not take up Rat Park at this point of limit. Rather than engaging Alexander’s later, more fatalistic diagnosis of modernity, they returned to an earlier moment in his thought, mobilizing Rat Park as a resource for intervention. Echoing Alexander’s reformist orientation in the 1980s and early 1990s, they mobilize the study within specific domains of intervention—enrichment, harm reduction, and decriminalization—targeting the social, educational, and regulatory conditions that shape drug use rather than modernity itself. In doing so, these movements take up not Rat Park’s utopian limit, but its utopian impulse—the possibility that environments can be reshaped to combat the growing problem of addiction.

The Traveling Rat: The Afterlives of Rat Park

Alexander was not the only person to assign the Rat Park experiment a political interpretation. Starting in the early 2010s, a number of social movements and policymakers critical of the ill effects of abstinence and criminalization approaches associated with the 1980s War on Drugs turned to Rat Park to imagine alternative ways of configuring substances, users, and society. These movements shared much in common with Alexander's reformist project of the 1980s and 1990s, particularly in their efforts to transform drug policy as a means of reshaping socio-political environments. In this way, they selectively stabilized not only Rat Park but an earlier stage of Alexander's political vision, effecting a temporal arrest of his evolving argument. In doing so, they reproduced his reformist commitments while interrupting its later development. This produced an incongruence between Alexander's understanding of Rat Park in the 2010s and 2020s and the ways the study was mobilized during that same period.

Among the most prominent and influential audiences for Rat Park were those working in prevention, harm reduction, and decriminalization. The following sections examine how each movement translates Rat Park's environmental logic into a distinct domain of intervention: education, risk management, and legal reform.

Enrichment

One political interpretation of Rat Park emerges within the enrichment movement. This approach sought to *prevent* future drug use through early-life intervention by translating the study's environmental logic into an educational curriculum. The enrichment movement first took shape in the 1960s Great Society programs in response to concerns raised by psychologists and policymakers who argued that children raised in impoverished environments lacked the cognitive and emotional stimulation necessary for healthy development (Raz, 2013). In response, supplemental educational programs, such as Head Start, were introduced to compensate for what were perceived as "culturally deprived" home environments (Raz, 2013). In these programs, children from low-income families received supplemental education prior to entering school, framed as a preparatory intervention to address presumed cognitive deficits and ensure parity with more advantaged peers (Kagan, 1992). The enrichment movement was a

cornerstone of the larger War on Poverty initiated by United States President Lyndon Johnson in 1964, aiming to combat rising poverty rates in part through educational and vocational initiatives (Raz, 2013). Many scholars have since critiqued the problematic logic behind the War on Poverty and enrichment movement, noting their deep entanglement with racialized and class-based assumptions about the intersection of poverty, home life, and intelligence (Raz, 2013).

The governing rationale that deprived environments produced deficient children in need of reform reflected a broader historical slippage, as “progressive” anti-poverty programs of the late 1960s gave way to more “regressive” anti-crime approaches in the 1970s. As historian Nic Ramos (2019) demonstrates, community-based interventions in the 1970s initially framed as efforts to promote social welfare in Black communities became increasingly entangled with the logics of policing, incarceration, and racial capitalism, mobilized to manage the social consequences of deinstitutionalization rather than eliminate them. In this shift, structural inequalities were recast as problems of individual conduct, transforming programs designed to support marginalized populations into sites of management and regulation. This approach to managing crime through community intervention became entrenched by the 1980s, as War on Drugs educational initiatives such as DARE embedded police within schools as drug educators, framing drug use as a matter of personal responsibility rather than a product of broader systemic inequities such as racialized surveillance and incarceration practices (Felker-Kantor, 2024). In the 2010s, efforts to reform drug education attempted to reclaim a “progressive” orientation by emphasizing the role of environmental factors in drug use; yet these programs reproduced the underlying logic through which systemic issues were rendered as matters of personal responsibility and individual conduct.

In the early twenty-first century, prevention-oriented researchers and educators reinterpreted Rat Park politically, translating its environmental logic into drug education curricula and pedagogical practice. Earlier approaches to drug education, such as DARE, founded in 1983, framed drug use as a matter of ignorance and insufficient education (Felker-Kantor, 2024). Through fear-based messaging and the promotion of abstinence, children were held responsible for policing their own drug use. Within this formulation those who succumbed to drug use were rendered ineducable, incapable of enacting the self-

surveillance and self-control required to “just say no” (West and O’Neal, 2004; Werb et al., 2011). In Canada, this strategy was reinforced at the level of political discourse in the early 2000s when Prime Minister Stephen Harper introduced the National Anti-Drug Strategy, reviving the broader War on Drugs ideology (Government of Canada, 2007; Marshall, 2015). By the mid-2010s, however, the escalating overdose crisis and rising incidence of drug-related deaths across Canada, particularly in British Columbia, exposed the limitations of these approaches (British Columbia Coroners Service, 2015). Within this context, the need for a different approach became increasingly apparent, prompting a shift from fear-based drug education to skill-based drug literacy. Researchers and educators subsequently incorporated Rat Park into drug literacy lessons, drawing on its environmental logic to teach how social and environmental conditions shape drug use.

Within drug literacy education, Rat Park was transformed into a pedagogical tool, operationalized through interactive activities that prompted students to examine how their environments shape drug use. Unlike previous approaches, drugs were not framed as inherently good or bad, but as complex substances embedded in environmental and social contexts that shape the risks and benefits of use. One contemporary example is the iMinds drug literacy curriculum, which includes a lesson titled “Rat Park” (Stockwell et al., 2010), designed for students in grades 4–8. Through reimagined curricular materials such as the “Rat Park” lesson, iMinds redefined the goal of drug education, shifting away from instilling fear and towards cultivating skill-based competencies. This pedagogical shift was operationalized most clearly in the classroom activity titled “Human Park” in which students were invited to examine their school or neighbourhood, identify elements of an enriched environment, and incorporate these into constructed three-dimensional models of a “Human Park.” Questions such as “What are some things in our community that might make people feel isolated or caged?” and “Why do you think the rats in cages behaved differently from those in Rat Park?” (iMinds, 2016, p. 4-5) were included to guide children's exploration of their community environments.

The “Human Park” activity translated Alexander’s experimental logic into a pedagogical competency: environmental discernment—the ability to identify which elements may be enriching or constraining in one’s own life. Just as Alexander made deliberate judgments in designing Rat Park—selecting features such as climbing poles and exercise wheels to produce an enriched, idealized environment—students were guided to envision a “Human Park” of their own, identifying what constitutes a “park” as opposed to a “cage” in their own lives. In this way, iMinds translated Rat Park into a pedagogical framework that equipped young people with the skills to understand how environments shape drug use. While the War on Drugs emphasized refusal and avoidance to maintain abstinence, drug literacy lessons such as iMinds cultivated skills of inquiry and analysis to engage with complex social and environmental contexts (Stockwell et al., 2010). Yet, the slippage from social welfare to community policing observed in prior decades lingered. In this activity, children were tasked with diagnosing their environment and regulating their own conduct, expected to “police” not only their own behaviour but also the social environments in which they lived.

Not only did iMinds transform drug education in schools, it also challenged the figure of the ignorant child—the future addict—produced by the War on Drugs discourse. Children were imagined as ineducable and therefore inherently susceptible to addiction, a formulation that justified fear-based educational approaches and aggressive policing tactics (Kelly, 2003; Clark, 2017). By introducing drug literacy into educational curricula, initiatives such as iMinds cultivated a form of readiness, teaching young people to anticipate, interpret, and respond to drug-related situations. Enrichment thus renders the future addict plastic: no longer ignorant and ineducable, but intellectually capable of developing the skills necessary to navigate drug use. Here, the child appears not as an “at-risk” subject or passive victim of environmental conditions, but as a risk-aware actor equipped with skills to navigate drug use environments. This transformation mirrors an earlier reconfiguration within experimental psychology, in which the rat was recast from an untrainable urban pest into a learning organism capable of navigating its environment. In this sense, drug literacy participates in a similar transformation of the perceived educability of children: young people are no longer treated as incapable of understanding the situated

nature of drug use and making informed decisions. Yet this shift does not abandon the logic of self-governance but rather generalizes it, as drug literacy reframes all children as capable of—and therefore responsible for—managing their own drug use. While War on Drugs discourse stratified the capacity for self-policing, drug literacy’s universalization within Canadian educational curricula presumed a universal capacity for self-policing, extending that burden across populations regardless of differing social conditions.

While advocates of drug literacy frequently invoked Rat Park as evidence that enrichment through education can prevent harmful drug use, Alexander did not fully embrace this interpretation. Although Alexander was at times sympathetic to the idea that individuals could become “people as masters of their own development”, he emphasized that such mastery depends on access to “welcoming, supportive environments” (Alexander, 1987, p. 61). However, for Alexander, access to such environments is structurally constrained by capitalist systems that generate and sustain socio-economic stratification in which segments of the population are confined to deprived environments. Therefore, lessons as iMinds Rat Park activity prompt young people to seek out and inhabit a “Human Park,” thus implying supportive environments are universally accessible and attainable.

This dynamic reflects a broader governing logic often described as the individualization of structural problems, in which responsibility for navigating socially produced conditions is displaced onto individuals (Rose, 1999). In developing this critique, Alexander frequently turns to processes of colonialism, particularly assimilationist schooling practices in Canada, arguing that—like War on Poverty enrichment logics— they address deprivation through individual reform (Alexander, 2001; Alexander, 2010). Rather than transforming the conditions in which young people live and develop, it requires them to adapt, even when these conditions are recognized as harmful. Herein lies the fundamental tension between Alexander’s theory and the dogma of drug literacy. While drug literacy positions adaptation as a protective outcome of education, Alexander understands it as the very mechanism through which addiction emerges. For Alexander, drug use is not the product of educated decision-making but a necessary adaptation to harmful conditions. Like the caged laboratory rat, young people’s drug use is less

a matter of informed choice than of circumstance. In this sense, the educationally enriched subject is educated about drug use but not insulated from the environmental conditions that shape it.

Harm Reduction

A second political interpretation of Rat Park emerged within the harm reduction movement, a public health-oriented approach to drug use that prioritizes mitigating risks such as overdose, disease and death. Although such programs first emerged in Europe during the 1970s and 1980s, the term “harm reduction” entered North American drug policy discourse in the mid-1990s, when policymakers began shifting priorities away from “use reduction” and toward “harm reduction” (Marlatt, 1996). Use reduction strategies, dominant during the War on Drugs, aimed to suppress drug supply and demand by criminalizing manufacturers, distributors, and users. By contrast, harm reduction developed in response to rising rates of drug-related infectious disease and death in the 1980s and 1990s, particularly in the context of the HIV/AIDS crisis (Marlatt, 1996). Recognizing that drug use persists despite punitive frameworks, harm reduction redirected policy toward reducing health risks rather than enforcing abstinence. While the concept circulated in policy discourse from the 1990s onward, many of the most influential initiatives emerged through grassroots advocacy by people who use drugs and community organizations (Marlatt, 1996). These initiatives emphasized accessible, low-threshold services designed to minimize harm while supporting well-being (Marlatt, 1996). In this sense, harm reduction functions both as a policy framework and an environmental intervention, embedding social and material supports within drug-use environments to mitigate the risks associated with drug use.

Proponents of the harm reduction movement drew on the analogy between standard laboratory cages and “Rat Park” to conceptualize the difference between drug use environments under prohibition policy and those created through harm reduction practices. One organization to mobilize Rat Park in support of harm reduction was DanceSafe, the first not-for-profit drug testing kit manufacturer in the United States. Founded in 1998, DanceSafe emerged from the electronic dance music scene, seeking to address the risks associated with the widespread use of substances such as MDMA, ketamine, and GHB at rave events (DanceSafe). The rave culture of the 1980s exemplified the kinds of environments created

by prohibitionist drug policy, as events were often sequestered into covert venues, abandoned warehouses, remote buildings, and other marginal spaces in an attempt to limit visibility and prosecution (Wier, 2000). Harm reduction scholar Tim Rhodes (2002) terms these “risk environments”: hidden, poorly resourced settings characterized by deprivation, concealment, and isolation that heighten the risks associated with consumption.

Rather than attempting to suppress drug use within these spaces, the organization aimed to make existing drug cultures safer. DanceSafe volunteers travelled to rave events across the United States, providing free on-site drug checking services and sterile supplies. Their peer-to-peer volunteer setup positioned volunteers not as medical professionals but as fellow drug users and champions of harm reduction belonging to the same community. Drug-checking kits functioned as key harm-reduction technologies, allowing users to test substances for contamination that could cause unwanted side effects or overdose. Through this combination of peer-based community presence and drug-checking technologies, DanceSafe introduced both social support and practical resources into environments where drug use had previously occurred under hidden and unsafe conditions.

DanceSafe activists mobilized Rat Park to frame and justify these practices. In an article titled “It’s Not the Chemicals, It’s the Cages” (DanceSafe, 2017) on the Dancesafe website, the study was framed as a challenge to what they described as the deeply ingrained belief that “drugs cause addiction,” a premise that had long informed War on Drugs policy. Invoking the study, they stated “it wasn’t the drug that was causing addiction, it was the environment,” a conclusion that supported a shift away from prohibitionist approaches to drug use. Harm reduction initiatives such as DanceSafe therefore sought to transform drug-use environments in two ways: by shifting the location of drug use from hidden, isolating settings to visible, community-oriented settings, and by introducing resources that reduce the risks associated with consumption. Importantly, these interventions do not attempt to reduce or eliminate drug use but instead alter the conditions under which it occurs by placing individuals in supportive environments equipped with harm-reduction technologies. In this sense, DanceSafe reconfigured the

“caged” environment of drug use by replacing isolation with community and deprivation with access to care.

Not only did DanceSafe and other Harm Reduction initiatives alter the environment of drug use, they also challenged the figure of the drug user cast by media and medical authorities during the War on Drugs. Imagined as compulsive and self-destructive, drug users were presumed to be indifferent to risk and incapable of self-regulation. By introducing drug-checking technologies into rave environments, the organization altered the conditions under which drug use occurred, enabling users to test substances for contamination and modify their consumption practices if desired. Contemporary studies support this assumption: in one festival drug-checking program, 95% of participants reported they would discard their drug if adulterants were detected (Valente et al., 2019). Harm reduction thus renders the addict plastic: no longer inherently compulsive and self-destructive, but capable of reflection and risk assessment within supportive environments. This self-protective approach to drug use undermines the War on Drugs assumption that “addicts” were incapable of regulating consumption and therefore required abstinence-oriented, use-reduction policies as the primary means of intervention. In this sense, harm reduction participates in a broader transformation of the cultural script of the addict: just as experimental psychology reconfigured the rat from urban vermin into a learning organism capable of adaptation, harm reduction reconceives the “addict” as a plastic subject capable of implementing new self-protective and risk management strategies into established patterns of use.

While harm reduction advocates frequently invoked Rat Park as evidence that safer environments reduce the harms associated with drug use, Alexander himself did not fully embrace the movement’s political interpretation. Harm reduction’s acceptance of drug use reflects a broader assumption that the socio-political conditions producing drug use will persist and therefore prioritizes minimizing its risk through interventions such as drug checking, needle exchange, and naloxone distribution. From Alexander’s perspective, however, such strategies mitigate the effects of addiction without addressing the deeper question of why people use drugs in the first place (Alexander, 2006; 2010; 2022). Within his broader theory of dislocation, Alexander offers an answer to this question: addiction emerges from the

social conditions of modernity and neoliberal capitalism that fragment community life. If addiction is attributed to these globalizing forces, then transforming local drug-use environments addresses only part of the problem, since these settings represent a microcosm of the broader social milieu from which addiction emerges. In this sense, the tension mirrors Rat Park itself: building one “Rat Park” does not uncage the rest of the laboratory. As Alexander later reflected, the challenge of addiction extends far beyond any single policy intervention:

“Can we be as brave as the policemen who testified against the War on Drugs, decades ago, by confessing that we cannot “arrest our way out of” the addiction problem? Can we confess that we cannot therapize or theorize our way out of it either, nor overcome it with harm reduction or new drug legislation or social housing? I do not know how a world society of 8 billion people facing jet-propelled technological modernization, political chaos, and ecological disaster can function well enough that most people can put together reasonably full lives that can protect them from dangerous addictions. I do know that this question must be faced, because the dangers of mass addiction are so enormous. I propose that the task of deep social analysis and realistic advocacy is now the foremost responsibility of professionals in the field of addiction.” - (Alexander, 2022)

Decriminalization

A third political interpretation of Rat Park emerged among proponents of drug decriminalization, who mobilized its environmental logic to challenge the criminalization of drug users and displace punitive drug policy frameworks. In the late twentieth century, rising rates of intravenous drug use, infectious disease, and drug-related deaths across Europe exposed the limits of criminalization, prompting calls for alternative approaches grounded in public health rather than punishment (Hughes & Stevens, 2010). Decriminalization can be defined as “the removal of all criminal penalties from acts relating to drug demand: acts of acquisition, possession, and consumption” (Laqueur, 2014, p. 2). This shift was most prominently institutionalized in Portugal’s 2001 drug policy, in which personal drug use was reclassified from a criminal to an administrative offense, resulting in sanctioned referrals to treatment, education, and/or fines (Hughes & Stevens, 2010). However, decriminalization efforts hinged on a distinction

between the “sick” drug user in need of treatment and the “criminal” drug trafficker who remained subject to legal sanction (Hughes & Stevens, 2010). While critics highlight the limitations of bifurcated approaches, many proponents frame decriminalization as a necessary step toward restoring basic human rights, particularly by ensuring access to healthcare and non-discriminatory treatment outside the criminal justice system (Rêgo et al., 2021). In this sense, Portugal’s reform was not an isolated case but part of a broader shift across Europe and North America, where it functioned as a key reference point in debates over drug policy reform (Laqueur, 2014). From the decriminalization of cannabis in Canada in 2018 to state-level reforms in the United States and Vancouver’s 2023 decriminalization trial, policymakers drew on the Portuguese case to support a wider reorientation away from criminalization and toward public health approaches.

In the 2010s, decriminalization proponents reinterpreted Rat Park politically, translating its environmental logic into a case for the decriminalization of drugs. The analogy between standard laboratory cages and “Rat Park” symbolized the difference between punitive legislative responses to drug use and emerging treatment-based legislation. During the War on Drugs, the governing rationality was that reducing drug use was best achieved through punitive measures such as mandatory minimum sentencing; it was premised on the belief that punishment was the most effective means of behavioural regulation. Underlying this approach was the assumption that all forms of engagement with drugs constituted individuals as criminals. Yet the threshold for criminalization differed along lines of race, class, and socio-economic status (Clark, 2017). As exemplified in War on Drugs legislation such as the 1986 Anti-Drug Abuse Act, 5 grams of crack cocaine and 500 grams of powder cocaine resulted in the same 5-year sentence, reflecting how drug policy disproportionately targeted marginalized communities while affording relative leniency to more privileged groups (DeGrandpre, 2006). This emphasis on criminality obscured distinctions between personal use and large-scale distribution, while reinforcing racialized and class-based assumptions about which forms of drug use were deemed problematic. Decriminalization legislation thus emerged as an effort to restore the basic human rights of all drug users, redirecting responses from punishment toward treatment, education, and social support. Within this

framework, Rat Park functioned as a model for understanding drug use as shaped by social and environmental conditions rather than individual deviance, supporting a shift away from punishment toward reform-oriented governance.

Rat Park was thus mobilized in contemporary critiques of drug policy which aimed to demonstrate the dangers of militant punitive regimes and both the benefits and limitations of decriminalization efforts. One prominent example is the 2019 documentary “Rat Park” by Canadian filmmaker Shawn Cohen, which features interviews with Alexander and draws on his experimental findings to frame contemporary debates on drug policy. The documentary thus mobilizes Rat Park as a metaphor for society, translating the distinction between enriched and deprived environments into a comparison between policy regimes (Cohen, 2019). In the *Globe and Mail* article “What a forgotten 1970s experiment can teach us about today’s drug crisis” (Cohen, 2019) accompanying the film, Cohen makes this translation explicit arguing that Rat Park is “more than an experiment—it’s a metaphor for our society and all the misconceptions we have about drugs and the people who use them” (Cohen, 2019). Portugal’s decriminalization model is depicted as a human “Rat Park,” as the documentary follows a crack user named Tiago who has access to drug maintenance programs, harm reduction supplies, and medical care, and is able to purchase drugs without fear of prosecution. In stark comparison, the War on Drugs in the Philippines under Rodrigo Duterte is positioned as the “cage,” a violent regime in which extrajudicial killings target those suspected of involvement with drugs (Cohen, 2019). For Cohen, Rat Park functioned as a call for political re-worlding, as he argued that “the Rat Park experiment involved rats, but the bigger message for the rest of the world is that without shifting our perspective on drug policies and focusing more on the environments in which we live and want to build, the futile drug war will only continue” (Cohen, 2019).

Yet rather than presenting decriminalization as a complete solution, the film also highlights its limits: while Tiago is no longer criminalized, he remains socially and economically constrained, continuing to struggle for stability and meaningful integration. As he describes, “I know what I want, in a place where I like, I can ride my bike, do pottery... I just want to be human and treated like a human” (Cohen, 2019). As echoed by Alexander’s commentary in the documentary, the continued struggles of

people like Tiago despite decriminalization suggest “we simply cannot understand addiction without understanding the environment the person is in”, prompting the further question of “under what conditions would people develop a self-destructive addiction?” (Cohen, 2019). In this way, Rat Park is mobilized not simply to justify decriminalization, but as a tool for evaluating legislation and political regimes, exposing their insufficiency and redirecting attention to the broader conditions that continue to constrain the possibility of a fully “enriched” environment and a fully “integrated” human life.

As illustrated in Cohen’s documentary, Rat Park is mobilized to contrast punitive and decriminalized regimes, revealing an ontological shift in the figure of the “addict”—from criminal to sick—that fails to disrupt the figure of the “addict” as a pathological subject in need of intervention. What changes is not the expectation of transformation, but the means through which it is pursued. In both cases, drug use is constructed as an individualized problem to be corrected through punishment or treatment, with the ultimate goal of restoring normative functioning and reducing recidivism. As many have noted, this shift may appear benevolent, yet in Portugal for example, it is accompanied by an expansion in the number of individuals processed within the legal system, as rising drug use convictions indicate that more individuals are brought under legislative control (Rêgo et al., 2021). In this sense, the “sick” addict is not liberated but reclassified. While this reclassification renders the “addict” plastic, no longer inherently criminal yet remaining confined within legislative systems that mandate intervention and sanction. Like the rat—once figured as deviant vermin and thereby subsumed into scientific regimes as a controlled experimental subject—the “addict” is reclassified without being released, incorporated into new regimes of control that govern rather than eliminate the problem.

While advocates of decriminalization frequently invoked Rat Park as evidence that reforming drug policy could reduce the harms associated with drug use, Alexander did not fully embrace this political interpretation. In an expanded version of a presentation delivered at the Rational Drug Regulation Conference in Brno, Czech Republic (October 4–6, 2017), later published as “How to Regulate a Demon Drug” (2017), Alexander outlined his position on drug regulation and its limits. Although he acknowledged that more “rational” forms of drug regulation were possible—suggesting, for

instance, the controlled availability of lower-potency substances—he maintained that such approaches remained fundamentally limited. As he argued, “nothing we do about drugs will have any substantial effect on the majority of serious addiction problems” (Alexander, 2017), emphasizing that addiction extends far beyond substances, encompassing a wide range of behaviours including “gambling, pornography viewing, social media, shopping, hoarding, gluttony, and many, many more” (Alexander, 2017). Alexander illustrates this limitation through cases such as Singapore, where stringent drug control has coincided with high levels of gambling addiction, suggesting that regulating drugs does not eliminate addiction but displaces it into other domains. If addiction is not reducible to drugs, then the logic of regulation becomes untenable, as he asks, “is overregulation any less of a problem than under regulation?” (Alexander, 2017)

For Alexander, modern societies generate a feedback loop between dislocation and addiction that cannot be resolved through policy reform alone. While decriminalization may alter how addiction is governed, it leaves intact the conditions that produce it. In this sense, legislative solutions risk fostering what Alexander, drawing on Vaclav Havel, describes as an “illusionary truth” as he cautions, “to not speak out is to foster the comforting illusion that there is a quick fix to the problem of addiction and that we can eventually provide it” (Alexander, 2017). Rather than endorsing legislative reform as a solution, Alexander calls on addiction professionals across clinical, research, and legal domains to confront its limitations, pointing instead toward the need for far more fundamental transformations of the social conditions that sustain addiction—at times characterizing this as requiring a rupture, or even a “collapse” of the prevailing social order.

A Reformist Program for A Fatalistic Thinker

The central tension of this chapter is Alexander’s palpable discontent in the late 2010s and 2020s despite the widespread uptake of Rat Park in drug policy circles. This becomes more perplexing as enrichment, harm reduction, and decriminalization each take seriously the central insight of Rat Park that addiction is shaped by environment. A key shift in Alexander’s work helps explain this discontent, as his understanding of the factors shaping the “environment” expanded from local and regional conditions to

global systems of modernity. In the 1990s, Alexander understood the environment as politically constituted, such that changes to drug education, community practices, and policy could reconfigure the conditions under which drug use occurs. It is this framework that enrichment, harm reduction, and decriminalization take up, mobilizing Rat Park through practical reforms targeting the individual, social, and political environments in which drug use occurs. By the 2000s, Alexander came to understand that the environment as constituted by globalized forces of capitalism and colonialism, such that only revolutionary transformation could alter the conditions producing widespread addiction. This temporal misalignment between Alexander's later political orientation and the uptake of Rat Park explains his discontent, as Alexander's earlier optimism about the efficacy of practical reform predated its widespread mobilization in policy and intervention.

This distinction between revolution and reform produces a fundamental divergence in political orientation. Where Alexander calls for a rupture in the conditions of modernity—even gesturing toward the collapse and reorganization of global systems—these movements adopt a less radical stance, operating within and stabilizing the existing order. Rather than eliminating the conditions that generate dislocation, they seek to make life within those conditions more manageable. In this sense, Alexander's project imagines a world in which individuals no longer need to adapt to dislocating conditions through addiction, whereas these movements imagine a world in which adaptation, or addiction, is made easier—less dangerous, less stigmatized, and less constrained by legal or social barriers— but still necessary.

This divergence becomes most visible in how each movement reconfigures the figure of the addict within systems of governance. While Rat Park unsettled the assumption that the addict was inherently uncivilized, its political reinterpretations do not abandon the project of “civilizing” the addict but reorganize the terms through which it is pursued. In enrichment and prevention initiatives, the addict is governed through the management of ignorance, becoming a civilized drug user who avoids drug use and risk environments. In harm reduction, the addict is governed through the management of risk, becoming a civilized drug user who avoids overdose and death. In decriminalization, the addict is governed through the management of penalty, becoming a civilized drug user who is redirected away

from incarceration and toward treatment and reform. Taken together, these approaches form a tiered logic of intervention: where education fails, harm is managed; where harm persists, subjects are redirected through legal and therapeutic systems. Across these movements, the subject of addiction is transformed, but remains governable: the addict is no longer ignorant, but educated; no longer reckless, but risk-managing; no longer criminal, but reformable. In each case, the addict persists as a problem to be managed within institutional frameworks of prevention, harm reduction, and regulatory reform.

These efforts at reclassification are not neutral. They are disproportionately directed toward populations already positioned as dislocated within modern society—those marked by poverty, racialization, and social marginalization—and therefore most likely to experience addiction under conditions of dislocation. This distribution mirrors the earlier figure of the rat: an urban, diseased, and dirty subject, understood as out of place within the environments it inhabited. Crucially, this figure was never confined to the animal itself: rats were mobilized as a metaphor for urban disorder and decay, collapsing distinctions between rodents and the marginalized human populations with whom they coexisted in crowded, impoverished environments. In both cases, dislocated populations are rendered as environmental problems and are simultaneously treated as the source of disorder.

While the rat was relocated from the city and placed within the laboratory, this was not an attempt to transform the conditions of urban life, but to reshape the rat into a governable, “civilized” subject. A similar logic operates here: rather than transforming the environments that stigmatize, exclude, and isolate addicts, these interventions transform the addict, re-civilizing them so that they can be reintegrated into the existing social order. In this sense, the “re-civilization” of the addict reproduces older distinctions between civilized and uncivilized life (Mbembe, 2003), now reframed through the languages of public health, education, and policy. What changes is not the imperative to transform the subject, but the techniques through which that transformation is pursued. In this sense, the plasticity demonstrated by Rat Park becomes the terrain upon which the addict is repeatedly reconstituted and governed. Against this, Alexander’s interpretation points in a different direction: if addiction is an adaptation to dislocation, then it is not the individual who must be re-civilized, but civilization itself. The task, therefore, is not to better

manage the addict within modernity, but to transform the conditions of modernity that produce dislocation and necessitate addiction.

The “Cage” of Modernity

This thesis aimed to understand the failures of drug policies rooted in physiological models of addiction by reconstructing the impetus, execution, and afterlives of the Rat Park study, widely understood as foundational to alternative, critical psychosocial models. Central to this analysis is the political nature of Bruce Alexander, the study itself, and the subsequent uptake. Conducted amid the intensification of the War on Drugs, Rat Park functioned less as a positivistic account of addiction than as a politically operative model of critique and reform. As the study moved from the “laboratory to life” (Rutherford, 2009), it appeared to support shifts in how addiction was defined, its attributed causes, and elements of the surrounding policy framework. Yet these shifts did not displace existing structures. Instead, they reclassified the “addict” within new modes of governance. In line with Alexander’s theoretical framework, the study and its uptake ultimately reveal not the possibility of a world free of addiction, but the social conditions that necessitate addiction as an adaptive response to modern life. To demonstrate this, this thesis reconstructed the study’s historical emergence, experimental design, and subsequent uptake.

To carry out this work, Rat Park was first situated within its historical context to explain the conditions under which it emerged as a desirable experiment for Alexander in late 1970s Vancouver. Scientific knowledge, this thesis argued, is not produced in isolation, but is shaped in part by the social, political, and intellectual environments of the researcher. Through a biographical reconstruction of Alexander’s early career, it demonstrated that two shifts were central to the emergence of Rat Park: his move from the United States to Canada, and his move from the University of Wisconsin to Simon Fraser University. These transitions marked a shift from conditions of political and academic constraint to relative openness, in which addiction appeared as a pressing social problem and unconventional experimental approaches were institutionally supported. In this sense, Rat Park was not simply an experimental innovation, but the product of Alexander’s reconfigured environment that made such a study both desirable and possible.

Chapter 1 then examined the conditions that made Rat Park legible as a model of addiction, defining the study as both a moment of continuity and rupture within 1970s experimental psychology. To advance this claim, the chapter proceeded in three steps, examining (1) the rat's multiple histories, emerging from both its cultural and scientific lives, (2) how the incongruity between these histories renders the rat a plastic organism capable of transformation, and (3) how Alexander mobilized this plasticity in the design of Rat Park, drawing on it to give the study its symbolic meaning and explanatory force.

First, it reconstructed the cultural and scientific life of the rat to show how the model organism itself carried historical and symbolic weight. The cultural life of the rat was examined through New York Times reporting from the early twentieth century, which established three core assumptions: that the rat was diseased, dirty, and urban. In contrast, its scientific life was traced through early experimental psychology, where these assumptions were reconfigured and the rat emerged as an ideal model of learning. This analysis demonstrated that the rat was not a neutral experimental subject, but a historically constructed figure shaped by both cultural meaning and scientific practice.

Second, the chapter argued that the intersection of these cultural and scientific histories produced the figure of the “plastic rat,” an organism capable of transformation and change. This plasticity was central to the logic of Rat Park, as it provided both symbolic and experimental grounds for drawing parallels between the rat and the human “addict.” On this basis, the chapter showed that Alexander mobilized the rat's plasticity to challenge the assumption that addiction is a fixed condition, instead demonstrating that behaviour is shaped by environmental conditions and therefore open to change.

Third, the chapter demonstrated how Alexander rendered this plasticity visible through a reconfiguration of experimental design. Rat Park was positioned as a synthesis of two dominant experimental paradigms: the physiological paradigm of addiction, which located addiction within neurochemical processes, and the ecological paradigm, which emphasized the role of environmental and social conditions in shaping behaviour. By redesigning the experimental environment—moving from isolated Skinner boxes to a socially enriched enclosure—Alexander altered the conditions under which

drug use occurred and thus the resulting drug use behaviours themselves. This methodological shift produced conclusions that diverged from dominant understandings of addiction, showing that drug use is contingent on environmental arrangements rather than solely on pharmacological effects.

Taken together, these arguments establish that Rat Park did not simply introduce a new finding but reconfigured the experimental and conceptual foundations of addiction research, thus relocating its cause from the individual body to the environment.

Chapter 2 examined how Rat Park was mobilized in policy discourse, addressing the tension between Alexander's late-career dissatisfaction and the widespread uptake of Rat Park in policy circles during the early twenty-first century. To explain this tension, the chapter proceeded in three steps, examining (1) the study's unexpected rise to prominence, (2) Alexander's evolving political interpretation of the study, and (3) its uptake within policy and reform movements.

The chapter begins by establishing that Rat Park was an unexpected success of the early twenty-first century. The study's entry into public consciousness is traced to the publication of Lauren Slater's 2004 book. This publication is framed as marking the movement of Rat Park from a largely disciplinary context within behavioural pharmacology into popular and public discourse. By the 2010s, the study had achieved widespread visibility, appearing across platforms such as the New York Times, the BBC, and TED Talks. Of particular importance to this project was its uptake within policy circles, where Rat Park was repeatedly mobilized as evidence that environmental conditions shape patterns of drug use. This thesis demonstrated that, in moving across these domains, Rat Park did not retain a single fixed meaning but instead acquired multiple "afterlives," as it was taken up to support divergent—and at times competing—political projects. In this sense, the study emerged as a politically plastic object, traveling across different sites of intervention, or what this thesis conceptualizes as distinct "environmental imaginaries" within drug policy discourse.

To reconcile this success with Alexander's dissatisfaction, the chapter then undertook a reconstruction of Alexander's political interpretation of Rat Park. The central analytical claim developed in this section is that Alexander's interpretation of Rat Park constitutes an anti-psychiatric critique of

addiction. This classification is based on the demonstration that, like anti-psychiatric thinkers of the 1960s and 1970s, Alexander rejected the medicalization of addiction and instead located its causes within social and political conditions. On this basis, he defined addiction not as a disease located within the individual but as an adaptive response to environmental circumstances. At the same time, this thesis showed that Alexander did not simply reproduce anti-psychiatric thought but reconfigured the central object of critique and the methodologies through which it can be explored. In this sense, Alexander's work both retains and reconfigures core elements of the anti-psychiatric tradition. The theme of plasticity threaded throughout this portion of the work as well, as it is demonstrated that Alexander's critique did not ossify but continually evolved throughout his career.

Through the reconstruction of Alexander's neuro-physiological reductionism critique, it is revealed that his understanding of the "environment" expanded in scope over the course of his career. This expansion is termed as an increasing interdisciplinary awareness as Alexander layered psychological, sociological, historical, and anthropological perspectives to develop a progressively more expansive account of addiction and its causes. In his psychological work of the early 1980s, the problematic environment was located within addiction science itself. In his subsequent sociological analyses of the late 1980s, it shifted to rearing conditions and proximate social environments. In his historical critiques of the 1990s, the environment was redefined as one structured by punitive drug policy. By the 2000s, this framework expanded further, as the environment was understood as global in scale, shaped by the political and economic forces of capitalism and colonialism. This expansion in scope was accompanied by a corresponding shift in Alexander's political orientation. Prior to the 2000s, his work retained a reformist orientation, grounded in the belief that interventions within existing social and political systems could reconfigure the conditions of drug use. By the 2000s, however, this position shifted in an increasingly abolitionist direction, as Alexander came to argue that meaningful change could not be achieved through reform within existing structures but required the breakdown or collapse of global systems themselves.

By the 2010s, this trajectory culminated in a utopian turn, marking a further transformation in both Alexander's analysis and the status of Rat Park. What began as a psychological critique of addiction developed into a fatalistic diagnosis of modernity—one so expansive that it exceeded the scale at which intervention could be meaningfully enacted. This thesis conceptualized this point as Rat Park's prefigured utopian limit. At this limit, the possibility of political intervention receded, as changes to scientific, social, or policy frameworks were no longer understood as adequate to address the conditions producing addiction. This analysis demonstrates that it was not only Alexander's political orientation or interdisciplinary scope that changed, but also the function of Rat Park itself. Across this trajectory, the study moved from a politically operative model of reform to a political thought experiment, in which the possibility of achieving a "Rat Park"—an environment capable of mitigating addiction at a global scale—could be imagined but not realized.

The chapter then examined how Rat Park was taken up within policy and reform movements in the early twenty-first century to assess how these interpretations measured against Alexander's critique. The central argument developed in this section was that, through these diverse uptakes, Rat Park emerged as a politically plastic object, acquiring multiple "afterlives" through its mobilization across different sites of intervention. Three primary domains were examined: enrichment and prevention, harm reduction, and decriminalization. In each case, Rat Park was mobilized to support the claim that drug use is shaped by environmental conditions. Within educational contexts, the study was used to challenge fear-based drug education and to promote skill-based drug literacy approaches that emphasize the socially and environmentally situated nature of drug use. Within harm reduction discourse, it supported the implementation of public health-oriented interventions designed to reduce risk and promote safer patterns of use. Within debates on decriminalization, Rat Park was used to critique punitive policy frameworks and to demonstrate how criminalization produces environments that sustain drug use. Taken together, these interpretations demonstrated that Rat Park did not produce a unified political program but instead enabled multiple and sometimes competing reform agendas, thereby demonstrating its plasticity as a political object.

Alexander's movement from laboratory rats to social policy reveals both the strengths and limitations of psychosocial critiques of addiction. The detour through "rats" was necessary insofar as the epistemic authority of experimental psychology legitimized Alexander's critique of dominant neurophysiological models. Yet this authority depended upon the very experimental traditions, institutional structures, and positivistic systems of knowledge production that Alexander increasingly came to critique throughout his career. Similarly, Rat Park achieved visibility not outside modernity, but through its machinations. The study's cultural purchase hinging on "big science" (Ankeny and Leonelli, 2011), the systems of scientific authority, publication, and commercialization that Alexander increasingly came to critique throughout his career. In this sense, Alexander's reliance on the rats and their epistemic value in 20th century psychology does not solve the problems of modernity but reproduces them, begging the question whether psychosocial theories can emerge independently of the institutional and economic structures they seek to contest.

I believe this contradiction points to how Alexander's late-career dissatisfaction emerged not only from the divergence between a reformist field and a fatalistic diagnosis of its limits, but also from the dissonance between his political vision and the epistemological, institutional, and economic privilege through which his vision was rendered knowable. As movements of enrichment, harm reduction, and decriminalization mobilized Rat Park to pursue incremental reform within existing systems, Alexander, by 2022 and after nearly half a century studying addiction, had come to reject the premise that such systems could be meaningfully improved. This thesis demonstrates that addiction, as Alexander ultimately theorized it, is an adaptive response to the dislocating conditions of modernity, and that as long as those conditions—capitalism, colonialism, and the broader organization of social life—remain intact, a field oriented toward reform has no jurisdiction over the causes it seeks to address. In this sense, the promise of addiction as a solvable problem begins to collapse, undermining the reformist impulse that animated both Alexander's earlier work and the field that took it up.

Rat Park, once a model for reform, becomes a demonstration of the futility of reform that exceeds the bounds of policy, practice, and disciplinary knowledge. What remains is not the possibility of eliminating addiction, but its ongoing management, through which the “addict” persists as an eternally governable subject to be “civilized” and transformed within systems that cannot themselves be transformed. Like the rat, the addict is not liberated but continually reclassified and reconfigured across systems of governance, where they are perpetually understood as the disease within modernity rather than a symptom of it. It is this recognition that marks Rat Park with a profound pessimism. A world free of addiction thus becomes utopian: a good place that has no place within the “cage” of modernity.

Reflecting on this work, Alexander’s conception of the “cage” positions modernity and capitalism as inseparable, rendering modernity ultimately unsalvageable. The “cage” metaphor comes from Max Weber’s (1864-1920) *The Protestant Ethic and the Spirit of Capitalism* (Weber, 1905), more specifically Talcott Parson’s translation of it into English. The “iron cage” of capitalism metaphor from Parson’s translation has acquired its own life in the social sciences (Baehr, 2001). Alexander’s notion of the “cage of modernity” thus refers to life in capitalism, or modernity in its capitalist variation, his view being that capitalism is the immovable political-economic foundation of society, and thus modernity in its knowable, lived formulation has become a cage. This work has proven how science, and by extension projects like Rat Park are entangled with, if not directly responsive to, economic and political conditions, relying upon the commodification of research and its actors. As discussed throughout this thesis, Alexander’s work was not successful solely because of the values it communicated, but because those values emerged at a historical moment in which they possessed cultural purchase, rendering the study particularly amenable to commodification and consumption. In this way, like Alexander, I do not believe modernity is salvageable, as even scientific projects looking to dethrone and disown capitalism must still be translated into economic and institutional logics to achieve visibility, legitimacy, and influence. While a science operating outside capitalism risks becoming inaudible, a science conforming to capitalist systems can never be wholly disruptive.

Yet, while I do not think Rat Park demonstrates the possibility of escaping modernity altogether, its value may lie in its capacity to provide moments of reprieve from dominant neoliberal forms of subjectivity. If escape from the “cage” of modernity remains unattainable, Rat Park nonetheless opens imaginative space for alternative ways of thinking about addiction, sociality, care, and human flourishing. In this sense, I am less convinced by the possibility of escape than by the political and psychological importance of temporary stoic retreat within systems that may not themselves be fully escapable. If we are destined to reside within the “cage” of modernity, like the rats, it may be the possibility of disruption, resistance, and reprieve that enriches our confined existence.

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