WHAT IT MEANS TO BE HIGH:

A QUALITATIVE EXPLORATION OF HEROIN

INTOXICATION THROUGH THE LENSE OF FLOW

THEORY

By

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Abstract: There is an urgent need for evidence-based recreational therapy practices for the treatment of individuals experiencing heroin addiction. The meaning of the heroin experience has never been explored exclusively through a leisure lens, and as such, little is known about the unique leisure needs of this population. Flow theory offers an opportunity to explore the meaning of heroin intoxication through a leisure lens. While drug intoxication and flow are mutually exclusive experiences, drug intoxication may feel like, or mimic, flow. Previous research has suggested that the flow-like qualities of drug intoxication may be relevant in the treatment of drug addiction. The purpose of this study was to explore the experience of heroin intoxication through the leisure lens of flow theory in order to gain deeper understanding of the ways in which heroin intoxication is similar to flow, and subsequently, to gain preliminary understanding of the ways in which the similarities between heroin intoxication and flow may inform recreational therapy practice with this unique population. Directed qualitative content analysis was used to analyze a sample of 101 anonymous heroin experience narratives. The findings of this study indicate that for members of the research sample, heroin intoxication is a deeply meaningful experience that mimics flow in several key areas, including the manifestation of intrinsic rewards. The findings of this study also indicate that recreational therapists can utilize flow theory to conceptualize that which is lost when sobriety is gained, thereby gleaning vital knowledge about the leisure needs of individuals in recovery from heroin addiction. Due to the striking similarities between heroin intoxication and flow, the researcher concluded that flow theory should be a focal point in recreational therapy service delivery to patients experiencing heroin addiction.

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CHAPTER I

INTRODUCTION

Overview

Recreational therapy is a unique healthcare discipline with a vast reach and a focused scope of practice. Recreational therapy practice is founded on the philosophical belief that leisure makes life worth living, and as such, leisure is regarded as a central and essential element in the process of achieving and maintaining wellbeing (Austin, Crawford, McCormick, & Van Puymbroeck, 2015). An express focus on leisure sets recreational therapy apart from other therapeutic disciplines. Leisure can be defined in many ways and has evolved socially and philosophically across the span of human history (McLean & Hurd, 2012). Leisure, in the current study, is defined as free time and all activities that are done for enjoyment during free time (Csikszentmihalyi, 1997; Klieber, 2013). Recreational therapists are trained to inspire personal growth and healing through facilitating the discovery or rediscovery of healthy leisure pursuits (Austin et al., 2015).

Despite applicability across diverse settings, recreational therapy has found a particularly strong calling in the field of psychiatric healthcare (NCTRC, 2017). Healthy leisure habits are linked to increased well-being, decreased negative symptomology, and improved ability to cope with illness and adversity, which makes recreational therapy an invaluable asset in the

multi-disciplinary treatment of individuals with psychiatric illnesses (Austin et al., 2015). Current trends in psychiatric healthcare indicate that substance use disorders have become a major area of service provision (Kunstler, 2015). As such, the specialized practice of recreational therapy within behavioral health settings must evolve along with the greater field of psychiatric healthcare as it expands to provide purposive non-pharmaceutical treatment options for patients struggling with substance use disorders. Substance use disorders (SUD), though categorized under the larger umbrella of psychiatric disorders (APA, 2013), present unique challenges for both the patient and the practitioner (Kunstler, 2015). SUDs can be classified as mild, moderate, or severe, depending on the breadth of an individual's symptomology (APA, 2013). While the popular term 'addiction' is not utilized by the American Psychological Association (APA) (2013), the term can be understood as an equivalent to or synonymous with severe SUD (NIDA, 2018a). Addiction is defined by the National Institute on Drug Abuse (NIDA) as, "a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences" (2018a). Whereas medical and mental health professionals utilize the diagnostic language delineated by the APA (2013), individuals with severe SUD still commonly identify socially as having an addiction.

Addiction (severe SUD) is corrosive to mental, physical, and social health, and as such, the process of recovering from addiction requires a complete reformation of the individual's lifestyle (Kunstler, 2015). Additionally, patients with addiction are faced with the overwhelming task of forming a new non-addict identity (McIntosh & McKagney, 2000; McIntosh & McKagney, 2001). Leisure is an essential and inextricable component of a sober lifestyle, as it provides vital alternatives to drug use, healthy outlets for expelling energy and emotions, and acquisition of lifesaving coping skills (Kunstler, 2015). Furthermore, a rich leisure lifestyle is vital for the formation of a new non-addict identity (Kunstler, 2015) as it provides opportunities to make meaning, find purpose, and enhance sense of self (McIntosh & McKagney, 2001). As leisure-oriented practitioners, recreational

therapists have much to offer patients experiencing substance addiction, across all stages of recovery (Kunstler, 2015).

Though all patients with SUD face a common set of core challenges, recovery from substance addiction is not a one size fits all process. Each drug of abuse, whether it be alcohol, cocaine, heroin, or something else entirely, has a distinctive set of subjective effects, which create unique drug-specific dynamics during recovery (Delle Fave & Massimini, 2003; Foddy & Savulescu, 2010; Stevens & Smith, 2017). For example, it can be understood that the experience of using alcohol is different than the experience of using cocaine, and therefore, the experience of recovering from alcohol addiction is different than the experience of recovering from cocaine addiction. Although certain treatment protocols may apply across SUD in general (Kunstler, 2015), patient care is greatly strengthened when clinicians possess nuanced understanding of the subjective experiences associated with each patient's drug of choice (Delle Fave & Massimini, 2003; Stevens & Smith, 2017).

Heroin addiction is especially challenging to treat, as the experience of heroin intoxication, known colloquially as a *high*, is profoundly powerful to the user. The subjective experience of a heroin high is characterized by a sense of total mental and physical escape (Kosel et al., 2008). The heroin experience is so potent that individuals addicted to heroin are known to continue using the drug despite an array of negative consequences, such as social deterioration and life-threatening overdose (APA, 2013). Furthermore, individuals addicted to heroin report that fear of losing heroin is a barrier to seeking treatment and that missing heroin is a major barrier to maintaining sobriety (Van Zyl, 2007). In this light, it can be understood that entering sobriety results in a sense of loss for individuals addicted to heroin and without careful exploration of this loss, a dangerous nagging void remains in their lives. In medical literature, the perceived positive effects of heroin intoxication are commonly reduced to simple descriptors, such as 'euphoria' and 'analgesia' (Kosel et al., 2008), which fail to nourish the clinician's nuanced understanding of the drug's complex meaning to those addicted to it (Delle Fave & Massimini, 2003).

The meaning of heroin use has been explored by scholars across many disciplines, yet recreational therapy is not among this group. A rising sense of national urgency regarding the development of non-pharmaceutical treatment interventions for individuals addicted to heroin (U.S. Department of Health & Human Services, 2017) underscores the necessity of recreational therapy scholarship on the issue (Kunstler, 2015). For individuals addicted to heroin, drug use and drug seeking behavior is largely conducted in the leisure space (Faulkner, 1991). Therefore, for recreational therapists, the patient's heroin experience is not only relevant but essential to the treatment and recovery process (Delle Fave & Massimini, 2003). As such, exploration of the heroin experience has an important role to play in the development of recreational therapy treatment protocols for individuals addicted to heroin (Kunstler, 2015).

Exploration of the heroin experience through a leisure lens is an essential step in deepening discipline-specific understanding of patient needs during treatment and recovery. Csikszentmihalyi's flow theory is a fundamental concept in the field of recreational therapy and, for multiple reasons, presents as a natural theoretical lens through which to explore the meaning of heroin use as it relates to the scope of recreational therapy practice. First, flow theory, in the most basic sense, is concerned with the cultivation of life satisfaction through participation in meaningful activities (Csikszentmihalyi, 1990), which is an underlying goal of recreational therapy treatment across all populations (Austin et al, 2015). Second, the experience of flow, as delineated by Csikszentmihalyi's flow theory, is striking in its apparent global similarity to the experience of a heroin high. While in a flow state, individuals experience complete freedom from the stresses of their everyday lives, as their field of consciousness encompasses only the precise present moment and the subsequent string of moments that follow, for as long as the episode of flow lasts (Csikszentmihalyi, 1990), which is a sentiment echoed by individuals describing heroin intoxication (Delle Fave & Massimini, 2003; Kosel et al, 2008). Third, while flow theory excludes drug use as a source of flow, the notion that

drug induced states can be flow-like has been previously discussed in flow literature (Delle Fave, Massimini, & Bassi, 2011).

Mimetic flow is a term sometimes used to describe the phenomenon in which an individual has a flow-like experience while engaged in an activity that is irreconcilable with the inherently positive quintessence of flow, such as drug use (Delle Fave & Massimini, 2003). While considered a concomitant phenomenon to flow, little research has been done to explore the phenomenon of mimetic flow during drug use (Delle Fave & Massimini, 2003) and there is no existing research on mimetic flow during heroin use explicitly. Pharmaceutical interventions for heroin addiction provide patients with relief from withdrawal and physiological craving, but do not address the psychological and emotional implications of heroin use or provide a meaningful avenue to pastiche desirable effects of heroin use in a safe and constructive way that promotes wellbeing (Delle Fave & Massimini, 2003). The discipline of recreational therapy is uniquely positioned to help bridge the gap between physiological and psycho-emotional recovery by facilitating treatment interventions intentionally crafted to address that which is lost when sobriety is gained (Faulkner, 1991; Kunstler, 2015).

The prevalence of mimetic flow during heroin use begets the notion that naturally occurring flow experiences may hold the powerful potential to provide patients recovering from heroin addiction with safe and constructive means for fulfilling their unique post-addiction leisure needs (Delle Fave & Massimini, 2003). As such, the phenomenon of mimetic flow may be of clinical value in the field of recreational therapy due to its largely unexplored potential to inform new evidence-based practices for treatment of patients with heroin addiction.

Problem Statement

There is an urgent need for evidence-based recreational therapy practices for treatment of patients with heroin addiction. Flow theory presents a unique discipline-specific lens for the exploration of heroin use as it relates to patients' leisure needs in recovery. Mimetic flow during drug

use is often mentioned in flow literature, yet little research on the phenomenon exists. Despite striking global similarities, the experience of heroin intoxication has never been formally explored in relation or comparison to naturally occurring flow.

Significance of the Study

The phenomenon of drug induced mimetic flow is often mentioned in flow literature, yet a singular mixed methods study by Delle Fave and Massimini (2003) remains the only scholarly research on the topic. Delle Fave and Massimini (2003) found that a significant percentage of former drug users associated their drug use with optimal experience (flow) as determined by the Flow Questionnaire. Though the Delle Fave and Massimini (2003) study provides preliminary evidence to support the prevalence of mimetic flow during drug use, it does not include differentiation between drugs of abuse, but rather focuses on substance use in general. In addition, the Delle Fave and Massimini (2003) study is mainly quantitative and therefore does not yield information to nourish greater understanding of the phenomenon and its meaning. Ultimately, Delle Fave and Massimini (2003) found that mimetic flow, is, in fact, occurring for some individuals during drug use, and suggest that mimetic flow should therefore be further explored for therapeutic purposes.

The current study differs from the Delle Fave and Massimini (2003) study in several key ways, which underscore its significance. First, the current study focuses exclusively on a single drug of abuse – heroin. Second, the current study is qualitative in nature and focuses on the subjective experience of heroin intoxication in comparison to naturally occurring flow. Third, whereas Delle Fave and Massimini (2003) were interested in the prevalence of mimetic flow during drug use, the current study focuses on its manifestation during heroin use. The current study seeks to establish preliminary understanding of mimetic flow during heroin use, and ultimately, the role naturally occurring flow experiences may play in the treatment of heroin addiction. The current study is the first ever to explore the phenomenon of mimetic flow during heroin intoxication.

Statement of Purpose and Research Question

The purpose of the current study was to explore the experience of heroin intoxication through the leisure lens of flow theory in order to gain deeper understanding of the ways in which heroin intoxication is similar to naturally occurring flow experiences. To achieve this purpose, the current study addresses the following qualitative research question: in what ways, if any, is heroin intoxication similar to flow?

Definition of Key Terms

- Addiction – "a chronic, relapsing disease that is characterized by compulsive drug seeking and use, despite harmful consequences"; synonymous with severe substance use disorder as defined by the DSM-5 (NIDA, 2018a).

- Anti-flow – A term used in the current study to describe something that is incongruent with fostering flow.

- Consciousness – the complex human system of selecting, processing, and storing information (Nakamura & Csikszentmihalyi, 2002/2014, p. 242).

- Data bit – a distinct sentiment within the data, generally not exceeding 40 words in length, that has been isolated for coding (Patton, 2015).

- Directed qualitative content analysis – a form of qualitative content analysis (QCA) in which, "the structure of analysis is operationalized on the basis of previous knowledge" (Elo & Kyngäs, 2008, p. 109).

- Drug – an intoxicant, a mind-altering substance (NIDA, 2018a).

- Flow – a subjective state of intrinsically motivated optimal functioning in which skill and challenge are equally matched; characterized by complete absorption in the present moment and resulting in opportunities for positive personal growth (Nakamura & Csikszentmihalyi, 2002/2014).

- Flow-like – when an experience feels like flow but does not meet the criteria for a flow experience as delineated by flow theory, synonymous with mimetic flow (Delle Fave & Massimini, 2003).

- Flow theory – a rich collection of ideas and principles related to the connection between optimal human functioning and life satisfaction; delineates the essential elements of the flow experience (Csikszentmihalyi, 1990, 1997).

- High – the sought-after subjective experience of acute heroin intoxication, which is generally characterized by good feelings and euphoria (Urschel, 2009, p. 54).

- Heroin – a highly addictive and deadly opioid drug (NIDA, 2018b).

- Intrinsic motivation – to participate in an activity because it is rewarding in and of itself, without influence from external rewards or consequences (Nakamura & Csikszentmihalyi, 2002/2014).

- Leisure – free time and all activities done during free time (Klieber, 2013)

- Meaning – the byproduct of a significant experience as it is connected to one's sense of purpose (Csikszentmihalyi, 1990, p. 216).

- Mimetic flow – phenomenon in which an individual has a flow-like experience while engaged in an activity that is irreconcilable with the inherently positive quintessence of flow, such as drug use (Delle Fave & Massimini, 2003).

- Naturally occurring flow – true flow produced by the confluence of the nine elements of a flow experience as delineated by Csikszentmihalyi's flow theory (as opposed to unnatural/mimetic flow produced by consciousness-altering substance use) (Csikszentmihalyi, 1990; Delle Fave & Massimini, 2003).

- Pro-flow – a term used in the current study to describe something that is congruent with fostering flow.

- Purpose – a goal that gives significance to one's life (Csikszentmihalyi, 1990, p. 216).

- Recreational therapy – "a systematic process that utilizes recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery and well-being" (American Therapeutic Recreation Association, 2015).

- Recovery – the ongoing psycho-social process of cultivating a lifestyle and attitude that sustain sobriety (Witbrodt, Kaskutas, & Grella, 2015).

- Self – "the sum of one's conscious processes" as oriented to one's goals (Nakamura & Csikszentmihalyi, 2002/2014, p. 243).

- Sobriety – a state of physical abstinence from mind-altering substances (Narcotics Anonymous, 1986).

- Subjective experience – "the content of consciousness" (Nakamura & Csikszentmihalyi, 2002/2014, p. 242).

- Substance – an intoxicant, a drug; utilized to alter consciousness and/or reality (APA, 2013; NIDA, 2018a)

- Substance abuse – a general term used in the current study to describe use of any illegal substance, misuse of a legal substance, or use of a substance to one's detriment (including addiction); synonymous with drug abuse.

- Substance (ab)use – a term used in the current study to refer to 'substance use and abuse' in an abbreviated way; this term is inclusive of all substance use habits, ranging from occasional use to addiction; synonymous with drug (ab)use.

- Substance use – a general term used in the current study to describe the act of taking a drug; synonymous with drug use.

- Substance use disorder (SUD) – a clinical diagnosis: "a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues using [a] substance despite significant substance-related problems" (APA, 2013, p. 483).

CHAPTER II

REVIEW OF LITERATURE

Overview

The current study presented an opportunity to gain preliminary understanding of the phenomenon of mimetic flow during heroin intoxication and the ways in which the knowledge gained can inform the practice of recreational therapy with individuals recovering from heroin addiction. As the current study explored a previously unstudied phenomenon, the following literature review serves as an intentional bricolage of theoretical foundations and analogous scholarship to nourish the core rationale. To synthesize pertinent scholarship within outwardly disparate bodies of knowledge, the following literature review is organized in four sections: 1) contextualizing substance (ab)use, 2) conceptualizing flow theory, 3) connecting substance (ab)use and flow theory, and 4) summary of key points.

<center>**Contextualizing Substance (Ab)use**</center>

Overview

Substance use and abuse, hereafter referred to jointly as (ab)use, is a relevant and tantalizing area of study across many disciplines. The current study is anchored in the academic discipline of leisure studies, and as such, discussion of substance (ab)use will remain tightly coiled to the leisure context. The current study does not aim to reimagine the origin or definition of addiction, but rather to elevate discourse on the role leisure and leisure-based clinical interventions may play in recovery from heroin addiction. The current section will situate substance (ab)use within the leisure context, delineate existing knowledge of the role leisure plays in addiction, recovery, and sobriety, and review the limited literature on the application of recreational therapy (RT) with the substance use disorder (SUD) population.

Leisure

Leisure, in the most basic sense, can be understood as a pregnant opportunity, or a space (literally and/or figuratively) for an individual to recreate (McLean & Hurd, 2012). Whether read as rec-reate or re-create, recreate means "to give new life or freshness to" (Merriam-Webster, 2018). Therefore, it can be understood that leisure is a context which allows for an individual to refresh and restore themselves. Conservative (traditional) conceptualizations of leisure incorporate prerequisites of moral goodness, freedom of choice, and intrinsic motivation (Rojek, 1999; McLean & Hurd, 2012). While such definitions of leisure are conducive to the contexts of recreational therapy, wellness, and personal growth, such definitions are limited in their capacity to sustain vital discourse on the reality that substance (ab)use occurs in the leisure context (Rojek, 1999; Klieber, 2013). In relation, Klieber (2013) explains that any conceptualization of leisure that necessitates moral goodness as a precondition, "…fails to consider those human patterns that are individually and socially destructive but are nevertheless done in the name of fun,

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entertainment, and enjoyment" (p. 26). Substance (ab)use falls within the aforementioned category of activity (Klieber, 2013).

The moralization of leisure, then, can be understood as a barrier to exploring the activity of substance (ab)use through a leisure lens. In relation, Klieber (2013) suggests that the moralization of leisure is a removable barrier. As a potential resolution, Klieber (2013) offers a more liberal conceptualization of leisure: "…let us take as leisure all that is included in free time…this meaning of leisure could thus include meaningless, decadent, and even self-destructive activities as well as reflecting burdensome free time associated with ennui and boredom" (p. 26). Klieber's (2013) liberal definition of leisure allows for the contextualization of substance (ab)use as a leisure activity. Leisure, therefore, in the context of the current study, is understood as free time and any activity done during free time, regardless of morality, as such a definition provides the necessary space to explore substance (ab)use through the lens of leisure.

Leisure and Substance (Ab)use

Although utilized differently by each individual, leisure (free time) is a universal experience (McLean & Hurd, 2012). Leisure and substance (ab)use intersect in many ways (Hood, 2003). First, and perhaps most obviously, substance (ab)use often takes place in the leisure space (during free time). Alcohol, for example, is a celebrated element within many leisure contexts, from sporting events, to dining out, to quiet nights at home (Crabbe, 2006). In fact, alcohol is a cultural artifact and alcohol consumption is accepted and even encouraged when it fits within the boundaries of societal norms (Crabbe, 2006).

Crabbe (2006) explores the phenomenon of social binge drinking in a contemplative essay. Crabbe (2006) explains that the recreational activity of binge drinking serves many purposes for the participant, ranging from performance of suppressed identity to temporary freedom from responsibility. In relation, Crabbe (2006) states, "This kind of excess generates an

almost childlike feeling of freedom and irresponsibility where individuals are able to perform not only an augmentation of their existential capacities for the affectual and the imaginative, but also to experience an atmosphere of intensified engagement" (p. 160). In this sense, it can be understood that alcohol (ab)use provides a reality-transforming element to the leisure space that may be otherwise inaccessible.

Illicit substances (drugs) are used in the leisure space as well, hence the popular phrase 'recreational drug use'. For some, substance (ab)use relieves boredom (Csikszentmihalyi, 1997) and/or offers opportunities to satisfy sensation seeking urges (D'Silva et al., 2001). While recreational substance (ab)use may seem, on the surface, innocuous or exploratory, Rojek (1999) warns that this is merely a façade. The façade, Rojek (1999) explains, is hiding a deep sense of inauthenticity, which results in a desire to retreat or escape from everyday life (p. 28). In relation, Rojek (1999) states, "Repeated gross stimulant abuse involves punishing the invalid elements of the personality by consigning them into a state of senselessness" (p. 28). The deeper an individual gets in their substance (ab)use, the more solitary their leisure experiences become internally, which leads to the proliferation of an abusive external leisure career (Rojek, 1999, p. 29). In this sense, it can be understood that substance (ab)use may represent an attempt to silence deep internal struggles that are loudest during free time.

When substance (ab)use becomes addiction, an individual's substance (ab)use can be understood as no longer occurring exclusively in the leisure context (APA 2013; Kunstler 2015). Through an exploration of the leisure habits of women addicted to alcohol, Henderson and Gardner (1996) identified four distinct phases of leisure progression across the addiction timeline: true leisure, false leisure, transitional leisure, and reclaimed leisure. The first phase, *true leisure*, represents experiences before addiction during which alcohol use is secondary in importance to any other leisure activity (Henderson & Gardner, 1996). The second phase, *false leisure*, represents a shift in priority during which alcohol becomes superior in importance to any other

leisure activity (Henderson & Gardner, 1996). During the false leisure phase, leisure activities purely serve as a vehicle for alcohol consumption (Henderson & Gardner, 1996). The third phase, *transitional leisure*, represents reintroduction of sober leisure and a step away from old leisure habits that revolved around alcohol (Henderson & Gardner, 1996). This phase can be understood as re-learning how to leisure (Hood, 2003, p. 57). Finally, the fourth phase, *reclaimed leisure*, represents the (re)discovery of a meaningful leisure identity and fulfilling leisure lifestyle. Henderson and Gardner's (1996) delineation of the evolution of leisure across the timeline of addiction provides invaluable understanding of substance (ab)use and addiction within the leisure context.

Role of Leisure in Sobriety and Recovery

Although sometimes used interchangeably in academic literature, the terms sobriety and recovery have entirely different meanings within the lifeworld of substance addiction (Hood, 2003). Sobriety represents abstinence from substance use, while recovery represents a commitment to self and social honesty, righting wrongs, and becoming better (Hood, 2003). In this sense, it can be understood that an individual may be sober but not in recovery. In a qualitative study on the place of leisure for women in recovery from alcoholism, Hood (2003) sheds light on the different roles that leisure plays in sobriety and recovery. From Hood's (2003) findings, it can be intuited that in the context of sobriety, leisure serves to offer mechanisms for coping and diversion, while in the context of recovery, leisure provides opportunities for reconstructing identity and discovering meaning and purpose. In this light, it can be understood that leisure plays an important role in both sobriety and recovery.

An individual in recovery from SUD must start anew in nearly all aspects of their life (Kunstler, 2015). This sentiment is echoed by the beloved adage of the support group Alcoholics Anonymous: "beware of people, places, and things" (Levounis & Ascher, 2013, p. 2). The

essence of this popular saying is that exposure to past activities once associated with substance use serves as potential triggers for relapse (Levounis & Ascher, 2013). As such, an individual in recovery must protect their sobriety by identifying and then avoiding or coping with the experience of sensory memories that cause drug craving (Levounis & Ascher, 2013). In other words, sobriety is generally understood to hinge upon an individual's willingness to separate themselves from all environmental and social contexts that they associate with their substance use. For individual's in recovery from substance addiction, the shock of starting over can be overwhelming (Kunstler, 2015). Free time (leisure), which was once occupied by drug use and drug-seeking, becomes an exciting yet daunting and potentially dangerous new commodity for those entering sobriety (McCormick & Dattilo, 1992; Kunstler, 2015).

While the majority of literature (e.g. Tuchfeld, Lipton, & Lile, 1983; Cook, 1985; McCormick & Dattilo, 1992, 1995; Kunstler, 2015) suggests that an individual's sobriety is protected by adopting new leisure activities, Harmon (2018) explores the possibility that passion for a longstanding leisure activity can provide continuity of identity for individuals recovering from substance addiction. Harmon's (2018) qualitative study of newly sober music fans that had a leisure career of attending the shows of a particular music group for over a decade, reveals that for this select group of recovering individuals, maintaining connection to and participation in the music scene was experienced as identity confirming and empowering. Harmon (2018) found that while the participants in his study continued to engage in the music scene throughout the course of their addiction (pre, during, post), retrospective reflection revealed that the quality of their leisure experience during addiction was very low. This finding is supportive of Henderson and Gardener's (1996) concept of false leisure. However, for Harmon's (2018) participants, recovery brought a desire to nurture and reconnect with their longstanding leisure passion in sobriety, rather than adopt new leisure interests. Harmon (2018) concludes that for the individuals in his study, preservation of leisure identity was integral to their success in recovery.

Earlier research by Epstein and Sardiello (1990) is confirmatory of Harmon's (2018) findings. In an exploration of the recovery experiences of the Wharf Rats, which are a group of sober devotees of The Grateful Dead, a California band with a cult following, Epstein and Sardiello (1990) learned much about leisure. Epstein and Sardiello (1990) report that members of the Wharf Rats are remarkably able to maintain sobriety without abstaining from engagement in the music scene that once facilitated their substance abuse. In this sense, members of the Wharf Rats have managed to maintain their leisure identity from before sobriety through facilitating its evolution (Epstein and Sardiello, 1990). While the dominant discourse on recovery calls for individuals to avoid and/or change people, places, and things, it is evident that for some individuals with serious leisure careers previously intertwined with substance use, old leisure activities can be adapted to meet sober needs when proper supports are in place.

Whether leisure pursuits are preserved or discovered anew, leisure plays an integral role in recovery from substance addiction (McCormick & Dattilo, 1992; Henderson & Gardner 1996; Hood, 2003). Beyond a need to fill free time safely and cope with cravings skillfully (Kunstler, 2015), fulfilling leisure is essential for the construction of a new non-addict identity (McCormick & Dattilo, 1992; Hood, 2003). Biernacki (1986) presents a highly cited theory that recovery from substance addiction, especially heroin addiction, is facilitated by an addicted person's sudden awareness of and desire to rehabilitate a spoiled identity. Biernacki (1986) explains that it is only once an individual is fueled by a desire to reimagine themselves that they may achieve sobriety. More currently, McIntosh and McKeganey (2000, 2001) discuss the process and importance of constructing a non-addict identity as described by individuals recovering from substance addiction. McIntosh and McKeganey (2000) explain that for many individuals in recovery, construction of a non-addict identity means reconnecting with and expressing "who they are at heart" (p. 1506). In this sense, it can be understood that recovering individuals give themselves

permission to recover by divorcing past drug use from their sense of authentic self (McIntosh and McKeganey, 2001).

Whereas addiction spoils identity, recovery allows for identity to be reimagined and reclaimed. Hood (2003) explores the experiences of women in recovery from alcoholism through the lens of leisure. Hood (2003) finds that the lived leisure experiences of women recovering from alcoholism are in line with the four-part leisure sequence (true, false, transitional, reclaimed) presented by Henderson and Gardner (1996). In relation to the fourth phase (reclaimed leisure), the women in Hood's (2003) study explain that leisure gave them the necessary space to reimagine themselves as a worthy somebody. Furthermore, Hood (2003) explains that for the women in her study, leisure served as an "important context for identity work" (p. 72). In relation, one woman says of leisure, "[it] sort of implies the person I am. You know, I think figuring it out, for me, what I like to do made me feel more real to myself" (p. 72). In relation to recovery, one woman explains, "I don't really even like that word actually. I look at more as a discovery because it's me finding out about myself…" (p. 67). In the same spirit of discovery, many women in Hood's (2003) study articulate that fulfilling leisure has enabled them to find purpose and make meaning of their lives, which is an anchoring element in their recovery.

The Place of Recreational Therapy

Recreational therapy (RT) is, "…a systematic process that utilizes recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to psychological and physical health, recovery and well-being" (ATRA, 2018). While the efficacy of RT practice with the general behavioral health population is widely demonstrated in the literature (Austin et al., 2015), less than a handful of empirical studies exclusively related to the treatment of SUD have been published in the past decade (Kunstler, 2015). As previously delineated, the greater field of leisure studies has done important work on

exploring the connections between leisure and substance (ab)use. However, these studies are conceptual in nature and do not add to empirical evidence on the role of leisure or RT in the treatment of SUD. Lack of discipline-specific literature to inform RT practice with the SUD population is a major short-coming for the profession, which perpetuates muddled interpretation of best practices for a uniquely vulnerable population (Kunstler, 2015). In fact, in the most current edition of an introductory RT textbook (Austin et al., 2015), the chapter dedicated to SUD (Kunstler, 2015) encourages readers to rely on anecdotal evidence until discipline-specific evidence emerges.

The field of RT may also benefit from discipline-specific research that aids in refining and reconceptualizing its role in the treatment of SUD. Kunstler (2015) regards the primary role of RT in the treatment of SUD as promoting a sober lifestyle. However, this designation is limited and indicative of the academic and practical disconnect between recreational therapy and its mother discipline, leisure studies. As previously delineated, the role of leisure in recovery and sobriety goes far beyond diversionary activities and leisure coping skills. As clinical leisure practitioners, recreational therapists may be uniquely positioned to address and aid in the construction of an individual's new non-addict identity (Hood, 2003), which is an essential aspect of successful recovery (McIntosh & McKeganey, 2000, 2001).

Leisure Meaning Making. Leisure education is a classic and essential modality in RT practice (Austin et al., 2015). While leisure education is most commonly understood as, "…a directed, methodological, structured process recognizing the individual's right to leisure and the wise use of it, with the objective to impart and foster desirable patterns of leisure behavior" (Dattilo, 2016), it can also be conceptualized as leisure meaning making. In elaboration, Bailey (2005) explains, "…the self is constructed through discourse; people's sense of who they are, of what is possible for them, and of how they act does not operate in a vacuum but rather comes from shared understanding of these parameters" (p. 537). In other words, an individual's identity,

or sense of self, can only expand as far as their language to conceptualize their experiences. Through leisure education, the recreational therapist provides an individual with language (vocabulary and concepts) vital to the process of reimagining themselves *through* leisure, thus making new meaning.

While an individual may have enjoyable experiences during their leisure, without the necessary leisure language (vocabulary and concepts) to utilize during self-reflection, they cannot fully make meaning of their experiences. Likewise, an individual cannot properly assess what their leisure is lacking without the necessary conceptual language to foster the contemplation. Lastly, an individual cannot know that there is greater potential for their leisure if they do not possess the language for enhanced leisure meaning making. In this light, leisure education (the teaching of leisure language) can be understood as the foundation for all RT interventions.

Leisure meaning making is made possible when an individual possesses rich language (vocabulary and concepts) to conceptualize and assess their leisure experiences with (Dattilo, 2016). To teach leisure language, recreational therapists draw knowledge and inspiration from countless leisure theories. Csikszentmihalyi's (1975, 1990, 1997) flow theory, for example, is jampacked with vibrant leisure language, which provides individuals with the necessary vocabulary and analytical tools to make meaningful changes to their leisure. Flow theory can be understood as a practical and philosophical blueprint for constructing a fulfilling leisure identity (Csikszentmihalyi, 1990, 1997). As such, flow theory is regarded as a foundational theory for RT practice and a vital concept in leisure education (Dattilo, 2016). Suitable for fostering enhanced leisure meaning making, flow theory offers hope to those who struggle to find meaningful leisure and a framework for recreational therapists to utilize in their practice.

Conceptualizing Flow Theory

Overview

Entire books have been dedicated to the endeavor of describing flow theory. In this sense, it can be understood that flow theory is richly conceptualized. As such, the scope of the present literature review does not allow for an exhaustive description of flow theory. The current section will emphasize and nourish aspects of flow theory that are most relevant to the purpose and theoretical framework of the current study. The current section will include the following six subsections: 1) origins of flow theory, 2) the essence of flow theory, 3) flow theory as a leisure lens, 4) the flow experience, 5) the elements of flow, and 6) "the dark side of flow".

Origins of Flow Theory

Flow theory is a cache of positive psychology concepts that demarcate the relationship between life satisfaction and optimal experience (Csikszentmihalyi, 1990, 1997). First studied by Mihaly Csikszentmihalyi in the early 1970's, flow theory has since become a pivotal axiom for the understanding of human experience and life satisfaction (Engeser & Schiepe-Tiska, 2012). Csikszentmihalyi's original academic interest, which unwittingly led to the conception of flow theory, was in the genesis of creativity (Csikszentmihalyi, 1990, 1997). Csikszentmihalyi sought to understand the phenomenology of the creative process, and in that spirit, he began to observe artists at work (Csikszentmihalyi, 1990, 1997). Csikszentmihalyi quickly noticed that while in the climax of the creative process, artists would sometimes create for hours without registering the need for rest, food, water, lavatory breaks, or human interaction (Csikszentmihalyi, 1990, 1997). Additionally, and much to his astonishment, once the artists completed their respective pieces, the artwork was only briefly savored before being cast aside and largely forgotten – even in instances in which dozens of hours had been spent on its creation (Csikszentmihalyi, 1990, 1997; Engeser & Schiepe-Tiska, 2012).

Csikszentmihalyi recalls being completely arrested by the apparent paradox between intensity of creation and speedy detachment from the end product (Csikszentmihalyi, 1990, 1997). Emic exploration of the creation/detachment paradox led Csikszentmihalyi to understand that the process of artistic creation was of greater value to the artists than the artwork that it resulted in (Csikszentmihalyi, 1990, 1997). In other words, the languor of completed creation brought more satisfaction to the artists than the artwork that they had created during the process (Csikszentmihalyi, 1990, 1997; Engeser & Schiepe-Tiska, 2012). Furthermore, when probed about the motivation behind their interminable appetite for making art, the artists explained that it was the experience of creation that kept them coming back for more and that their artwork was simply a happy byproduct (Csikszentmihalyi, 1990, 1997). The all-consuming rapturous experience of creation, the artists explained, is fluid, automatic – similar to the way a river flows (Csikszentmihalyi, 1990, 1997). From these early interviews with artists, the nascent theory of flow was conceived and later thusly named (Csikszentmihalyi, 1990, 1997).

Csikszentmihalyi intuited that the paradoxical phenomenon he had stumbled upon was not limited to the activity of artistic expression (Csikszentmihalyi, 1990, 1997). Csikszentmihalyi broadened his inquiry to include athletes, chess players, and rock climbers (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005/2014, p. 230). Csikszentmihalyi and his colleagues discovered that in all of the groups that they studied, the same phenomena of all-consuming focus and intrinsic reward were present (Csikszentmihalyi et al., 2005/2014, p. 230). Despite engaging in disparate activities, the athletes, chess players, and rock climbers all used similar language to describe their peak experiences (Csikszentmihalyi et al., 2005/2014, p. 230). Congruently, the descriptions given by the athletes, chess players, and rock climbers echoed the earlier descriptions given by artists – their experiences "carried them along effortlessly" (Csikszentmihalyi et al., 2005/2014, p. 230). Effortless, in this context, refers to automatic action during which the mind

and body work in unison without need for intentional conscious thought about how to proceed or behave (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi et al., 2005/2014).

The symphony of effortless action – its allure, its benefits, and its elements – became the primary focus of Csikszentmihalyi's work moving forward (Csikszentmihalyi, 1975; Engeser & Schiepe-Tiska, 2012). Encouraged by his preceding findings, Csikszentmihalyi expanded his inquiry to include more activities, such as dance, music, religious experiences, gambling, and even occupational activities, such as surgery (Csikszentmihalyi, 1975). Csikszentmihalyi sought to understand how and why it was that individuals came to value an experience or activity more than any end product that it yielded (Csikszentmihalyi, 1975; Engeser & Schiepe-Tiska, 2012). What, he wondered, makes an activity worth doing for its own sake (Csikszentmihalyi, 1975)? Across several years of intensive research, the answers to Csikszentmihalyi's questions were revealed to him (Csikszentmihalyi, 1975). In his first published work on the phenomenon, Csikszentmihalyi (1975) shared with the world the answers to his research questions by introducing the concept of flow and nourishing it with what is now known as flow theory.

The Essence of Flow Theory

Csikszentmihalyi (1997) asserts that it is up to every individual to choose whether they are going to live or die throughout their lifetime. Meant in a figurative sense, to live, Csikszentmihalyi (1997) explains, is to constantly cultivate fullness – in action and in attitude. Fullness, in this context, can be understood as "…[not] wasting time and potential, expressing one's uniqueness, yet participating intimately in the complexity of the cosmos" (Csikszentmihalyi, 1997, p. 2). To live, in other words, means to experience life with a sense of *jois de vivre* or hunger, as opposed to indifference. Furthermore, Csikszentmihalyi (1997) explains that quality of life (fullness) is determined by the content of one's experiences. It can be understood that experiences take place in time, and as such, the way an individual chooses to

invest their time ultimately determines how fulfilling their life will be (Csikszentmihalyi, 1997, p. 8).

Csikszentmihalyi (1997) explains that people invest time in three types of activities: productive, maintenance, and leisure. Productive activities can be understood as activities done for the sake of financial or material livelihood, such as work or study (Csikszentmihalyi, 1997). Maintenance activities can be understood as activities done for the sake of personal sustenance, such as eating, grooming, and chores (Csikszentmihalyi, 1997). Finally, leisure activities, as defined by Csikszentmihalyi (1997), can be understood as activities done during free time for the sake of enjoyment, such as media consumption, conversation, and hobbies of all kinds.

To understand flow theory, one must first understand the connection between experience (activities) and emotions (Csikszentmihalyi, 1997). Csikszentmihalyi (1997) explains that although emotions are highly subjective, they are actually quite objective as well. In relation, Csikszentmihalyi (1997) explains, "...an emotion is also the most objective content of the mind, because the 'gut feeling' we experience when we are in love, or ashamed, or scared, or happy, is generally more real to us than what we observe in the outside world" (p. 17). In this way, emotions largely define experience, as activities elicit emotions and emotions provide structure to one's consciousness (Csikszentmihalyi, 1997). Consciousness, Csikszentmihalyi (1997) explains, is the sum of an individual's psychic (mental) energy and awareness, which can either be organized or disorganized. Csikszentmihalyi (1990, 1997) conceptualizes the structure of consciousness in terms of psychic entropy and psychic negentropy.

Psychic entropy refers to a state of disorganized psychic energy and awareness (Csikszentmihalyi, 1997). Whilst in a state of psychic entropy, an individual cannot direct their attention effectively towards external matters, as they are too consumed by a need to "restore an inner subjective order" (Csikszentmihalyi, 1997, p. 22). Negative emotions, such as sadness, fear,

anxiety, and boredom are all states of psychic entropy (Csikszentmihalyi, 1997). Furthermore, negative emotions monopolize psychic energy (attention) and prohibit an individual from freely choosing how to invest their time (Csikszentmihalyi, 1997). In this sense, it can be understood that negative emotions are disruptive to consciousness and are therefore detrimental to quality of experience (Csikszentmihalyi, 1997).

Psychic negentropy, in comparison, refers to a state of organized psychic energy and awareness (Csikszentmihalyi, 1997). Whilst in a state of psychic negentropy, an individual is not burdened by emotional restrictions to their psychic energy (attention) and can fully attend to an activity (Csikszentmihalyi, 1997). Positive emotions, such as happiness, strength, and motivation are all states of psychic negentropy (Csikszentmihalyi, 1997, p. 22). While in a state of psychic negentropy, an individual is their most productive, most successful, and most focused and engaged (Csikszentmihalyi, 1997). In this sense, it can be understood that positive emotions are calming to consciousness and therefore enhance quality of experience (Csikszentmihalyi, 1997).

Quality of experience is further impacted by motivation, which Csikszentmihalyi (1997) explains is irrevocably linked to an individual's state of subjective consciousness (entropy versus negentropy). Csikszentmihalyi's (1997) research reveals that both intrinsic motivation (doing something because one wants to) and extrinsic motivation (doing something because one has to) are conducive to cultivating psychic negentropy. However, lack of motivation leads to or exacerbates psychic entropy (Csikszentmihalyi, 1997). The reason for this, Csikszentmihalyi (1997) explains, is that psychic negentropy is characterized by the presence of intentions, goals, and motivation, which are necessary for an individual to "develop a coherent self" (p. 23). Conversely, psychic entropy is characterized by a lack of intentions, goals, and motivation, which Csikszentmihalyi (1997) explains detracts from an individual's ability to "develop a coherent self" (p. 23). In other words, individuals feel their best when they have clear motivation and focus

and individuals generally feel their worst when they have vague or non-existent motivation and focus.

Flow, which is characterized by intrinsic motivation, clear goals, control, and laser focus, can be understood as the ultimate state of psychic negentropy (Csikszentmihalyi, 1997). The opposite of flow, then, can be understood as apathy, which is characterized by lack of motivation, lack of goals, lack of control, and lack of focus (Csikszentmihalyi, 1997; Delle Fave & Massimini, 2005). With this information, one can understand the essence of flow theory – quality of life is determined by quality of experiences. Furthermore, Csikszentmihalyi (1990) explains that while many experiences can make life pleasant, it is only stimulating, challenging, and thrilling activities that provide optimal experiences. The prevalence of optimal experiences separates an average life from an excellent one (Csikszentmihalyi, 1990, 1997). Flow, being the most optimal experience possible, is the key to cultivating a truly fulfilling existence (Csikszentmihalyi, 1990, 1997).

Flow Theory as a Leisure Lens

In flow theory, leisure is synonymous with free or unobligated time (Csikszentmihalyi, 1997). As such, leisure can be understood as a context within which individuals may freely choose how they invest their time (Csikszentmihalyi, 1997), which is consistent with the liberal definition of leisure offered by Kleiber (2013). Leisure (free time) is a sought-after commodity, yet Csikszentmihalyi (1997) has found through his research that most people enjoy leisure less than they enjoy work. The reason for this surprising reality, Csikszentmihalyi (1997) explains, is that the average person does not have the necessary skills to use their free time meaningfully. In such instances, leisure is experienced as daunting, stagnant, or even dangerous, as opposed to restorative, invigorating, and fulfilling. In other words, to possess leisure does not guarantee leisure is properly used (Csikszentmihalyi, 1997). Csikszentmihalyi (1997) explains that leisure is

an experiential paradox in the sense that leisure offers unparalleled opportunity for manifesting fulfillment, yet leisure also offers unparalleled opportunity for manifesting emptiness.

Whereas productive and maintenance activities are generally defined by clear guidelines, leisure is generally defined by their absence (Csikszentmihalyi, 1997). Without the necessary knowledge and skills needed to enjoy leisure, the absence of structure during free time can be paralyzing (Csikszentmihalyi, 1997). Csikszentmihalyi (1997) explains that not knowing what to do during free time often leads individuals to participate in meaningless activities simply because they have nothing better to do, which is not a fulfilling use of leisure. Additionally, Csikszentmihalyi (1997) warns that not having the skills to spend free time meaningfully may lead to the use of alcohol or drugs as a means of artificial relaxation or stimulation, which he regards as a shade of apathy.

Through flow theory, Csikszentmihalyi (1990, 1997) provides the average person with the language necessary to conceptualize their free time and leisure lifestyle. For practitioners of leisure, such as recreational therapists, flow theory provides a vital ontological foundation for relating leisure concepts to the public. Flow theory teaches that not all activities are equal, that not all activities have meaning, and that not all activities are life-enhancing. By the same token, flow theory also teaches how to evaluate activities, find meaning, and enhance quality of life (Csikszentmihalyi, 1990, 1993, 1997).

The Flow Experience

Flow, which has previously been identified as the ultimate state of psychic negentropy, can be defined in many ways. In a basic sense, flow is "a holistic sensation present when we act with total involvement" (Csikszentmihalyi, 1975/2014, p. 136). In elaboration, Csikszentmihalyi (1975/2014) describes flow as:

"…the state in which action follows upon action according to an internal logic which seems to need no conscious intervention on our part. We experience it as a unified flowing from one moment to the next, in which we feel in control of our actions, and in which there is little distinction between self and environment; between stimulus and response; or between past, present, and future" (p. 137).

While in flow, an individual is so focused on the present moment that time and space temporarily cease to exist (Csikszentmihalyi, 1990, 1997). Flow provides a temporary respite from the stresses of daily life, and as Csikszentmihalyi (1997) explains, "flow experiences provide…flashes of intense living against [a] dull background" (p. 30). Csikszentmihalyi (1990) describes flow as an experience "…so gratifying that people are willing to do it for its own sake, with little concern for what they will get out of it, even when it is difficult or dangerous" (p. 71). In this sense, it can be understood that flow often manifests when there is element of risk involved in an activity, and as such, passive leisure activities fail to provide the necessary context for flow (Csikszentmihalyi, 1990, 1997). To be fully engaged, not just engrossed, in an activity (as one is in flow), requires a very precise sequence of events to unfold simultaneously.

The Elements of Flow

Flow experiences are known to have nine distinct but inextricable elements (Csikszentmihalyi, Latter, & Weinkauff Duranso, 2017). Csikszentmihalyi et al. (2017) explain that of the nine elements of flow, three are antecedents and six are process outcomes. The antecedents of flow include: clear goals, unambiguous feedback, and balance between challenge and skill (Csikszentmihalyi et al., 2017). The antecedents of flow can be understood as the conditions that must be met for flow to occur. If the three antecedents of flow are met and upheld, the process outcomes of a flow experience may begin to manifest and unfold (Csikszentmihalyi et al., 2017).

The process outcomes of flow can be understood as the defining characteristics of a flow experience (Csikszentmihalyi et al., 2017). The process outcomes of flow, as described by Csikszentmihalyi et al. (2017), include: focused attention, merging of action and awareness, sense of control, loss of self-consciousness, distortion of time, and intrinsic motivation. Csikszentmihalyi et al. (2017) recommend viewing the antecedents and process outcomes of flow as having a linear relationship to reinforce the notion that the three antecedents must first be in place for flow to occur. Furthermore, the nine elements of flow can be understood as a series of chain reactions, with each element nourishing the genesis of the next. Each of the nine elements of flow will now be discussed in detail.

Clear Goals. A goal, in the most basic sense, is a desired outcome. Every waking moment of human life is occupied by determining goals (desired outcomes) and working to achieve them (Csikszentmihalyi, 1990, 1997). Many goals, such as making a satisfying cup of coffee or driving safely to work, are so engrained in the monotony of daily life that they are generally not regarded as goals at all (Csikszentmihalyi, 1990, 1997). Such goals are set and carried out on autopilot by the subconscious mind (Csikszentmihalyi, 1990, 1997). In this sense, it can be understood that an individual need not be aware that they have set a goal to be working towards achieving a goal (Csikszentmihalyi et al., 2017).

Goals are a driving force in flow experiences, and loosely defined subconscious goals are unlikely to foster flow experiences (Csikszentmihalyi et al., 2017). To intentionally achieve flow, Csikszentmihalyi (1990, 1993, 1997) distinguishes that an individual should have clear goals. A clear goal, as described by Csikszentmihalyi et al. (2017), is defined as conscious knowledge of what one desires to accomplish during an activity. In this sense, subconscious or autopilot goals may be understood as passive, whereas clear goals may be understood as active.

Clear goals, according to Csikszentmihalyi et al. (2017), are a vital antecedent to achieving flow because goals inspire consistent motivation for improvement and set parameters for expectations. Csikszentmihalyi et al. (2017) emphasize that clear goals and flow are not inextricable, as flow can occur without them. However, flow is much more likely to occur when clear goals are present (Csikszentmihalyi et al., 2017). When an individual has clear goals, they are more likely to push forward or push harder as an activity becomes more challenging, which serves as a catalyst for testing the limits of mental and physical capacity (Csikszentmihalyi et al., 2017).

Clear goals are not always predetermined (Csikszentmihalyi et al., 2017). In fact, flexibility to add new or adjust one's goals throughout an activity or across the span of time increases the likelihood that an individual will achieve flow during a given activity (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi et al., 2017). Therefore, it can be understood that Csikszentmihalyi et al. (2017) endorse the notion that clear goals can be established prior to and/or throughout an activity. Additionally, it is significant to note that Csikszentmihalyi et al. (2017) advise against setting a goal to experience flow, as such goals decrease the likelihood of achieving flow. In summary, clear goals – whether predetermined or emergently generated – serve to keep individuals actively focused and engaged in an activity, which is essential for flow to occur (Csikszentmihalyi et al., 2017).

Unambiguous Feedback. The second antecedent of flow, unambiguous feedback, can be understood as an extension of or equal counterpart to the antecedent of clear goals (Csikszentmihalyi et al., 2017). Whereas having clear goals helps to keep an individual actively engaged in an activity, unambiguous feedback helps an individual to participate mindfully (Csikszentmihalyi et al., 2017). In this context, 'unambiguous' can be understood as a sense of clarity or precision and 'feedback' can be understood as internal and external cues (Csikszentmihalyi et al., 2017). The antecedent of unambiguous feedback can at first prove

difficult to conceptualize fully, as the short moniker bears a deceivingly passive undertone, which misrepresents the antecedent's active nature. To satisfy this antecedent, an individual must not only receive, but interpret and act upon, external and internal cues relative to the activity that they are participating in (Csikszentmihalyi et al., 2017). In this light, it can be understood that the clarity of feedback is largely determined by the mindfulness (presence of mind to notice), knowledge (capacity to interpret), and skill (ability to make performance adjustments) of the participant (Csikszentmihalyi et al., 2017).

Feedback can be sorted into two categories: internal and external (Csikszentmihalyi et al., 2017). Internal feedback refers to physiological cues generated by the body-mind, such as emotional feelings and thoughts, heart rate, sweat, ease of breath, aches or pains, fatigue, and other corporeal experiences and sensations (Csikszentmihalyi et al., 2017). Csikszentmihalyi et al. (2017) explain that kinesthetic awareness, or knowing one's own body, is an essential factor in processing internal feedback productively (p. 23). Furthermore, an individual must listen to the corporeal cues that they receive from their body-mind and adjust accordingly (Csikszentmihalyi et al., 2017; Engeser & Schiepe-Tiska, 2012). For example, whilst practicing yoga, an individual may experience discomfort and shortness of breath while in a particular pose. If the individual ignores the internal corporeal cues, the discomfort may quickly turn to pain and the practice would be interrupted and injury may even occur. In contrast, if the individual listens to the internal corporeal cues and intuitively adjusts their body to reduce discomfort and steady their breath, the practice will once again become engaging and enjoyable.

External feedback, then, refers to environmental cues, such as logistics, weather, spatial proximity, other participants, order of events, and other non-corporeal factors relevant to the activity (Csikszentmihalyi et al., 2017). In continuance of the previous example, if the individual practicing yoga is in a studio setting with a teacher and other pupils, external feedback may include instructions from the teacher, spatial proximity of their limbs to their neighbors, and

chronological sequencing of poses that denote the progression of the class. Ultimately, Csikszentmihalyi et al. (2017) explain that unambiguous feedback can be understood as listening to the body and attending to the environment (p. 23).

Balance of Challenge and Skill. As the final and most crucial antecedent of flow, balance between challenge and skill is the ultimate gatekeeper of the flow experience (Csikszentmihalyi et al., 2017). 'Challenge', in this context, can be understood as the difficulty level of an activity and 'skill' can be understood as an individual's level of mastery or self-efficacy in the given activity (Csikszentmihalyi et al., 2017). Flow can only manifest when an individual has entered the sweet spot where their skill level is perfectly matched with the difficulty of the activity (Csikszentmihalyi et al., 2017). Ultimately, to achieve flow, an individual must have a sufficient amount of skill to be successful at an activity, yet the activity must be challenging enough to keep the individual fully engaged (Csikszentmihalyi, 1990, 1997; Csikszentmihalyi et al., 2017).

Csikszentmihalyi (1997) identifies eight potential relationships between challenge and skill, which he refers to as channels of experience (Csikszentmihalyi & Wong, 1991/2014). The eight channels of experience include: arousal, flow, control, boredom, relaxation, apathy, worry, and anxiety (Csikszentmihalyi & Wong, 1991/2014). In this sense, it can be understood that flow is one of eight potential experiential outcomes based on the balance between challenge and skill. Csikszentmihalyi identifies three levels of challenge and skill: high, average, and low (Csikszentmihalyi & Wong, 1991/2014). Low challenge and low skill results in apathy, low challenge and average skill results in relaxation, and low challenge and high skill results in boredom (Csikszentmihalyi, 1997). Average challenge and low skill results in worry, whereas high challenge and low skill results in anxiety (Csikszentmihalyi, 1997). Average challenge and high skill results in control, whereas high challenge and average skill results in arousal (Csikszentmihalyi, 1997; Csikszentmihalyi & Wong, 1991/2014). Finally, high challenge and

high skill results in flow (Csikszentmihalyi, 1997). While activities falling within any of the experience channels may be pleasant in some regards, flow experiences can only manifest within the flow channel (Csikszentmihalyi & Wong, 1991/2014).

Csikszentmihalyi (1990, 1997) makes clear the important distinction that entering the flow channel does not guarantee the occurrence of flow, but rather it creates the necessary space for it to manifest. Once the omnipotent antecedent of balance between challenge and skill has been achieved, the process outcomes of flow may begin to manifest (Csikszentmihalyi et al., 2017). Flow is experienced when all nine elements (antecedents and process outcomes) simultaneously converge to form a dynamic aggregate (Csikszentmihalyi et al., 2017). If at any time an element becomes dislodged from the equation, flow will recede (Csikszentmihalyi et al., 2017). Episodes of flow range wildly in duration, from short bursts to lengthy immersions (Csikszentmihalyi et al., 2017). Additionally, an individual may enter and exit flow many times during the course of an activity as the prevalence of the nine distinct elements naturally wax and wane (Csikszentmihalyi et al., 2017).

Focused Attention. Csikszentmihalyi (1990, 1993, 1997) conceptualizes attention as psychic energy. The term 'psychic energy' in this context does not refer the art of fortunetelling, but rather to the capacity of the mind. Csikszentmihalyi (1990, 1993, 1997) explains that each individual has a finite amount of psychic energy. The amount of psychic energy an individual has at any given time is determined by a myriad of factors, such as genetics, general health, and stress level (Csikszentmihalyi, 1990, 1997). In this sense, it can be understood that psychic energy, or attention, is a commodity of sorts. Throughout a typical day in the modern Western world, individuals are perpetually bombarded with conflicting and competing requests for their psychic energy (Csikszentmihalyi, 1990, 1997). Csikszentmihalyi (1997) explains that the schema of modern Western society inherently works to inhibit concentration, as social stressors,

responsibilities, and trivial distractions cause a continuous scattering of conscious thought and the misuse of psychic energy.

In this sense, it can be understood that the average person habitually multi-tasks to their own psychic detriment (Csikszentmihalyi, 1997). A significant negative consequence of habitually divided psychic energy is that an individual fails to fully immerse themselves in any experience (Csikszentmihalyi, 1990, 1997). Without ever being truly present, an individual is deprived of rich and vibrant experiences that bring deeper meaning and satisfaction to their lives (Csikszentmihalyi, 1990, 1997). Over time, a steady stream of lackluster life experiences can result in feelings of restlessness, dissatisfaction, and despair (Csikszentmihalyi, 1990, 1997). Csikszentmihalyi (1997) explains that to combat psychic stagnation, an individual must learn to focus their attention.

Focused attention, then, can be understood as the increasingly rare phenomenon in which the entirety of an individual's psychic energy is devoted to a single task (Csikszentmihalyi, 1990, 1997). As the first process outcome of flow, focused attention is characterized by the absence of wandering or superfluous thoughts (Csikszentmihalyi, 1997; Csikszentmihalyi et al., 2017). When attention becomes focused, thoughts and feelings unrelated to the activity at hand disappear from consciousness (Csikszentmihalyi et al., 2017). Csikszentmihalyi (1997) explains that focused attention provides a sense of serenity that is largely missing in daily life. When attention is laser focused on an activity, the stress, sadness, and obligations of the social world vanish entirely, and so long as attention remains focused, an individual experiences mental and emotional freedom (Csikszentmihalyi, 1990, 1997).

Merging of Action and Awareness. Once an individual achieves focused attention, the merging of action and awareness can occur (Csikszentmihalyi, 1975/2014, p. 135). The merging of action and awareness is characterized by a sensation of effortless action during which there is

no separation between an individual's thoughts and their actions (Csikszentmihalyi et al., 2017, p. 29). When action and awareness have merged, an individual operates on an instinctual level, which allows for an override of the disembodied mind-body dichotomy that the average person is accustomed to (Csikszentmihalyi, 1975/2014, p. 135). This concept can be illustrated by considering the effortless action associated with tying one's shoelaces. While tying shoelaces, the fingers know exactly what to do and the mind and body work in unison to complete the task without any thought given to the various steps of the process.

The merging of action and awareness is made possible through striking a suitable balance between challenge and skill and achieving focused attention. In this sense, important distinctions can be made between flow experiences and the previous example of tying shoelaces. While tying shoelaces is an effortless action, an experienced shoelacer need not be focused on the task to complete it, as their skill far surpasses the challenge. In fact, tying shoelaces is likely to receive only a tiny fraction of one's attention as the mind remains disengaged and thoughts wander to other matters. In this sense, tying shoelaces requires very little attention or awareness and is done on autopilot. In comparison, during flow, the mind and body are both completely engaged. A rock climber from Csikszentmihalyi's early interviews described the merging of action and awareness as follows: "You are so involved in what you are doing, you aren't thinking of yourself as separate from the immediate activity… you don't see yourself as separate from what you are doing" (Csikszentmihalyi, 1975/2014, p. 139). In essence, once action and awareness have merged, there is no lag time between thought and action, which results in a harmonious marriage of mind and body.

Sense of Control. Sense of control is a straightforward process outcome of flow. If one considers the antecedents (clear goals, unambiguous feedback, balance of challenge and skill) and preceding process outcomes of flow (focused attention and merging of action and awareness), a sense of control can be understood as a logical and inevitable progression (Csikszentmihalyi,

1975/2014). Csikszentmihalyi (1975/2014) cautions that sense of control should not be confused with ego-related constructs such as mastery or arrogance. Instead, sense of control is best conceptualized as an absence of worry, fear, or anxiety (Csikszentmihalyi, 1975/2014). This does not imply that an individual lacks a healthy respect or appreciation for their safety, but rather that their skill level and focused attention provide them with the necessary confidence to participate in an activity without the intrusion of worrisome thoughts. (Csikszentmihalyi, 1975/2014). For example, consider two bicyclists riding down a steep hill. The first bicyclist is in a flow state, and sails down the hill with ease – fully focused on the experience and operating instinctually without a nagging fear of crashing. The second bicyclist is not in a flow state, and hurtles down the hill in discomfort – engulfed in anxiety and operating in fight or flight mode whilst consumed by the fear of crashing. In this light, it can be understood that an individual's sense of control is determined by the degree to which they fear that they could lose control (Csikszentmihalyi, 1975/2014).

Loss of Self-Consciousness. Self-consciousness is commonly conceptualized as an uncomfortable state of heightened awareness of one's real or perceived inadequacies (Csikszentmihalyi, 1975/2014). When an individual is self-conscious, they are limited by a sense of self-doubt (Csikszentmihalyi, 1975/2014). In this sense, it can be understood that the previous process outcome of flow (sense of control) facilitates the cessation of self-doubtful thoughts and behaviors. An individual that feels completely in control of themselves and their situation does not experience self-consciousness (Csikszentmihalyi, 1975/2014). Should one's sense of control falter, self-consciousness will return (Csikszentmihalyi, 1975/2014). As there are precious few instances in daily life where an individual feels totally in control of themselves and their situation, the average human experience is characterized by perpetual self-consciousness (Csikszentmihalyi, 1975/2014). Self-consciousness is a drain on psychic energy, and as such, individuals are psychically and socially burdened by chronic self-doubt (Csikszentmihalyi,

1975/2014). To experience a loss of self-consciousness, then, can be understood as an immensely liberating occurrence (Csikszentmihalyi, 1975/2014).

Beyond the cessation of self-doubting thoughts and behaviors, loss of self-consciousness during flow manifests in relief from the ego (Csikszentmihalyi, 1975/2014). The ego can be understood as an individual's sense of self that responds to social pressures of being human (Csikszentmihalyi, 1975/2014). When the ego is deactivated, an individual operates on a more primal level (Csikszentmihalyi, 1975/2014). Much like a housecat knows nothing of social pressures or existential fears, an individual in flow is temporarily relieved of these ailments. In other words, while in flow, an individual is completely aware of themselves, yet blissfully unaware that they are a self (Csikszentmihalyi, 1975/2014). An artist from Csikszentmihalyi's (1975/2014) early interviews explains loss of ego as follows: "You yourself are in an ecstatic state to such a point that you feel as though you almost don't exist" (p. 142). Loss of self-consciousness, then, may be best understood as a state in which a human is temporarily freed from the ego-driven confines of their human-ness (Csikszentmihalyi, 1975/2014).

Distortion of Time. When an individual disengages from their ego and enters the primal space where social obligations no longer exist, the construct of time becomes irrelevant and the experience of time is altered (Csikszentmihalyi et al., 2005/2014). Flow presents the unique opportunity for individuals to "escape the tyranny of time" (Csikszentmihalyi et al., 2017, p. 35). In the modern Western world, daily life is controlled by the construct of time (Csikszentmihalyi, 1990, 1993, 1997). From public to intimate spaces, clocks are mounted nearly everywhere. Wrist watches and cellphone clocks serve as personal beacons of time orientation. As such, the average person finds themselves perpetually counting down the minutes until something ends or something begins, which makes it difficult to be fully present in any given moment (Csikszentmihalyi, 1993). Furthermore, awareness of time, in most circumstances, is an indicator of boredom or stress (Csikszentmihalyi et al., 2005/2014). While in flow, an individual is

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completely focused, in control, and engaged in an activity, which leaves no space for boredom or stress to manifest. As such, during flow, the construct of time recedes from consciousness.

Without an emphasis placed on the clock, the experience of time is altered. In retrospect, flow-ers, or those that flow, report that hours can pass by in what feels like only minutes and that minutes can seem to contain what feels like hours of experience (Csikszentmihalyi et al., 2005/2014). For example, at the conclusion of a 90-minute yoga class, a yogi that was in flow may have the sensation that the time elapsed in the blink of an eye. Conversely, at the bottom of the slope, a downhill skier that was in flow may have the sensation that their six-minute run had lasted much longer. In either case, the experience of time for each flow-er was positively altered by their complete immersion in the activity. Nakamura and Csikszentmihalyi (2002/2014) report that it is most common for flow-ers to experience the sensation that time has passed faster than it actually has. With time suspended from relevance, an individual in flow temporarily exists within their own "self-contained world" (Csikszentmihalyi & Nakamura, 1989/2014, p. 199).

Intrinsic Motivation. As the final process outcome of flow, the manifestation of intrinsic motivation can be imagined as the apotheosis of flow's many moving parts. In this sense, it can be understood that intrinsic motivation is a byproduct of flow rather than a prerequisite (Csikszentmihalyi et al., 2017). Although many conceptualizations of intrinsic motivation exist, flow theory is based on an activity-oriented model of intrinsic motivation (Landhäußer & Keller, 2012). Landhäußer and Keller (2012) offer the following description of activity-oriented intrinsic motivation: "Activities are seen as intrinsically motivated when the main incentive lies in the performance of the activity itself, while activities are seen as extrinsically motivated when the main incentive lies in its expected results" (p. 69). In his writings, Csikszentmihalyi further conceptualizes intrinsic motivation as participation in the absence of immediate awareness of external reward or obligation (Csikszentmihalyi, Graef, & McManama Gianno, 1983/2014; Csikszentmihalyi, 1990, 1997). In contrast, extrinsic motivation can then be understood as

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participation in the presence of immediate awareness of external reward or obligation

(Csikszentmihalyi et al., 1983/2014).

Csikszentmihalyi's emphasis on immediacy of awareness is pivotal for two main reasons.

First, a focus on *immediacy* endorses the notion that motivation is dynamic rather than static, and

therefore, individuals may naturally vacillate between intrinsic and extrinsic motivation

throughout any activity (Csikszentmihalyi et al., 1983/2014). Second, a focus on awareness of

(rather than on the presence of) external rewards or obligations endorses the notion that

participation in an activity can become intrinsically motivated even when extrinsic rewards and/or

obligations are present (Csikszentmihalyi et al., 1983/2014). When a flow experience manifests,

awareness of extrinsic reward or obligation completely vanishes from consciousness, and for the

duration of the flow experience, the activity is intrinsically rewarding.

Intrinsic rewards can be challenging to conceptualize, as they are experienced internally,

and therefore highly subjective and largely intangible. In this sense, to simply say that an activity

is intrinsically rewarding is not terribly illustrative. Csikszentmihalyi et al. (1983/2014) bring the

concept into greater focus by explaining that the preceding process outcomes of flow (focused

attention, merging of action and awareness, sense of control, loss of self-consciousness, and

distortion of time) are intrinsic rewards. In this light, it can be understood that the intrinsic

rewards experienced during flow are what gives the experience meaning and value

(Csikszentmihalyi, 1990, 1993, 1997; Csikszentmihalyi et al., 1983/2014).

"The Dark Side of Flow"

Flow has been described as the ultimate state of psychic negentropy, but is flow always

good, positive, and socially acceptable? Csikszentmihalyi (1990) acknowledges that, no, it is not.

In this regard, Csikszentmihalyi (1990), states, "The flow experience, like everything else is not

'good' in an absolute sense" (p. 70). While flow is conceptualized as an optimal experience,

'optimal' is subjective and therefore there is space for flow to manifest during activities that are dangerous or largely considered socially unacceptable (Schüler, 2012). Furthermore, due to the profound nature of flow experiences, some literature suggests that individuals may become addicted to flow (Schüler, 2012). Literature on antisocial and addictive flow, while not plentiful, is compelling. The following sub-sections will include delineation of the limited literature on "the dark side of flow" (Partington, Partington, and Oliver, 2009).

Antisocial Flow. Antisocial, in this context, describes activities that fall outside the boundaries of traditional social values (Schüler, 2012). Flow can manifest during any activity, according to Csikszentmihalyi (1997), as long as the necessary elements are present – and this does not exclude antisocial activities. For example, recreational crime has long been a precarious issue in the field of leisure studies, as it is decidedly antisocial yet commonly performed in the leisure space (Rojek, 1999; Williams & Walker, 2006; Williams, 2009). Topalli (2006) studied the phenomenon of autotelic crime, or crime committed purely for the sake of enjoyment. Topalli's (2006) qualitative study focusing on motivation and prevalence of guilt in "hardcore street offenders" yields the finding that for a select group of street criminals, crime and violence is simply fun. A Topalli (2006) interviewee called Junebug provided the following description of their criminal activities:

> "You know it's illegal what I'm doing. But I don't feel sorry about what I'm doing, about what I do to a person. I do it because I like to do it. I don't think that I will ever stop doing these robberies until the day that somebody kill me. There is nothing in the world that would stop me from doing it. I'm gonna do this until the day I die. Because I like doing it. It's fun to me, it's real fun to me" (p. 489).

Despite the obvious dangers of street crime, some criminals are willing to risk it all for the sake of the thrilling experience (Topalli, 2006), which Csikszentmihalyi (1997) identifies as common of flow experiences as well. Many of the Topalli (2006) interviewees reference a "rush" associated with committing crime. In that regard, a Topalli (2006) interviewee called Blackwell compared the experience of committing crime to a drug induced high that kept him coming back for more. Regardless of external rewards, such as money, drugs, or power, Topalli's (2006) study revealed that for some street criminals, the experience of committing crime is so intrinsically rewarding that they continue to partake in such activities despite significant risks to their life and freedom.

While palatable recreational crime (e.g. theft, vandalism, pick pocketing) has been given healthy academic consideration in the field of leisure studies (Williams & Vincent, 2018; Williams, 2009), mephitic criminal leisure pursuits have been given very little consideration (Rojek, 1999). Mephitic leisure, according to Rojek (1999), refers to activities done in the leisure space that are abhorrent in nature and socially irredeemable, such as serial murder. Recreational violence is both a sensitive and controversial topic in the field of leisure studies, which has led to a deficiency in literature on the phenomenon (Stebbins, Rojek & Sullivan, 2006). However, examination of the habits of prolific serial killers has revealed serious leisure and project-based leisure patterns (Williams & Vincent, 2018), as described by Stebbins (2005), which include in-depth planning, practicing, and savoring (Rojek, 1999). For some serial killers, Rojek (1999) explains, serial murder is experienced as enlightening, deeply rewarding, and autotelic. In this sense, it is not a large leap to understand that the activity of killing for enjoyment may offer opportunities for flow experiences.

Williams (2017) conducted a leisure-oriented case study of documents from the trial of Dennis Rader, the infamous "BTK" killer. Williams (2017) utilizes flow theory as a lens to examine Rader's serial killing activities. While recounting his individual crimes, Rader explains

that during murders in which the challenge exceeded his skill, he felt frustrated and anxious, and struggled to maintain control (Williams, 2017). After struggling in the early years of his serial killing career, Rader's improved skills and confidence allowed for him to have more enjoyable killing experiences (Williams, 2017). Additionally, Rader continuously found ways to increase the challenge and risk during his murders (Williams, 2017), which Csikszentmihalyi (1997) explains is essential for experiencing flow across the span of time in a single activity. The findings of Williams' (2017) study reveal that there is evidence to support the notion that flow theory is applicable to the activity of serial murder.

The recreational activity of serial murder is not the only source of killing known to provide the necessary stimulus for flow (Schüler, 2012). Flow experiences during combat have also been described by soldiers (Harari, 2008; Schüler, 2012). Through analysis of combat narratives, Harari (2008) discerned that despite the negative aspects of combat (such as taking lives), many soldiers described their experiences in battle as positive. The kill or be killed atmosphere of combat is the perfect catalyst for flow, as an individual is forced to exercise extreme goal-oriented focus, to the point where nothing else exists (Harari, 2008). While engaged in combat, soldiers describe feeling "perfect clarity of mind", a heightened sensation of "being alive", optimal physical functioning, effortless action, and the merging of action and awareness (Harari, 2008, p. 255). A Vietnam veteran wrote of combat flow in his memoir:

> "Under fire, a man's powers of life heightened in proportion to the proximity of death. His senses quickened, he attained an acuity of consciousness at once pleasurable and excruciating. It was something like the elevated state of awareness induced by drugs. And it could be just as addictive, for it made whatever else life offered in the way of delights or torments seem pedestrian" (Harari, 2008, p. 255).

Furthermore, soldiers report an aching or longing for the "ecstasy" of war after they have returned home (Harari, 2008, p. 255). Csikszentmihalyi (1997) asserts that flow is so powerful that individuals will sometimes go to extremes to experience it again, which is echoed by some combat soldiers. Another soldier explains, "…it is an intoxication beyond all intoxication, an unleashing that breaks all bonds. [In combat] the individual is like a raging storm, the tossing sea and the roaring thunder. He has melted into everything" (Jünger, 1922, in Harari, 2008, p. 255). Well aware of the horror that war truly is, soldiers that experienced combat flow are confounded by a burning desire to return to warzones so they can feel alive once again.

Addiction to Flow. Csikszentmihalyi (1997) explains that flow experiences are so powerfully profound, that individuals will crave flow and even go to extreme lengths to continue experiencing it. As demonstrated in the previous sub-section, street criminals, combat soldiers, and serial murderers experience a craving for flow that is so strong that they are willing to risk their life to achieve it. In fact, many of the street criminals and combat soldiers liken their desire for flow to an addiction in the sense that they have an insatiable desire for more. Furthermore, the street criminals and combat soldiers describe flow as euphoric, surreal, and drug-like. The habit-forming nature of the flow experience is not limited to illegal or antisocial behavior. In other words, there is such thing as too much of a good thing.

Literature on flow addiction is scarce. Partington et al. (2009) offer a unique glimpse into the phenomenon in their study of flow dependence in big wave surfers. Partington et al. (2009) found that for the 15 world class big wave surfers interviewed in their study, flow was not only prevalent, but polarizing. Furthermore, Partington et al. (2009) found that due to their pursuit of flow, many of the interviews placed priority on surfing at the expense of personal safety and social relationships. In relation, one surfer explains their disregard for bodily safety: "I am willing to take the chance of you know, of any pain or suffering it might cause over the benefits of the rush" (Partington et al., 2009, p. 179). Another surfer illustrates the social costs:

"My husband like wants to have babies. I kinda don't cause I want to keep surfing you know? Gosh it's kinda like once you are in it, you are almost stuck in it almost, you know? It's like you are in the club and in order to keep doing it, you have to keep doing it all the time" (Partington et al., 2009, p. 179).

Partington et al. (2009) report that in many instances, the big wave surfers referred to their relationship with surfing as an addiction and to flow as a drug. One surfer explains: "You just get a taste of it and I think it becomes addictive almost. It's something you can't quench, you can't satisfy and you chase it" (Partington et al., 2009, p. 179). Another surfer remarks, "We actually get high off it" (Partington et al., 2009, p. 179). In a different light entirely, one surfer with a history of substance abuse offers a bleak sentiment: "The same reason that I did drugs is the same reason that I do big wave riding, and that's sad… If you were a confident, emotionally stable person, you are confident as to why you are on this planet there is no reason to go over the speed limit…" (Partington et al., 2009, p. 182). Ultimately, Partington et al. (2009) conclude that many of the big wave surfers within their study exhibit various signs of exercise dependence, which is associated with an insatiable desire to experience flow while surfing.

Outside of the sports world, flow has also been found to play a role in internet addiction (Schüler, 2012). Much like the experiences of big wave surfers, flow during online gaming and shopping can have a polarizing effect (Schüler, 2012; Stavropoulos et al., 2018). A longitudinal study conducted by Stavropoulos et al. (2018) examined the association between flow and adolescent internet addiction. Stavropoulos et al. (2018) found that higher flow scores were associated with higher internet addiction symptoms (p. 168). Furthermore, Stavropoulos et al. (2018) explain that flow contributes to higher online gratification, which may have an association with risk for addiction. In contrast, Yang, Lu, Wang, and Zhao (2014) found that although flow

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experiences during internet use can contribute to internet addiction, flow can also have a positive effect, especially when coupled with protective factors, such as social supports. This finding is supportive of Csikszentmihalyi's (1997) assertion that although flow can be used towards both positive and negative ends, to disregard flow because the potential to misuse it exists, would be a grave mistake (p. 70).

Connecting Substance (Ab)use and Flow Theory

Overview

Substance (ab)use presents a unique challenge to flow theory. The current section will connect substance (ab)use to flow theory in several ways. First, the current section will address the reasons that intoxication prohibits flow. Second, the current section will discuss the phenomenon in which intoxication feels like flow (mimetic flow). Third, the current section will isolate heroin as a preeminent substance for the study of mimetic flow. And finally, the current section will conclude with delineation of the potential therapeutic value of flow and mimetic flow in the treatment of heroin addiction.

The Mutual Exclusivity of Drug Intoxication and Flow

While Csikszentmihalyi (1990, 1997) has stated that nearly any activity can produce flow if the proper conditions are in place, flow and substance (ab)use (intoxication) are mutually exclusive experiences. One may wonder how antisocial acts, such as combat and serial murder, can facilitate flow while intoxication cannot. The main reason for this, Csikszentmihalyi et al. (2017) explain, is that intoxication is not a naturally occurring state of mind. Csikszentmihalyi et al. (2017) warn that although intoxication may seem similar in effect to flow at times, it should never be confused with flow. While flow is consciousness-expanding, intoxication is consciousness-bending or consciousness-reducing; while flow is reality-confirming, intoxication is reality-distorting (Csikszentmihalyi, 1990). In elaboration, Csikszentmihalyi et al. (2017) state:

"Flow is not a form of escapism, nor does it come with a host of side-effects that accompany psychedelic and hallucinogenic drugs that people might use to feel similar effects. Flow is about engagement, control, and highly focused attention. Alcohol, drugs, and other forms of consciousness bending all lead to the opposite effect" (p. 26).

In this sense, it can be understood that the experience of intoxication may results in acute feelings of heightened well-being and functioning, but once the effects have worn off, the individual is left feeling worse than before the experience (Csikszentmihalyi, 1997). Csikszentmihalyi (1997) explains that in the wake of flow, one feels completely invigorated and happy, while in the wake of heavy alcohol or drug use one feels listless, dissatisfied, and apathetic (p. 66). In psychological terms, intoxication is a state of psychic entropy, which is characterized by disorganized and diminished psychic energy (Csikszentmihalyi, 1990, 1997).

Additionally, flow requires and results in opportunities for personal growth (1990, 1997). Personal growth leads to development of a coherent self (Csikszentmihalyi, 1990, 1997). Generally, habitual substance (ab)use is counterintuitive to development of a coherent self, as it associated with scattered psychic energy, poor decision making, and feelings of low self-worth (Csikszentmihalyi, 1990, 1997). In other words, substance (ab)use does not lead an individual towards an excellent life, as the content of intoxicated experience is artificial and disabling, which violate the positive quintessence of flow (Csikszentmihalyi, 1997).

This is not to say, however, that alcohol and substance (ab)use do not manifest in altered states that *feel* like flow (Delle Fave & Massimini, 2003; Csikszentmihalyi, et al., 2017). In fact, it is commonly noted in the literature that drug intoxication may mimic flow (Delle Fave & Massimini, 2003). In most literature, discussion of this phenomenon ends before it even begins and the reader is left only with the knowledge that the author suspects that the phenomenon is

occurring. Delle Fave and Massimini (2003) contribute the most comprehensive body of knowledge regarding the aforementioned phenomenon, which they call mimetic flow.

Mimetic Flow

Mimetic flow is a term used to describe the phenomenon in which an individual has a flow-like experience while intoxicated (Delle Fave & Massimini, 2003). In this sense, it can be understood that intoxication can mimic the effects of a naturally occurring flow experience. In the only empirical or systematic study on the topic, Delle Fave and Massimini (2003), "draw a comparison between the experience associated with drug intake and optimal experience" (p. 2). Delle Fave and Massimini (2003) administered the Flow Questionnaire to 61 individuals recovering from SUD. The Flow Questionnaire is a short instrument that determines the prevalence of flow (whether flow has been experienced or not) and reveals the activities that an individual associates with flow (Delle Fave and Massimini, 2003). Of the 61 participants in their study, 13 identified drug use as a source of flow (Delle Fave and Massimini, 2003, p. 5).

In addition, Delle Fave and Massimini (2003) asked participants to rank their experiences during drug use, using a 0-8 Likert scale, which included cognitive, affective, and motivational variables (p. 5). The cognitive, affective, and motivational variables reflect various elements of the flow experience, which Delle Fave and Massimini (2003) utilize to draw comparisons between drug intake and flow. In relation, Delle Fave and Massimini's (2003) report that drug intake is characterized by low challenge, lack of goals (aside from getting intoxicated), diminished control, and absence of intrinsic motivation (p. 7). Delle Fave and Massimini (2003) conclude that drug intake is a source of mimetic flow.

While the Delle Fave and Massimini (2003) study is groundbreaking, it is limited in scope and application. While Delle Fave and Massimini (2003) acknowledge that each substance has unique subjective effects, this was not controlled for or explored in their analysis. Therefore,

the results of the Delle Fave and Massimini (2003) study reflect substance (ab)use in general and do not provide substance-specific insights, such as which substances may provide the most flow-like experiences. Additionally, Delle Fave and Massimini (2003) do not include qualitative data to nourish their quantitative findings. In this sense, it can be understood as a limitation that the flow-like experiences associated with drug use have not been delineated in the participants' own words. In this spirit, the current study seeks to add to Delle Fave and Massimini's (2003) important work by isolating a single substance (heroin) and exploring it through the descriptions of those that have lived it.

Heroin

Heroin has been selected as the substance of focus in the current study. This selection was made for two reasons. The first reason is heroin's acute social relevance. Heroin (an opioid drug) is at the center of the opioid emergency in the U.S. (U.S. Office of Health and Human Services, 2017). According to the U.S. Office of Health and Human Services (HHS), approximately 130 people die from opioid overdose each day in the U.S. (2018). Furthermore, the U.S. Office of HHS (2018) identified the conception of better treatment and recovery services as the first point of its 5-point strategy to combat the opioid crisis. As such, all healthcare disciplines, including recreational therapy, are in a position to answer the call for new and innovative treatment services (HHS, 2017).

The second reason is the prevalence of obvious global similarities between heroin intoxication and flow. Global, in this context, refers to the bigger picture. Flow is a state of consciousness in which time and space temporarily cease to exist and an individual experiences liberation from the burdens of their human form (Csikszentmihalyi, 1990, 1997). In comparison, heroin intoxication is an altered state of reduced consciousness, or unconsciousness in some

cases, in which time and space temporarily cease to exist and an individual experiences liberation from the burdens of their human form (Foddy & Savulescu, 2010).

While most substances result in a consciousness-bending experience in which perception of reality is distorted, heroin intoxication results in a state of reduced consciousness in which reality is completely void (Foddy & Savulescu, 2010). The complete escape from consciousness that heroin intoxication provides is ostensibly similar to the freedom from self-consciousness (ego) that flow provides. Individuals have reported that flow offers them the gift of temporary non-existence (Csikszentmihalyi, 1975/2014), which is a sentiment heartily echoed by those describing heroin intoxication (Foddy & Savulescu, 2010).

The subjective experience of heroin intoxication is neglected in the literature. The experience of heroin intoxication, while known to be profound to the user, is commonly reduced to simple one-word descriptors in the literature, such as analgesia, euphoria, relaxation, excitement, and pleasure (Kosel et al., 2008, p. 279), which fail to nourish clear understanding of the immensity of the experience. Kunstler (2015) identifies the effects of opioid intoxication as, "Quick, intense feeling of pleasure followed by a sense of well-being and calm; decreases pain, causes lethargy, lack of motivation, drowsiness, slow pulse" (p. 91). Foddy & Savulescu (2010) describe heroin intoxication as a state of oblivion, which is perhaps more reflective of the heroin experience than the sum of all other one-word descriptors combined. In fact, the sense of oblivion experienced during heroin intoxication is, essentially, the point where heroin and flow most obviously intersect.

Flow as Therapy

The notion that flow may have therapeutic value in recovery from SUD has been highlighted by Delle Fave & Massimini (2003). In fact, Delle Fave & Massimini (2003) state that the findings of their study support the possibility that the similarities between drug intake and

natural flow "could be usefully exploited in treatment" (p. 2). In essence, Delle Fave &

Massimini (2003) suggest that the incorporation of naturally occurring flow experiences in

treatment and recovery may be a fruitful way to compensate for the loss of heroin by filling the

experiential gap and facilitating construction of a new non-addict identity. While

Csikszentmihalyi does not reference recreational therapy, he unknowing references the

discipline's work. Of leisure, Csikszentmihalyi (1997) states, "Having leisure at one's disposal

does not improve the quality of life unless one knows how to use it effectively, and it is by no

means something one learns automatically" (p. 65). In this spirit, the current study aimed to

deepen understanding of the positively experienced aspects of heroin intoxication so that the

knowledge gained might contribute to the future development of innovative treatment

interventions that are sensitive to the unique experiential leisure needs of individuals recovering

from heroin addiction.

Summary of Key Points

Leisure, when liberally conceptualized, can be understood as free time (Klieber, 2013).

Such a definition allows for the exploration of substance (ab)use in the leisure context (Klieber,

2013). Leisure has been shown to play an integral role in the pursuit and maintenance of sobriety

and recovery for individual's with SUD (Henderson & Gardner, 1996; Hood, 2003; Kunstler,

2015). As leisure skills are not innate (Csikszentmihalyi, 1997), recreational therapy offers

important opportunities for individuals with SUD to cultivate lifesaving and sobriety-protecting

leisure skills for coping and diversion (Kunstler, 2015). Additionally, as fulfilling leisure

promotes self-discovery, meaning making, and renewed sense of purpose, recreational therapy

interventions may support individuals with SUD in constructing a new non-addict identity (Hood,

2003). Flow theory has been conceptualized as both a foundational theory informing the practice

of recreational therapy and as a robust theoretical lens for the current study.

Flow is an optimal experience with nine distinct elements: clear goals, unambiguous feedback, balance between challenge and skill, focused attention, merging of action and awareness, sense of control, loss of self-consciousness, distortion of time, and intrinsic motivation (Csikszentmihalyi et al., 2017). Limited research has found evidence that drug intoxication can mimic the effects of flow, which is a phenomenon called mimetic flow (Delle Fave & Massimini, 2003; Delle Fave et al., 2011). The prevalence of mimetic flow during drug use presents the notion that naturally occurring flow may have unexplored clinical value (Delle Fave & Massimini, 2003; Delle Fave et al., 2011). The subjective effects associated with intoxication vary by substance (Delle Fave & Massimini, 2003; Foddy & Savulescu, 2010) and as such, it makes good sense to examine the flow-like properties of individual substance types. Heroin has been selected as the substance of focus in the current study for two reasons: social relevance and apparent global subjective similarities. To discover insights on the relevancy of flow theory in the treatment of heroin addiction, the current study explored heroin intoxication through the lens of flow theory.

CHAPTER III

METHODOLOGY

Overview

The purpose of the current study was to explore the experience of heroin intoxication through the leisure lens of flow theory in order to gain deeper understanding of the ways in which heroin intoxication is similar to flow. The current study addressed the following research question: in what ways, if any, is heroin intoxication similar to flow? A qualitative approach was selected for the current study for two main reasons. First, the purpose of the current study was exploratory in nature and entailed the gathering of knowledge about a previously unstudied phenomenon. In such cases, qualitative studies are often most appropriate, as they allow for the generation of preliminary understanding of a phenomenon upon which future scholarship can be informed (Patton, 2015). Second, the subject matter of the current study was decidedly subjective. Therefore, first-hand accounts of the phenomenon as told by those who have lived it, were the richest possible data source (Miller, Strang, & Miller, 2010; Patton, 2015).

The current study utilized a variation of qualitative content analysis (QCA) called directed qualitative content analysis (*d*QCA), which is a systematic and theory-driven method for analyzing textual data (Schreier, 2012). The contents of the current chapter include:

introduction to the data source, overview of the research methodology, delineation of data collection methods and the research sample, and detailed step-wise review of data analysis and interpretation procedures. Additionally, matters of trustworthiness are nested within and interwoven throughout each section of the current chapter.

Data Source

The research sample for the current study was obtained exclusively from Erowid.org (Erowid). Erowid is a curated online database dedicated to collecting and publishing narrative-style psychoactive drug experiences (Erowid, n.d.). The narrative-style psychoactive drug experiences are referred to as 'experience reports' by Erowid and are organized by drug type in the 'Erowid experience vaults' (Erowid, 2018). Erowid experience reports are anonymous (Erowid, 2018). Experience reports are voluntarily submitted to Erowid.org under an alias chosen by the author and a report identification number is generated for each report (Erowid, 2018). Once a report has been published in the experience vault, it can be viewed by the public and downloaded in PDF format for research purposes.

Erowid experience reports have been utilized in many medical studies to deepen understanding of various drug experiences (Erowid, 2018). Erowid requires researchers using their data to adhere to a collection of guidelines to ensure ethical and appropriate use of their experience reports (Appendix A). The researcher for the current study requested and obtained permission to utilize Erowid experience report data for the current study and agreed to fulfill all of the stipulations of agreement communicated through correspondence with Erowid staff (Appendix B).

Trustworthiness of the Data Source. Across all forms of QCA, the first matter of trustworthiness is the data source (Elo et al., 2014). Two major areas for consideration include: salience of the research sample and suitability of the data source (Elo et al., 2014). The term

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salient, or salience, was selected by the researcher of the current study to convey the need for

utilizing the richest possible research sample (Patton, 2015; Schreier, 2012). Salience can be

understood as the extent to which the sample reflects the richest possible descriptions of the

phenomenon being studied (Elo et al., 2014). In other words, first-hand accounts given by those

who have lived an experience are more salient than second-hand accounts by those that have seen

others have the experience. A trustworthy QCA utilizes a sample of individuals that have the best

knowledge of the research topic (Elo et al., 2014). Most commonly, to improve trustworthiness,

purposive sampling is utilized in QCA studies, as this sampling method allows for the researcher

to select a sample that best captures rich lived knowledge of the research topic (Elo et al., 2014).

As first-hand accounts of heroin intoxication, Erowid experience reports are a highly salient data

source.

In relation to suitability, Elo et al. (2014) explain that some data sources are more

suitable for QCA than others. Unstructured data sources, such as diary entries and unstructured

interviews, are most suitable for QCA as the chance for the researcher influencing the data are

drastically reduced (Elo et al., 2014). In relation to the current study, the data are general

narrative-style heroin experience reports collected by a third party (Erowid), and therefore written

without pollution from the researcher. In this sense, it can be understood that the current study

utilized a pure data source, as the data are uninfluenced by the researcher or the researcher's goals

and interests. Therefore, the utilization of strictly unstructured data demonstrates that the data

source for the current study was trustworthy (Elo et al., 2014).

It is important to note that Erowid cannot verify the authenticity of the experience reports

that they publish (Erowid, 2018). In other words, while it is presumed that the reports are genuine

accounts of the heroin experience written by those that have lived it, it is possible that the

experience reports contain untruths, exaggerations, and false memories. However, it should be

understood as a delimitation that trained Erowid staff review each experience report for markers

of authenticity prior to its publication in their experience vaults (Erowid, 2018). Furthermore, Erowid informed the researcher of the current study that their staff are scrupulous in the authentication screening process, and as a result, only publish fifty percent of the experience reports that they receive (Erowid, 2018). Additionally, analysis of a large sample size may increase the trustworthiness of a QCA, as it provides a higher level of meaning saturation (Elo et al., 2014). In relation to the current study, the Erowid database offered nearly 300 heroin experience reports at the time of data collection. As such, it can be understood that even if there were a few inaccuracies within the experience reports, the inaccuracies were absorbed by the remainder of the data, and therefore not misleading to the researcher's analysis (Elo et al., 2014).

Data Collection

Data collection for the current study began in November, 2018 after the researcher received approval to conduct non-human subjects research from the Institutional Review Board at Oklahoma State University (Appendix C). At the time data were collected for the current study, there were 296 heroin experience reports published in the Erowid data base. The researcher began data collection by downloading a PDF version of each of the 296 heroin experience reports. Next, the researcher read each heroin experience report to assess whether it was suitable for inclusion in the research sample. The experience reports included in the research sample met all three of the following inclusions criteria:

- Purity: The experience report was strictly related to heroin use; not an experience mixed with the use of other substances; the report was a first-person account (Elo et al., 2014). The term 'purity' was selected by the researcher of the current study to represent this inclusion criterion.

- Age: The author of the experience report was 18 years of age or older at both the time of experience and reporting. The author was assumed to be 18 years of age or older unless otherwise stated in the experience report.

- Vividness: The experience report contained a vivid description of the heroin experience, as opposed to only vague sentiments (e.g. 'That felt amazing' or 'That was fun'). An experience report needed only a single instance of vivid description of the heroin experience to be included in the research sample (i.e. even if an experience report contained only a single vivid sentence, it was included in the sample). The purpose of the vividness criterion was to exclude experience reports that did not provide adequate description of the heroin experience. The term 'vividness' was selected by the researcher of the current study to represent this inclusion criterion.

Research Sample

Of the 296 available heroin experience reports, 101 reports were selected for inclusion in the research sample of the current study. Of the 195 heroin experience reports excluded from the research sample, 21 reports were excluded due to not meeting age criteria, 84 reports were excluded due to not meeting purity criteria, and 90 reports were excluded for not meeting vividness criteria. Various methods of heroin administration were reflected in the research sample: intravenous (44), insufflation (sniffing/snorting) (28), multiple/mixed methods (15), smoking (7), and unspecified methods (7). Demographic information included in the heroin experience reports indicated that 65 members of the research sample identify as male, 31 members of the research sample identify as female, and five members of the research sample did not specify their gender.

Methodological Overview

It is best practice that the purpose of a study and related research question(s) serve as the determinant of the methods used to analyze and interpret the data (Patton, 2015). The purpose of the current study and related research question, paired with the use of narrative data, made directed qualitative content analysis (*d*QCA) the most appropriate method (Hsieh & Shannon, 2005; Patton, 2015; Schreier, 2012). *d*QCA is a form of qualitative content analysis (QCA), which is a commonly used methodology in qualitative research (Hsieh & Shannon, 2005; Schreier, 2012). There are three forms of QCA, which share certain core qualities, yet differ slightly in procedure to accommodate different purposes (Hsieh & Shannon, 2005). QCA will now be briefly summarized and *d*QCA will be discussed in detail.

Qualitative Content Analysis (QCA). QCA can be understood as, "…a research method for the subjective interpretation of the content of text data through the systematic classification process of coding…" (Hsieh & Shannon, 2005, p. 1278). QCA is generally used to deepen knowledge and understanding of a phenomenon through the systematic analysis of written content (Hsieh & Shannon, 2005). QCA is known for three distinct characteristics, which set it apart from other methods in the qualitative tradition (Schreier, 2012). QCA is: systematic, flexible, and it reduces data (Schreier, 2012).

QCA is systematic in the sense that it has specific steps, which are completed in a repetitive linear order (Schreier, 2012). A repetitive linear order, in this context, refers to the fact that several steps of QCA are repeated more than once across the span of time before the researcher begins the next step. Due to the systematic nature of QCA, results are characterized by internal consistency, which provides a favorable baseline of trustworthiness and replicability for any QCA study (Elo & Kyngäs, 2008; Schreier, 2012).

QCA is flexible in the sense that the coding frame and codes are not standardized, which is often the case in other instances of both qualitative and quantitative coding (Schreier, 2012). The flexible nature of QCA means that the coding frame functions as dynamic rather than static, even when directed by preexisting theory or research (Schreier, 2012). In this way, emergent dimensions of the data related to the research question(s) can be incorporated into the coding frame during the coding process (Schreier, 2012).

Finally, QCA is data reducing in the sense that it involves filtering large data sets to discard any noise (Schreier, 2012). Noise, in this context, can be understood as content erroneous to the research question(s) (Schreier, 2012). The data reduction process provides the researcher with a narrowed path through the data, which keeps the final analysis tightly coiled to the purpose of the study (Schreier, 2012).

Directed Qualitative Content Analysis (*d*QCA). *d*QCA is a form of QCA that is utilized in instances in which the research purpose is to explore a phenomenon through the lens of an existing theory (Hsieh & Shannon, 2005). The research purpose for the current study was to explore the experience of heroin intoxication through the lens of Csikszentmihalyi's flow theory, and as such, *d*QCA was the most appropriate form of QCA to use (Assarroudi et al., 2018; Hsieh & Shannon, 2005). *d*QCA is the most structured form of QCA, as the majority of the main dimensions for analysis are established *a priori* from existing theory rather than organically from the data (Hsieh & Shannon, 2005). The structured nature of *d*QCA, in conjunction with the systematic nature of QCA in general, provide the researcher with a tight focus within their research process (Hsieh & Shannon, 2005; Schreier, 2012).

There is more than one accepted procedure for conducting *d*QCA (Assarroudi et al., 2018). Among the most commonly cited *d*QCA methods, Hsieh and Shannon (2005) offer a straightforward and adaptable roadmap for conducting *d*QCA with non-interview data. The Hsieh

and Shannon (2005) method of *d*QCA can be conceptualized as a six-step method. As a result of an in-depth literature review of best *d*QCA practices, Assarroudi et al. (2018) offer several recommendations to strengthen the Hsieh and Shannon (2005) method. To improve trustworthiness, the recommendations from Assarroudi et al. (2018) were incorporated in the design of the current study. The process of *d*QCA will now be delineated in detail.

Data Analysis

The current study followed the six step *d*QCA process delineated by Hsieh and Shannon (2005). The six steps of *d*QCA include: creating a theory-driven coding frame, immersion in the data, reduction of the data, coding the data, interpreting the coded data, and reporting the findings (Hsieh & Shannon, 2005). Additionally, Assarroudi et al. (2018) recommend conceptualizing *d*QCA as having three distinct phases: preparation, analysis, and reporting. When combining the three-phase conceptualization of Assarroudi et al. (2018) and the six-step process of Hsieh and Shannon (2005), as illustrated in Figure 1, it can be understood that the preparation phase includes steps one through three, the analysis phase includes steps four and five, and the reporting phase includes the final step.
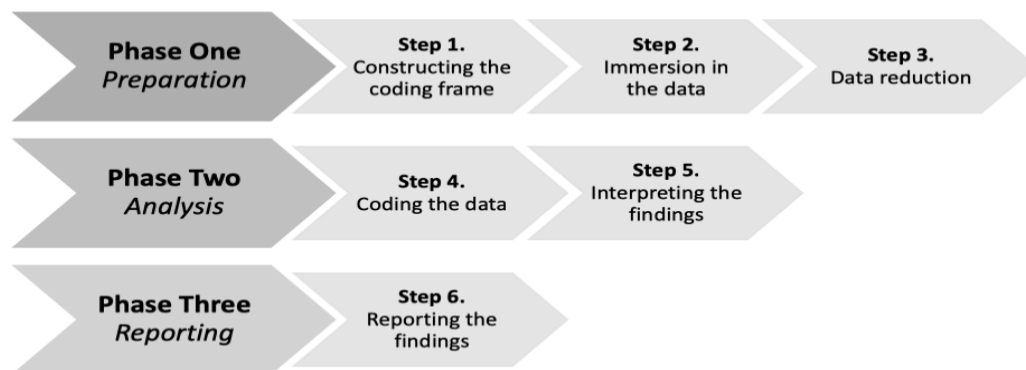
Figure 1. Phases and Steps of *d*QCA (Adapted from Assarroudi et al., 2018; Hsieh & Shannon, 2005).

The purpose of the *preparation phase* is to construct a strong theory-driven coding frame and to prepare the data for analysis (Assarroudi et al., 2018). The purpose of the *analysis phase* is to analyze the data using the coding frame and to interpret the findings through the guiding theory (Assarroudi et al., 2018). And finally, the purpose of the *reporting phase* is to clearly describe the entire research process and report the findings of the *d*QCA (Assarroudi et al., 2018). Csikszentmihalyi's flow theory was the central point of orientation throughout all six steps of the *d*QCA process in the current study. Each of the six steps will now be discussed in detail with an express focus on operational and analytical processes and matters of trustworthiness.

Creation of a Theory-Driven Coding Frame. The first step in *d*QCA is creating a theory-driven coding frame (Hsieh & Shannon, 2005). Creation of the coding frame marks the start of the preparation phase. A coding frame is much like a compass that guides the researcher throughout the entire *d*QCA process. In keeping with the compass metaphor, the coding frame serves to keep the researcher oriented towards true north. True north, in this context, is the research question(s). Qualitative research generally entails massive amounts of textual data, which can be both overwhelming to the researcher and polluting to a study (Schreier, 2012). The coding frame provides a clear path through the data and keeps the researcher focused only on elements within the data that are relevant to the research question(s) (Schreier, 2012).

The coding frame, as Schreier (2012) explains, is the heart of every QCA. Although coding is a commonly used method in qualitative research, coding in QCA is different from other qualitative coding methods due to use of a predetermined data reducing coding frame (Schreier, 2012). The coding frame in QCA is used in multiple ways from the very start to the very end of the research process (Schreier, 2012). In fact, every step of the QCA process revolves around the coding frame. In QCA, the coding frame is first used to reduce (filter) the data, to code (organize) the data, to analyze (interpret) the data, and finally, the coding frame and all internal contents are reported as the findings of the study (Schreier, 2012).

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In tandem to serving as the researcher's analytical compass, the coding frame takes on physical form to serve as an organizational matrix for data bits (Schreier, 2012). A **'**data bit' can be understood as a distinct sentiment within the data, generally not exceeding 40 words in length (Patton, 2015). A coding frame consists of categories and sub-categories called main dimensions and subdimensions (Schreier, 2012). 'Main dimensions' are key areas of focus for the study and 'sub-dimensions' are variations of meaning or manifestation within a main dimension (Schreier, 2012). Schreier (2012) explains that if quantitative language were used to describe the coding frame concept, main dimensions would be understood as variables and sub-dimensions as levels of each variable.

A *d*QCA coding frame is theory driven, which sets it apart from other QCA forms (Hsieh & Shannon, 2005). Key elements of a selected theory pertinent to the research question(s) are utilized as the main dimensions of a *d*QCA coding frame (Hsieh & Shannon, 2005). The structure of the *d*QCA coding frame is entirely at the discretion of the researcher (Schreier, 2012), though it must be unilaterally derived from the selected theory (Hsieh & Shannon, 2005) and directly reflective of the research question(s) (Schreier, 2012). A coding frame can include as many or as few main dimensions as the researcher sees fit to best explore their research question(s), though using too few main dimensions may indicate a weak analysis (Schreier, 2012).

In relation to the current study, the nine elements of flow as described by Csikszentmihalyi et al. (2017) served as main dimensions of the coding frame, as each element represented a distinct key area of interest. The nine elements of flow include: clear goals, balance of challenge and skill, unambiguous feedback, focused attention, merging of action and awareness, sense of control, loss of self-consciousness, distortion of time, and intrinsic motivation (Csikszentmihalyi et al., 2017). In addition to the nine elements of flow, the current study included a tenth main dimension related to the meaning of heroin intoxication.

The sub-dimensions of a coding frame can be determined during step one, added emergently during coding, or a combination of both (Hsieh & Shannon, 2005; Schreier, 2012). In relation to the current study, the first nine main dimensions (the elements of flow) each had two predetermined sub-dimensions – pro-flow (PF) and anti-flow (AF). PF represents data bits that are congruent with fostering flow, while AF represents data bits that are incongruent with fostering flow. In this way, the predetermined coding frame readily facilitated the purpose of the current study, which was to explore the similarities and differences between heroin intoxication and naturally occurring flow experiences. The tenth main dimension was not intended to be explored in terms of pro-flow and anti-flow, but rather to capture the greater meaning of heroin intoxication. As such, the sub-dimensions for the tenth main dimension were derived organically from the data during analysis. The preliminary structure of the current study's coding frame is illustrated in Figure 2.
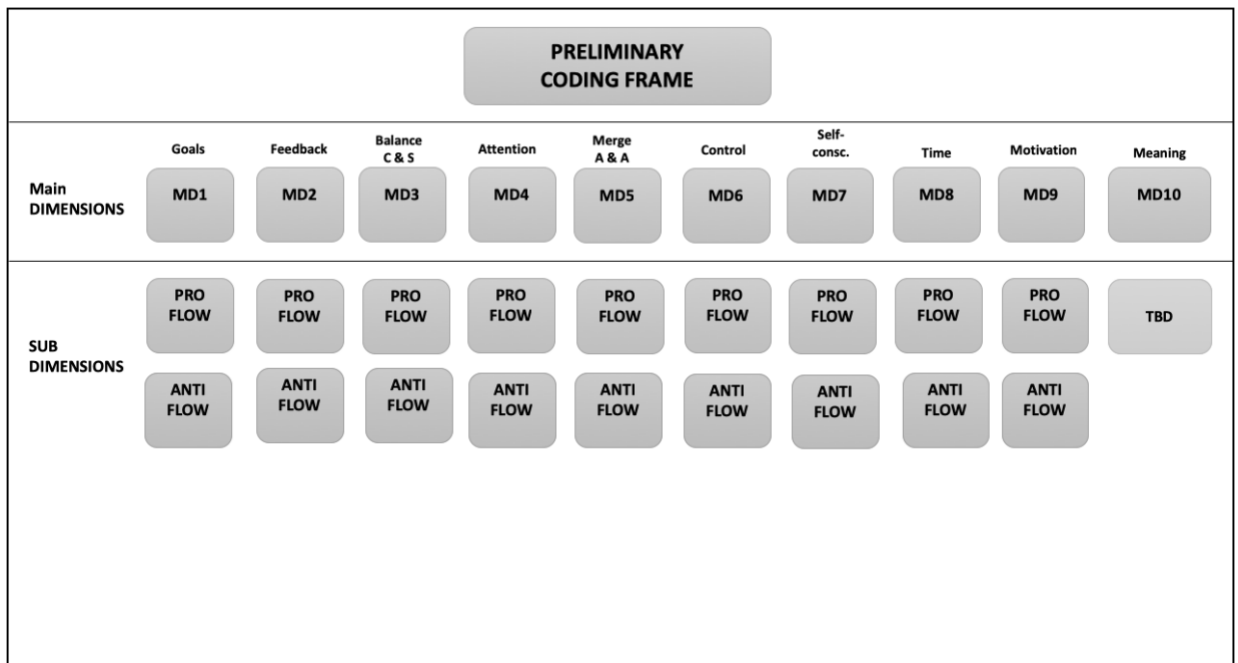
Figure 2. Preliminary structure of coding frame at main and sub-dimension level.

After the theory-driven main dimensions and sub-dimensions have been selected, the researcher must take steps to enhance the trustworthiness of the coding frame (Assarroudi et al., 2018). Although the process of constructing a trustworthy coding frame is labor intensive and time consuming, it results in the genesis of a proper foundation upon which the researcher can conduct a high quality *d*QCA (Assarroudi et al., 2018; Schreier, 2012). To ensure trustworthiness of the coding frame, the researcher must nourish the coding frame by completing the three following vital tasks:

- *Write operational definitions* – Once the main dimensions have been determined, the researcher must operationally define each main dimension of the coding frame (Assarroudi et al., 2018; Hsieh & Shannon, 2005). Though many definitions may exist for a given main dimension, the researcher must select a single definition that is derived from the selected theory and that is as objective as possible (Assarroudi et al., 2018). The operational definition of main dimensions is central to the effectiveness of the coding frame, as it helps to ensure mutual exclusivity of the dimensions (Schreier, 2012). The term 'mutually exclusive' implies that each main dimension is completely distinct in meaning from the others, therefore ensuring that any given data bit fits into only one main dimension (Hsieh & Shannon, 2005). In relation to the current study, the researcher consulted flow literature to operationally define each main and sub-dimension.

- *Select anchor samples* – To further increase trustworthiness of the study, Assarroudi et al. (2018) recommend that the researcher include an 'anchor sample' for each main dimension and sub-dimension. Assarroudi et al. (2018) define 'anchor sample' as, "…an explicit and concise exemplification, or the identifier of a main category, selected from meaning units" (p. 50). In other words, an anchor sample is an ultimate example of each main/sub dimension found in the data. The anchor samples are utilized during the coding process to help determine the proper code for data bits with ambiguous or potentially

layered meaning (Assarroudi et al., 2018). The researcher of the current study reviewed

all of the data before selecting the anchor sample for each main/sub dimension to ensure

that the most exemplary data bit was selected as anchor sample (Assarroudi et al., 2018).

- *Determine coding rules* – As another measure to improve trustworthiness, Assarroudi et

  al. (2018) recommend that the researcher establish coding rules for each main/sub

  dimension (Assarroudi et al., 2018). Coding rules are essential criteria that must be met

  for a data bit to be coded under a given main/sub dimension (Assarroudi et al., 2018).

  Coding rules are derivative of the operational definition of each dimension and contribute

  to clear distinction between the main dimensions (mutual exclusivity) (Assarroudi et al.,

  2018). It can be understood that coding rules reinforce vital boundaries between main

  dimensions (Assarroudi et al., 2018). In relation to the current study, the researcher

  developed highly detailed coding rules, which can be found in Appendices D-M.

The trustworthiness of the coding frame can be further enhanced by addressing matter of

validity (Schreier, 2012). Validity, in a basic sense, refers to the extent to which an instrument

measures what it is intended to measure (Schreier, 2012). There are several ways to assess the

validity of qualitative instruments (Schreier, 2012). Due to the concept-driven nature of *d*QCA,

content validity is the most appropriate and useful measure of instrument validity (Schreier,

2012). Content validity, according to Schreier (2012), "…is assumed to be present to the extent

that an instrument covers all dimensions of a concept" (p.185). Although the researcher is

considered an instrument in any qualitative study, the instrument referred to in this context is the

coding frame. There is no equation for determining content validity, rather it determined by

expert evaluation (Schreier, 2012). An expert, in this context, is considered to be someone

familiar with the theoretical-framework or concept that is informing the *d*QCA (Schreier, 2012).

In relation to the current study, the researcher's faculty committee members with knowledge of flow theory served as experts. The researcher's faculty committee members reviewed the coding frame (operational definitions, anchor samples, and coding rules) and endorsed it as accurately representative of the individual elements of flow. Schreier (2012) explains that if the selected expert(s) affirm that the main dimensions of the coding frame adequately represent the theory and/or concept being studied, then the coding frame is "sufficiently valid" (p. 189). Therefore, it can be understood that the coding frame for the current study met the burden for content validity (Schreier, 2012). In other words, the coding frame sufficiently coded what it is intended to code.

Immersion in the Data. The second step in *d*QCA is immersion in the data (Hsieh & Shannon, 2005). Immersion in the data requires the thorough reading and rereading of all data to gain a sense of the whole and to gain intimate familiarity with the contents of the data (Assarroudi et al., 2018). Immersion in the data is not a passive process, as the researcher must continuously look for and highlight data bits relevant to the predetermined coding frame and research question(s) (Assarroudi et al., 2018; Hsieh & Shannon, 2005). A 'data bit' can be understood as a distinct sentiment within the data, generally not exceeding 40 words in length (Patton, 2015). For the current study, relevancy of data bits was determined by the contents of the coding frame, and by the researcher's intuitive and critical familiarity with Csikszentmihalyi's flow theory, which was achieved by reading and rereading all published works by Csikszentmihalyi.

There is mixed consensus in the literature on how many times the researcher should read the data before immersion is reached, though two times is a popular recommendation (Hsieh & Shannon, 2005; Schreier, 2012). For this reason, the researcher participated in two separate immersive readings of the full heroin experience reports in the research sample. Due to the current study's purpose of exploring both similarities and differences between heroin intoxication

and flow, the researcher searched the data for and highlighted not only data bits that are indicative of flow, but those that are clearly or potentially anti-flow in nature. Immersion in the data is considered complete after the conclusion of the second immersive reading and all data bits deemed relative to the research question have been highlighted.

Data Reduction. The third step of *d*QCA is data reduction. Data reduction is the final step in the preparation phase. Upon completion of the final immersive reading, the researcher reduces the data by discarding any data deemed irrelevant by the theory-driven coding frame (Assarroudi et al., 2018; Hsieh & Shannon). In other words, the researcher discards any data not highlighted during the immersive readings completed during step two. Once reduction has taken place, any data deemed irrelevant to the study will no longer be accessible for review or consideration, which underscores the importance of the previous step. The process of data reduction requires the researcher to reformat the reduced data into a new format conducive to the researcher's personal analytical process (Assarroudi et al., 2018).

In relation to the current study, the researcher transcribed relevant data bits, verbatim, from each experience report into a Microsoft Excel spreadsheet (Saldaña, 2016). Per Erowid guidelines, every data bit utilized in the current study must remain visibly identifiable to the report of origin (Erowid, 2018). Therefore, when entered into the aforementioned spreadsheet, each data bit was denoted with the report number assigned by the researcher, the Erowid assigned report number, a data bit number assigned by the researcher, and the author's self-chosen alias. Once the data were reduced and reformatted, only the selected data bits remained visible, and the researcher moved forward with coding the newly reduced data (Assarroudi et al., 2018).

Coding the Data. The fourth step in *d*QCA is coding the data. Step four marks the start of the analysis phase. All of the work done in the preparation phase (steps one through three) supports and nourishes the data analysis process (Schreier, 2012). In *d*QCA, data analysis is

conducted through the process of coding (Schreier, 2012). When used as a verb, 'code' or 'coding' refers to the act of organizing data bits into appropriate main and sub-dimensions of the coding frame (Schreier, 2012). When used as a noun, 'code' refers to an organizational label given to a data bit that denotes the data bit's assigned place within the coding frame (Patton, 2015). Therefore, in the simplest sense, coding can be understood as the analytic process of systematically organizing data bits within main and sub-dimensions of the coding frame.

Hard-copy coding. There are many software products available to assist qualitative researchers in the coding process (Saldaña, 2016). However, Saldaña (2016) recommends that unseasoned qualitative coders code the old-fashioned way – manually. Qualitative research software, Saldaña (2016) explains, can be overwhelming to even an experienced coder and thus cause the researcher to become more focused on the software than the data. Additionally, Saldaña (2016) points out that although qualitative research software is designed to reduce the time and energy burden associated with qualitative coding, it can actually produce the opposite effect when the researcher is not proficient with the software. In advocating for manual coding, Saldaña (2016) persuades, "There is something about manipulating qualitative data on paper and writing codes in pencil that gives you more control over and ownership of your work" (p. 29).

Based on the recommendation of Saldaña (2016) and the researcher's previous experience with and training in manual coding, index card-based manual coding was utilized in the current study. Saldaña (2016) calls this technique hard-copy coding (p. 30). Once a coding card has been created for each data bit, the researcher may initiate a trial coding (Schreier, 2012).

Trial coding. Trial coding is an essential prerequisite to the formal coding process (Schreier, 2012). The researcher should conduct at least one cycle of trial coding to enhance trustworthiness of their analysis (Schreier, 2012). The trial coding process does not count as data analysis, as the purpose is to assess the preliminary coding frame for areas of weakness or

ambiguity (Schreier, 2012). To conduct a trial coding, the researcher must organize (code) each data bit into a single main dimension of the coding frame (Schreier, 2012). If there are pre-determined sub-dimensions, the trial coding should extend to the sub-dimension level as well (Schreier, 2012).

If some data bits were not able to be coded, or there is confusion about what code is most appropriate for a data bit, this is an indication of either a weakness in the coding frame or a data bit with layered meaning (Schreier, 2012). The researcher should first examine each un-codable data bit to determine if it should be broken into smaller units of meaning (Schreier, 2012). If so, each new unit of meaning represents a new data bit and the original larger data bit is absolved (Schreier, 2012). Next, the researcher should try coding the new data bits to determine if they are now easily codable. If any data bits continue to resist coding, the researcher must strengthen the coding frame by improving the operational definitions and coding rules for the related main or sub-dimensions (Schreier, 2012). The researcher will know that the necessary adjustments have been made when each data bit fits easily and clearly within a single main dimension and sub-dimension of the coding frame (Schreier, 2012).

In relation to the current study, trial coding revealed two main potential areas of weakness in the initial coding frame. First, trial coding revealed a need for stronger coding rules for matters of the mind, brain, and thoughts, as there was too much overlap to make clear distinctions in many instances. To address this need, detailed contextual coding rules related to matters of the mind, brain, and thoughts were added throughout the coding frame and delineated in a contextual decision table (Appendix N). Second, trial coding revealed a need for stronger coding rules to distinguish between types of motivation in main dimension nine (MD9). To address this need, a detailed theory-driven decision chart was created to ensure clear and consistent coding at the sub-dimension level of MD9 (Appendix O).

Formal coding. Upon completion of the trial coding, the researcher may proceed with the formal coding process (Schreier, 2012). To enhance trustworthiness, the coding process is done in at least two cycles (Hsieh & Shannon, 2005; Schreier, 2012). The researcher must wait 10-14 days between coding cycles to ensure that a sufficient amount of time has passed to fade recollection of previous coding results (Schreier, 2012). In relation to the current study, the researcher conducted two cycles of coding with 10 days of rest between the cycles.

The process for each cycle of coding is the same. Ultimately, each data bit is assigned a main code as well as a sub-code. The main code of each data bit represents the main dimension it has been assigned to. The sub-code of each data bit represents the sub-dimension it has been coded to. Therefore, it can be understood that if a data bit has been coded to the main dimension of 'intrinsic motivation', for example, it will then be sub-coded as either 'pro-flow' or 'anti-flow'. Furthermore, if the data bit is determined to be 'anti-flow', the data bit's sub-code is 'anti-flow'. To protect the trustworthiness of the coding process, operational definitions, anchor samples, and coding rules were used throughout the coding process in the current study to determine the proper main and sub code for each data bit (Assarroudi et al., 2018).

The process of coding, in some ways, is similar to putting a puzzle together. The data bits are the pieces of the puzzle and it is the task of the researcher to fit them together in a meaningful way. A coding cycle is considered complete when the final coding frame exhibits the following vital qualities related to trustworthiness:

- *Unidimensionality* – each main dimension of the coding frame reflects a single aspect of the chosen theory; there are no overlapping or mixed dimensions, and furthermore, each sub-dimension is an actual instance of the respective dimension (Schreier, 2012).

- *Mutual exclusivity* – in addition to main dimensions being mutually exclusive (as previous delineated), the sub-dimensions of each main dimensions must be mutually exclusive as well, meaning that any given data bit could only fit into one single sub-dimension (Schreier, 2012).

- *Exhaustiveness* – a coding frame is considered exhaustive when there is a sub-dimension to accommodate every single data bit (Schreier, 2012).

- *Saturation* – a coding frame has reached saturation when there are no empty dimensions or sub-dimensions; however, there are instances in which non-saturation is actually very meaningful, as it indicates a divergence from the selected theory; in instances in which non-saturation is meaningful (and not the result of error), the criterion of saturation does not apply and the researcher must acknowledge this directly in their findings (Schreier, 2012). In the current study, for example, not finding any data bits to fit into a main dimension or an original sub-dimension would be a very meaningful finding.

The coding process is complete when the data have been fully coded at least two times on separate occasions and the final coding frame is characterized by unidimensionality, mutual exclusivity, exhaustiveness, and saturation (Schreier, 2012). Once all of the data bits are assigned a final main code and a final sub-code (after the completion of both cycles of coding), the researcher must search the coded data bits for themes (groups and sub-groups of meaning) within sub-dimensions (Schreier, 2012).

Identification of themes within sub-dimensions is an indication of a high level of abstraction (Elo et al., 2014). The quality of a QCA study is determined, in part, by the level of abstraction achieved in the final coding frame (Elo et al., 2014). Abstraction can be understood as the depth of analysis, where a high level of abstraction indicates an in-depth analysis and a low level of abstraction indicates a shallow analysis (Elo et al., 2014). A high level of abstraction is

achieved when each main dimension of the final coding frame has multiple sub-dimensions, which, in turn, have some combination of sub-groups or themes, as illustrated in Figure 3 (Assarroudi et al., 2018; Elo et al., 2014). Therefore, a goal for any QCA study is to demonstrate a high level of abstraction within the final coding frame (Assarroudi et al., 2018; Elo et al., 2014; Schreier, 2012).
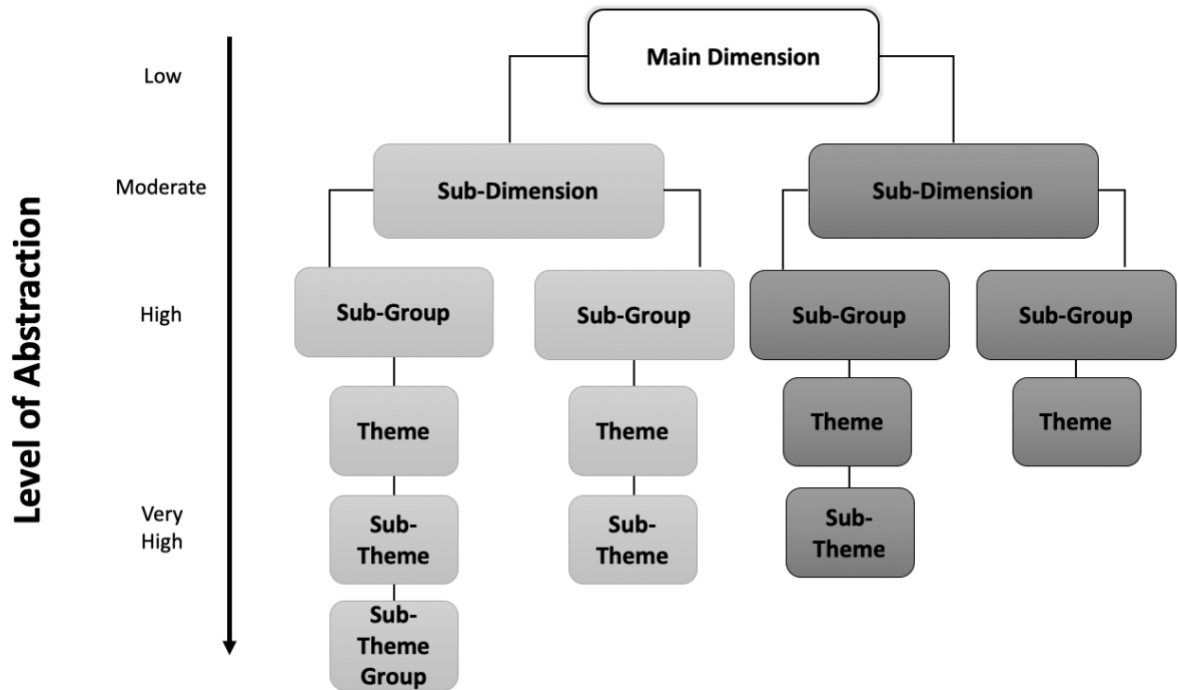
Figure 3. Visual conceptualization of level of abstraction.

Reliability. Upon conclusion of the second coding cycle, the researcher can assess the reliability of their analysis (Schreier, 2012). Reliability, in a basic sense, refers to the ability of an instrument to produce error free results (Schreier, 2012). Reliability is not a commonly used measure of quality in qualitative research (Elo et al., 2014; Patton, 2015; Schreier, 2012). However, the systematic nature of QCA allows for the calculation of meaningful internal reliability measures (Schreier, 2012). In QCA, internal reliability is conceptualized and measured differently depending upon whether the research is conducted by a team or by an individual

researcher (Schreier, 2012). When the research is conducted by a team, inter-rater reliability is calculated to determine the consistency of code agreement across researchers, which can be understood as comparison of coding consistency across persons (Schreier, 2012). When the research is conducted by an individual researcher, intra-rater reliability is used instead, which can be understood as comparison of coding consistency across points in time (Schreier, 2012). A trustworthy coding frame will have high internal reliability (Schreier, 2012).

In relation to the current study, calculation of intra-rater reliability was appropriate since the researcher worked independently (Schreier, 2012). To test for *intra-rater reliability*, the researcher must code the data on more than one occasion, with 10-14 days between coding cycles, and then compare the consistency of the results (Schreier, 2012). A QCA with high internal intra-rater reliability is one with coding results that remain consistent across points in time (Schreier, 2012). To determine intra-rater reliability, the researcher must calculate a *coefficient of agreement*, which essentially represents the extent to which coding results are stable across various coding cycles (Schreier, 2012).

The coefficient of agreement most commonly used to determine internal reliability in QCA is percentage of agreement (Schreier, 2012). The percentage of agreement reveals the percentage, out of 100, that the results of each coding cycle are in agreement (Schreier, 2012). The percentage of agreement is calculated by dividing the number of coding units on which the codes agree by the total number of coding units and then multiplying by 100 (Schreier, 2012, p. 170). The higher the percentage of agreement, the higher the internal intra-rater reliability (Schreier, 2012). Percentages of agreement can be calculated within each and between all main dimensions, as well as within each preliminary sub-dimension (Schreier, 2012). In relation to the current study, coding at the main dimension level was conducted on two separate occasions with 99.8% intra-rater agreement across main dimensions. Coding at the sub-dimension level was conducted on two separate occasions with 100% intra-rater agreement across sub-dimensions.

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Interpretation of the Findings. The fifth step of *d*QCA is interpretation of the findings. The final coding frame and all internal contents are the findings of *d*QCA (Assarroudi et al., 2018; Hsieh & Shannon, 2005; Schreier, 2012). To interpret the final coding frame means to put the contents and structure of the coding frame into conversation with theory and existing literature to address the research question(s) (Hsieh & Shannon, 2005; Schreier, 2012). There is a tremendous amount of overlap between step four and five, as a researcher cannot code the data without constantly also interpreting the structure and contents of the coding frame through the lens of the selected theory (Schreier, 2012). In this sense, the fifth step may be best conceptualized as an intentional extension of the coding process.

The interpretation process is where meaning is made (Patton, 2015; Schreier, 2012). Elo et al. (2014) explain that the purpose of the interpretation process in *d*QCA is to develop "conceptual and logical link[s]" between the contents of the coding frame and the chosen theory (p. 51). The final structure and contents of the predetermined main and sub-dimensions of the coding frame provide answers to the study's research question(s). It is in the interpretation stage that the researcher uses the contents of the final coding frame to coax answers to the research question(s) from the data (Schreier, 2012).

Interpretation of the findings in the current study included appreciation of negative space. In other words, what was *not* found in the data is tantamount to what *was* found in the data (Elo et al., 2014; Hsieh & Shannon, 2005). Therefore, empty main dimensions or sub-dimensions in the current study were not discarded, as an empty main/sub dimension are understood to have rich contextual meaning (Assarroudi et al., 2018). The interpretation process unfolds differently for every researcher and varies across projects, though it generally includes the researcher vacillating between various vantage points while trying to observe and interact with the coding frame in both expected and unexpected ways (Patton, 2015). Interpretation is complete when the researcher has answered the entirety of the research question (Hsieh & Shannon, 2005).

Reporting the Findings. The sixth step of dQCA is reporting the findings. Step six

marks the final phase of the dQCA process. Once the final coding scheme has been interpreted, it

is ready to be reported. dQCA findings are often presented in continuous text format, which can

be understood as a narrative style description, or illustration, of the final structure and contents of

each of the main dimensions of the final coding frame (Schreier, 2012). Continuous text

descriptions are commonly supplemented by tables and figures to provide visual delineation of

the contents and structure of the final coding frame (Schreier, 2012). The findings of the current

study will now be presented in the following chapter.

CHAPTER IV

FINDINGS

Introduction

The purpose of the current study was to explore the experience of heroin intoxication

through the leisure lens of flow theory in order to gain deeper understanding of the ways in which

heroin intoxication is similar to and different from flow experiences. To achieve this purpose, the

current study addressed the following research question: in what ways, if any, is heroin

intoxication similar to flow? A directed qualitative content analysis (*d*QCA) methodology was

utilized in the current study, which allowed for a systematic theory-driven analysis (Schreier,

2012) of narrative-style heroin experience reports through the lens of flow theory. The current

chapter will include a brief overview of the selected style for reporting the findings of the current

study, illustration of the findings within each main dimension, and finally, a summary of the

findings.

Overview

In *d*QCA, the structure, or contents, of the final coding frame are understood as the

results, or findings, of the study (Schreier, 2012). The final coding frame may be conceptualized

as a theory-driven organizational matrix that delineates the meaning discovered during data

analysis. The final coding frame in the current study is comprised of main dimensions, sub-

dimensions, and varying amounts of themes, sub-themes, and sub-theme groups.

The final coding frame in the current study includes ten predetermined main dimensions (MD): goals (MD1), feedback (MD2), balance of challenge and skill (MD3), attention (MD4), merging of action and awareness (MD5), control (MD6), self-consciousness (MD7), time (MD8), motivation (MD9), and meaning (MD10) (See Figure 4). The first nine of the aforementioned main dimensions represent the nine individual elements of flow, and as such, have each been assigned two predetermined sub-dimensions: pro-flow (PF) and anti-flow (AF) (See Figure 4). The tenth main dimension (MD10) has not been assigned any predetermined sub-dimensions. During the coding process, each data bit was organized (coded) into a single main dimension, and then, with the exception of those data bits organized into MD10, further coded as either PF or AF. MD10 explores the greater meaning of heroin intoxication and is not examined in terms of pro-flow or anti-flow; as such, the four sub-dimensions in this main dimension (See Figure 4) were derived organically from the data during analysis.
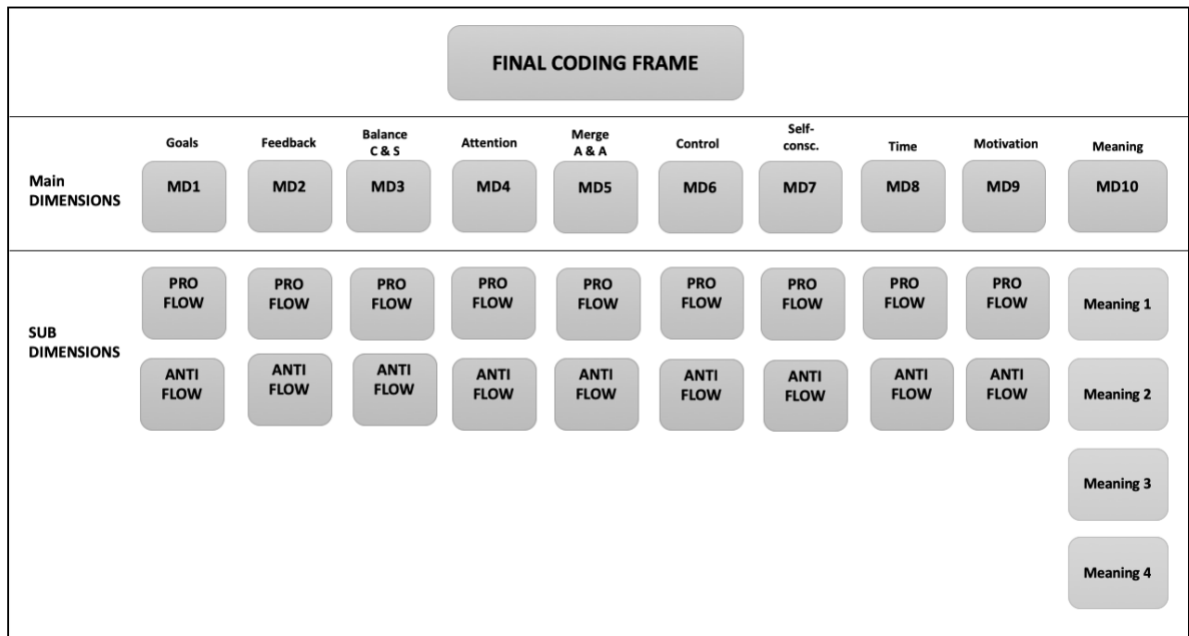
Figure 4. Basic final structure of the coding frame

The findings of the current study are reported in a continuous text format, which can be understood as a narrative style description, or illustration, of the final structure and contents of each of the ten main dimensions of the final coding frame (Schreier, 2012). The illustration of each main dimension will include the following: 1) a review of the underlying core concept of the main dimension, 2) illustration of the final structure and contents of the main dimension, and 3) a summary of the findings.

Illustrative examples. The final coding frame includes 586 data bits. In the interest of providing parsimonious description, individual data bits shall be featured in the descriptions only to the extent that they are necessary to illustrate the findings (Schreier, 2012). Therefore, only highly illustrative data bits are utilized as examples throughout the narrative description to nourish the reader's understanding of the findings (Schreier, 2012). When examples are utilized, members of the research sample (also referred to as authors) are referred to by their self-chosen alias and their words are presented as direct quotes. Each example quote represents a single data bit. Within the context of the narrative illustration, individual data bits are referred to as individual instances.

Figures, tables, and absolute frequencies. To supplement the narrative descriptions, figures and text matrices will be utilized to illustrate the detailed structure and contents of each main dimension. A text matrix can be understood as a table comprised of more words than numbers (Schreier, 2012). While the text matrices are primarily textual, each table will also include absolute frequencies to illustrate the absolute number of instances that any given idea was expressed by the research sample (Schreier, 2012).

MD1 – Goals

Review of the Core Concept

The first dimension of the final coding frame is goals (MD1). A goal, in the most basic sense, is a desired outcome. Goals are a driving force in flow experiences (Csikszentmihalyi et al., 2017). Goals provide structure for consciousness and serve as a beacon for engagement (Csikszentmihalyi, 1990). As such, Csikszentmihalyi et al. (2017) explain that when goals are conscious and clear, an individual is more likely to experience flow. When goals are subconscious or unclear, and individual is less likely to experience flow, as such a state indicates the presence of apathy, which is the antithesis of flow (Csikszentmihalyi et al., 2017).

Overview

The smallest main dimension in the final coding frame, MD1 contained only two data bits. Of these two data bits, one data bit was coded as pro-flow and one data bit was coded as anti-flow. The basic structure and data bit distribution within MD1 can be seen in Figure 5. The contents of MD1 will now be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD1 findings.

Pro-flow

The pro-flow sub-dimension of MD1 yielded a single data bit. The single data bit yielded a single theme: nodding (See Table 1). This pro-flow theme can be understood as a clear goal for heroin use. The single pro-flow theme will now be briefly illustrated.

Figure 5. Basic final structure of MD1 with data bit distribution across sub-dimensions

Table 1

Detailed Structure of MD1 Across Pro-Flow and Anti-Flow Sub-Dimensions

Theme		*# of data bits in theme*	*# of data bits in sub-theme*
Pro-flow sub-dimension			
1 *Nodding*		**1**	0
	SD total	**1**	-
Anti-flow sub-dimension			
1 *Erasure of goals*		**1**	0
	SD total	**1**	-
	MD total	**2**	-

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Nodding. In one instance, an author explicitly stated that their goal during heroin intoxication is to nod. Nodding is defined by NIDA (2018b) as "a back-and-forth state of being conscious and semiconscious" during heroin intoxication. Of this, the author stated – '[of nodding while high] to sleep the sleep of angels is the ultimate goal' (Negative Creep).

Anti-flow

The anti-flow sub-dimension of MD1 yielded a single data bit. The single data bit yielded a single theme: erasure of goals (See Table 1). This anti-flow theme can be understood as an unclear or absent goal for heroin use. The single anti-flow theme will now be briefly illustrated.

Erasure of goals. In one instance, an author explicitly stated that their goals were erased during heroin intoxication. Of this, Oblivious stated – '[while on heroin] My goals are erased'.

MD1 Summary

The smallest main dimension in the final coding frame, MD1 yielded only two data bits. Of these two data bits, one data bit was coded as pro-flow and one data bit was coded as anti-flow. Pro-flow findings indicate that for one member of the research sample, there was a clear and conscious goal for heroin intoxication – nodding. Anti-flow findings indicate that for one member of the research sample, goals were irrelevant or non-existent during heroin intoxication.

To clearly differentiate between MD1 (goals) and MD9 (motivation), the coding frame was designed to code within MD1 only instances in which members of the research sample explicitly referred to a goal, using the word 'goal'. As such, in instances where a goal may be implied or also interpreted as a motivation, the data bit was coded as MD9 (motivation). Therefore, the findings of MD1 shall be held in close conversation with the findings of MD9.

MD2 – Feedback

Review of the Core concept

The second main dimension of the final coding frame is feedback (MD2). In flow theory, feedback is understood as internal and external cues relative to an activity (Csikszentmihalyi et al., 2017). Internal feedback refers to physiological or corporeal experiences and sensations (Csikszentmihalyi et al., 2017). External feedback, then, refers to environmental cues, such as rules of engagement, logistics, weather, spatial proximity, other participants, order of events, and other non-corporeal factors relevant to the activity (Csikszentmihalyi et al., 2017). To foster flow, feedback must be unambiguous (clear and straightforward) (Csikszentmihalyi et al., 2017). Conversely, ambiguous feedback (distorted, absent or, confusing) hinders flow (Csikszentmihalyi et al., 2017).

Overview

The largest main dimension in the final coding frame, MD2 contains 218 data bits. Of these data bits, 192 data bits were coded as pro-flow (PF) and 26 data bits were coded as anti-flow (AF). Within each sub-dimension, data bits were further coded into two sub-groups: internal feedback and external feedback. Within each sub-group, the data yielded a series of themes, which represent types of feedback authors experience during heroin intoxication. The basic structure and data bit distribution within MD2 can be seen in Figure 6. The contents of MD2 will now be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD2 findings.

SUB	Feedback (218)			
MAIN DIMENSION (# of data bits)	Feedback (218)			
SUB DIMENSIONS (# of data bits)	Pro-flow (192)		Anti-flow (26)	
SUB GROUPS (# of data bits)	Internal feedback (180)	External feedback (12)	Internal feedback (24)	External feedback (2)
# of THEMES	17	3	5	2
# of SUB THEMES	18	1	4	-
# of SUB THEME GROUPS	7	-	-	-

Figure 6. Basic final structure of MD2 with data bit distribution across sub-dimensions and predetermined sub-groups

Pro-flow

The pro-flow (PF) sub-dimension of MD2 yielded 192 data bits. Of these 192 pro-flow (PF) data bits, 180 data bits were coded as internal feedback and 12 data bits were coded as external feedback (See Figure 6). The PF internal feedback themes theme will now be briefly illustrated, followed by an illustration of the PF external feedback themes.

Internal feedback

The sub-group of unambiguous internal feedback yielded 17 themes, which can be understood as types of unambiguous internal feedback experienced during heroin intoxication (See Table 2). The PF internal feedback themes include: warmth, nausea and vomiting, unpleasant taste and smell, numbness, physical relaxation, pain while administering the drug, ways of knowing on is overdosing on heroin, itchiness, tingling, euphoria, dizziness, ocular

occurrences, dynamic sensation, 'the rush', breathing changes, emptiness, and heaviness. The PF internal feedback themes will now be briefly illustrated.

Table 2

Detailed Structure of Pro-Flow Internal Feedback Sub-Group

	Theme	# of data bits in theme	# of data bits in sub-theme(s)	# data bits not in a sub-theme	# of data bits in sub-theme group
1	*Warmth*	**56**	34	22	14
	***Sub-theme:** Idyllic warmth*	-	14	-	-
	--Sub-theme group: *Warm bath*	-	-	-	4
	--Sub-theme group: *Warm blanket*	-	-	-	5
	--Sub-theme group: *Warm embrace*	-	-	-	2
	--Sub-theme group: *Winter warmth*	-	-	-	2
	--Sub-theme group: *Childhood warmth*	-	-	-	1
	***Sub-theme:** Dynamic warmth*	-	8	-	-
	***Sub-theme:** Warm rush*	-	6	-	-
	***Sub-theme:** Glowing*	-	6	-	-
2	*Nausea/vomiting*	**17**	8	9	0
	***Sub-theme:** Stillness*	-	4	-	-
	***Sub-theme:** Vomiting is a relief*	-	3	-	-
	***Sub-theme:** Indifference to vomiting*	-	1	-	-
3	*Unpleasant taste and smell*	**15**	9	6	1
	***Sub-theme:** Bitter vinegar*	-	9	-	-
	--Sub-theme group: *Childhood memory*	-	-	-	1
4	*Numbness*	**14**	10	4	2
	***Sub-theme:** Comfortably numb*	**-**	1	-	-
	***Sub-theme:** Mental numbness*	**-**	3	-	-

	Sub-theme: *Corporeal numbness*	-	6	-	-
	--Sub-theme group: *'Pins and needles'*	-	-	-	2
5	*Physical relaxation*	**12**	5	7	0
	Sub-theme: *Dynamic relaxation*	-	3	-	-
	Sub-theme: *Descending relaxation*	-	2	-	-
6	*Pain while administering the drug*	**12**	12	0	0
	Sub-theme: *Needle insertion*	-	5	-	-
	Sub-theme: *Burning nose and face*		7	-	-
7	*Ways of knowing one is overdosing*	**11**	11	0	0
	Sub-theme: *Physical sensation*	-	6	-	-
	Sub-theme: *Gut instinct*	-	5	-	-
8	*Itchiness*	**7**	1	6	0
	Sub-theme: *Pleasurable*	-	1	-	-
9	*Tingling*	**7**	0	-	-
10	*Euphoria*	**6**	0	-	-
11	*Dizziness*	**5**	0	-	-
12	*Ocular occurrences*	**5**	0	-	-
13	*Dynamic sensation*	**4**	0	-	-
14	*'The rush'*	**3**	0	-	-
15	*Breathing changes*	**2**	0	-	-
16	*Emptiness*	**2**	0	-	-
17	*Heaviness*	**2**	0	-	-
	Total	**180**	-	-	-

Warmth. The most frequently reported type of unambiguous internal feedback, represented by 56 data bits, is a feeling of warmth. Of the warmth in general, authors explained –

'There is a defined warmth with Heroin' (sepulfreak)

'Then, all of a sudden it hit me. The warmth of the drug. It felt soo good.' (Ferreally)

'We felt a warmth come over us that is almost impossible to explain, besides the fact that it just felt so. damn. amazing.' (Mack)

The warmth of heroin was further conceptualized by the authors in four main ways: idyllic warmth, dynamic warmth, a warm rush, and a sense of glowing. These are sub-themes of warmth (See Table 2). The sub-theme of *idyllic warmth* encompasses the various sentimentalities that the authors associate with the warmth of heroin intoxication, and yielded five sub-theme groups (See Table 2. For some authors, the warmth of heroin feels like a warm bath –

'Immediately I felt as though I had climbed into a warm bubble bath' (Poppy Girl).

Others likened the warmth of heroin to a blanket –

'I have read a lot about people describing it as being wrapped in a warm blanket. And I would have to agree with this also.' (Lane)

'The actual feeling of being on it was like that of curling up into a warm blanket with a cup of hot chocolate.' (sepulfreak)

'blanket of utter warmness' (Chris M)

Some authors expressed that the warmth of heroin is like an embrace –

'She removes the belt. . .Oh. . .my. . . god. . . Slowly embraced from behind, warm hands surround my presence' (Mad Dash)

'the warm embraced me like a hug.' (snapple)

While some authors described the warmth of heroin as a sensation similar sitting next to a heat source in the midst of winter –

'I felt like I was sitting next to a fire in the winter' (Twigbust)

'a warmth pouring over me like the heater coming on during a snowstorm' (MLM)

Finally, one author explained that the warmth of heroin brings them back to childhood –

'It reminded me of when I was a little kid and I used to pile up warm laundry from the dryer and snuggle up in it; I felt warm' (Gnostikoi)

In addition to idyllic sentiment, some authors described the warmth of heroin as dynamic – flowing, moving like a wave across their body, and spreading outwards. Some authors described the warmth of heroin as a rush – 'rush of warmth that seemed to flow to every cell of my body' (snapple). Finally, several authors described the warmth of heroin as a sensation of *glowing* from the inside out, like a lightbulb or the sun. Of this, 100MillionYearTrip describes, 'The warmth takes over and I'm glowing'.

Nausea/vomiting. In 17 instances, authors reported experiencing unambiguous feelings of nausea and/or experience vomiting during heroin intoxication. Authors reported that violent nausea and incessant vomiting are common experiences during heroin intoxication. This theme

yielded three sub-themes (See Table 2). In three instances, authors reported that vomiting offers a welcomed relief from nausea. Of this, Recoveryguru stated, 'All of a sudden I felt like I had to throw up. I walked quickly to the sink and barfed whatever was in my stomach. Then I felt better'. In four instances, authors describe nausea as a cue to remain still. Of this, I.B. Surprised explained, 'I threw up, then laid down and watched TV and listened to the radio. As long as I was prone, the nausea wasn't there, but as soon as I stood up and walked around, I barfed'. Finally, in one instance, an author described an attitude of indifference towards nausea and vomiting, as if it were perfectly routine – 'I knew I was puking, but it didn't hurt, bother, or even phase me (Poppy Girl).

Unpleasant taste and smell. In 15 instances, authors described heroin as having an unpleasant taste and/or smell. In nine instances, authors described heroin as having a bitter vinegar taste and smell. This is a sub-theme (See Table 2). Of the distinctive taste and smell, Robby stated, 'The taste and smell of the cheeb smoke is very distinctive: I would describe it as a burnt barbecue sauce odor with a very bitter, almost vinegar-like taste. It is not a pleasant aroma'. Some authors stated that they have come to enjoy the scent or taste of heroin over time, while others stated that it nearly deterred them from using heroin. One author reported that the taste and smell of heroin brings them back to childhood. This is a sub-theme group (See Table X). Of this memory, MLM stated –

> 'Funny thing about me is I always liked vinegar. I liked to slice up a cucumber and soak
> it in vinegar with salt and pepper, and, being a weird child, when finished eating the
> pickle slices maybe I'd drink the vinegar. Now I found myself in a love affair with
> shooting this shit up my nose and it smelt just like my old favorite vinegar. How weird.'

Numbness. In 14 instances, authors described feelings of numbness during heroin intoxication. Authors described the numbness as intense. One author recalls, 'I'm obliterated,

completely numb' (Psych0naut). Six of the 14 instances were related to physical numbness of the body. Of corporeal numbness, Ferreally stated, 'my whole body was dead numb'. Two authors described their corporeal numbness as a sensation of pins and needles – 'Anyone who has done an opiate in large amounts has felt the `pins and needles' effect. This is basically your body telling you it is completely numb, or as numb as it is going to get anyway. And this is what I felt the first few times I shot up H' (Negative Creep). This is a sub-theme (See Table 2). Three authors described mental numbness accompanying their corporeal numbness. Of this, Spike described that they felt, 'numbness of mind, numbness of body, numbness of perception'. Finally, one author described the numbness as comfortable.

Physical relaxation. In 12 instances, authors described feeling intense physical relaxation during heroin intoxication. Authors described being completely relaxed and physically loose. Authors further conceptualized the physical relaxation in two main ways: descending sensation and dynamic relaxation. These are sub-themes (See Table 2). In two instances, authors described being so relaxed that they felt they were sinking or melting into their place. Of this, Seismic described, 'I felt almost as if I were sinking into the couch and I hadn't felt so relaxed in a long, long time'. In two other instances, authors described the physical sensation of relaxation as dynamic – unfolding, traveling, and spreading across their body. In relation, Jay states, 'As soon as i removed the belt, i could feel a sweet, relaxed sensation travel outward from my chest over my entire body'.

Pain while administering the drug. In 12 instances, authors reported pain or discomfort while administering or just after administering heroin. Authors described pain and discomfort while administering heroin in two main ways: needle insertion and burning in the nose and face region. These are sub-themes (See Table 2). In instances of intravenous use, authors reported a brief painful sensation when inserting the needle. In instances of insufflation (inhaling or

snorting), authors reported a burning sensation in their nose or face. Of this, Ferreally recalled, 'My whole face started to feel like I was burning from the inside out'.

Ways of knowing one is overdosing on heroin. In 11 instances, authors described ways of knowing that they are experiencing a heroin overdose. The two main ways of knowing one is overdosing included: interpreting physical sensation(s) and gut instinct(s). These are sub-themes (See Table 2). In six instances, authors reported that physical sensations alerted them to their overdose condition. Of this, Laikalover recalled –

> 'within five seconds I knew that I was in serious trouble. I fell to the ground. My vision started to collapse, I could see, then I couldnt, this happened in waves. My chest felt very tight. So tight that I couldnt breathe. I was making all sorts of noises trying to breath. I tried to get as much oxygen as possible but I could only take very short breaths because my chest was so tight'.

In five instances, authors described a sudden realization or gut instinct that they were overdosing on heroin. Of their gut instinct, burton recalled, 'It was TOO intense, the rush. But at the same time, it felt GOOD. Amazing. Indescribable, even. Something in the back of my brain knew this was all wrong, I had taken too much'. Similarly, anonymous (Erowid report ID 9089) explained, 'I stumbled out of the bar bathroom and onto the street about one minute later, and the last thing I remember thinking was, 'I think I did too much'.

Itchiness. In seven instances, authors stated that they feel itchy during heroin intoxication. In one instance, an author described the itchy sensation as pleasurable – 'I did, however, love the itchy feeling it gave me. It made me feel so fantastic, all I wanted to do was scratch my body' (Morgan). This is a sub-theme (See Table 2).

Tingling. In seven instances, authors described a sensation of tingling during heroin intoxication. The tingling was described as an intense and pleasurable sensation, which pulses or flows through the body. Of the tingling, 100MillionYearTrip states, "I feel a tingle deep inside my being, like being on the verge of an orgasm." In some instances, the tingle served as a signal, of which Kdubya explained – 'sometimes semi painful tingling that lets me know it's good stuff'.

Euphoria. In six instances, authors described a sensation of euphoria during heroin intoxication. Lane, for example, described, 'an almost immediate, exhilarated sense of euphoria'.

Dizziness. In five instances, authors described feeling dizzy during heroin intoxication. The dizziness is described by authors as enjoyable. Of the dizziness, I.B. Surprised explained, 'a quick rush of warm dizziness filled my being'.

Ocular occurrences. In five instances, authors described changes in the way their eyes look and feel during heroin intoxication. Ocular occurrences included changes in pupil size, eyes feeling heavy or glossy, and eyes drooping. In one instance, an author described their eyes as providing insight into how intoxicated they were. Of this, heroinchic stated, 'I love pinned pupils. Great way to gauge how high I am'.

Dynamic physical sensation. In four instances, authors described the feeling of heroin intoxication as actively traveling like a wave across their body, ebbing and flowing. Of this, one author stated, 'Every time I dosed, it seemed as if I was at the ocean. At first, the waves came on gently, slowly reaching an awesome power, then subsiding again'(sepulfreak).

'The rush'. In three instances, authors referred to 'the rush' of heroin as a standalone feeling. Of 'the rush', Travis described, 'I had an intense rush, it felt like your head blowing up or the entire world being torn apart'. In relation, one author stated, 'The rush from a blast of heroin, I think, feels like the sick feeling you would get when you land in a 747 when you're drunk' (beautiful disaster).

Breathing changes. In two instances, authors reported that they noticed a change in their breathing pattern during heroin intoxication. Authors described their breathing as becoming thin, shallow, and heavy.

Emptiness. In two instances, authors described the feeling of heroin intoxication as a powerful, pleasant emptiness or nothingness. Of this, tinyidiot stated, 'I felt a feeling that's hard to describe. I can only describe it as intense nothing or an overwhelming hollowness. The drug was very strong, but it was just nothing and empty'.

Heaviness. In two instances, authors stated that their body felt pleasantly heavy during heroin intoxication. Of the heaviness, Observer stated, 'Then that heavy feeling washed over me. That's how I describe it, heavy. But it's pleasant. I felt weighed down like'.

External feedback

The sub-group of unambiguous external feedback yielded three themes, which can be understood as types of unambiguous external feedback experienced during heroin intoxication (See Table 3). The detailed contents of the external feedback sub-group can be seen in Table 3. The unambiguous external feedback themes include: injection confirmation, noticing others, and ways of knowing one is overdosing on heroin. The unambiguous external feedback themes will now be briefly illustrated.

Table 3

Detailed Structure of Pro-Flow External Feedback Sub-Group

	Theme	# of data bits in theme	# of data bits in sub-theme	# data bits not in a sub-theme
1	*Injection confirmation*	**10**	0	-
2	*Noticing others*	**1**	0	-
3	*Ways of knowing one is overdosing on heroin*	**1**	1	0

Sub-theme: *Peer feedback*	-	1	-
Total	**12**	-	-

Injection confirmation. In ten instances, authors that utilized intravenous heroin administration reported experiencing visual confirmation that they had properly inserted the needle in a vein. Authors explained that when a needle is properly inserted, blood will rush into the belly of the syringe when pulled back, which several authors referred to as 'registering'. Of registering, Lane stated, 'blood was drawn back into the needle and mixed with the heroin. This is to make sure the needle is in a vein and not under the skin (skin-popping) or in a muscle (intramuscular)'. Some authors described a red cloud appearing when they registered – 'I draw back the plunger, it fills with a crimson mushroom cloud, the deep red overtaking the brown mixture' (100MillionYearTrip). Finally, registering is described as a much-anticipated cue, which many authors romanticized –

> 'A slow, dark trickle of blood filled the syringe and mixed with the smack. It made a beautifully colored mixture with the heroin that reminded me of the wonderful sunsets here in the Salt Lake Valley. Cool, I shoot Salt Lake sunsets into my veins' (I.B. Surprised)

Noticing others. In one instance, an author reported that noticing their peer enjoying their heroin high caused them to enjoy their experience more. Of this, Oblivious recalled, 'I laid back noticing my friend enjoying it too'.

Ways of knowing one is overdosing on heroin. In one instance, burton explained that they became aware that they were overdosing on heroin based on the feedback they received from their peers –

'that the look of concern on P's face and his calling a mutual friend of ours (who we will call C) and then making him talk to me - I remember C saying that I needed to get to a hospital, I sounded too fucked up and P said I looked too fucked up - was a bad sign.'

Anti-flow

The anti-flow (AF) sub-dimension of MD2 yielded 26 data bits. Of these 26 AF data bits, 24 data bits were coded as internal feedback and 2 data bits were coded as external feedback (See Figure 6). The AF internal feedback themes will now be briefly illustrated, followed by an illustration of the AF external feedback themes.

Internal Feedback

The sub-group of ambiguous internal feedback contains 24 data bits and yielded five themes, which can be understood as types of ambiguous internal feedback experienced during heroin intoxication (See Table 4). The anti-flow internal feedback themes include: compromised senses, impeded perception of pain, disorientation, vomiting confusion, and being 'strung out'. The internal anti-flow feedback themes will now be briefly illustrated.

Table 4

Detailed Structure of Anti-Flow Internal Feedback Sub-Group

	Theme	# of data bits in theme	# of data bits in sub-theme	# data bits not in a sub-theme
1	*Compromised senses*	**11**	11	0
	Sub-theme: *Impaired hearing*	**-**	1	-
	Sub-theme: *Impaired sight*	**-**	7	-
	Sub-theme: *Senses are overwhelmed*	**-**	2	-
	Sub-theme: *Inability to discern temperature*	**-**	1	-
2	*Impeded perception of pain*	**6**	0	-

3	Disorientation	3	0	-
4	Vomiting confusion	3	0	-
5	'Strung out'	1	0	-
	Total	24	-	-

Compromised senses. In 11 instances, authors reported that their senses were compromised during heroin intoxication. Authors conceptualized their compromised senses in four main ways: impaired hearing, impaired sight, an inability to discern temperature, and overwhelmed senses. These are sub-themes (See Table 4). In one instance, an author reported that during heroin intoxication, 'every sound in the room seemed to become distant' (Poppy Girl). In seven instances, authors described visual deficits, which included blurred vision, fuzzy vision, and vision that faded in and out. Of this, Marsupial described, 'My vision seemed different, almost as if what I was seeing could fade to complete blackness without warning'. One author described an inability to discern temperature. Of this, Voyager stated, 'I decided to go out and take a walk round the buildings in the area. It was beautiful. I didn't feel the coldness'. Finally, for two authors, their senses were simply overwhelmed by heroin intoxication. Of this, Observer explained that heroin 'molests my senses' and another author explained that trying to function while intoxicated on heroin results in 'too much sensory input' (Csc).

Impeded perception of pain. In six instances, authors reported that their ability to perceive pain is dulled or completely impeded during heroin intoxication. Without the ability to perceive pain, authors reported that they have unintentionally harmed themselves while intoxicated on heroin. TarMonkey explained, 'One of the 1st times I smoked it I forgot my crutches and actually walked on my leg with the torn knee. I could not feel the pain then, afterwards I did but that's what more Heroin is for'. Others reported that without the ability to perceive pain during heroin intoxication, they often scratch themselves to the point of injury due

to the itchy feeling that sometimes accompanies heroin intoxication. Of this, one author wrote, 'It's a painkiller, so if I scratch too hard, I'll [sic] cut yourself and not even notice' (beautiful disaster).

Disorientation. In three instances, authors reported feeling disoriented during heroin intoxication. Of the disorientation, Sydd described it as 'the sensation of surfacing out of deep water, I could not hear, I could not see, I could not feel'. The feeling of disorientation wase summed up by one author –

> 'What the hell is going on?!!? What the hell is happening?. Everything is so far away. I can't really make out what is going on around me, but there is a bunch of shit happening. There is movement and noise, I just can't quite tell what it is. Who is that? What is that noise? I am confused, like coming to after an all-consuming psychedelic experience. I can see, but I am not quite sure what is real and what isn't. Everything has a strange feel to it and I can't quite recognize where I am. Hell, I can't even quite put my finger on who I am.' (Chemical Boy)

Vomiting confusion. In three instances, authors reported being unsure if they were going to vomit or not during heroin intoxication. In two instances, authors reported being surprised by an episode of vomiting – 'Then came the puke. My friend had shot me up in the bathroom, but even though I was right next to the toilet, it came on so fast that I threw up all over my best friend's towels' (Poppy Girl). Another author found themselves waiting for an episode of vomiting that never occurs.

Being 'strung out'. In one instance, an author explained that they sometimes struggle to know how intoxicated they are, which they refer to as being 'strung out'. Of this, Robby explained, 'it's possible to become strung out on the cheeb [heroin], that is, I feel like I'm not high and continue to smoke despite the fact that I am greatly impaired'.

External Feedback

The sub-group of ambiguous external feedback contained two data bits and yielded two themes, which can be understood as types of ambiguous internal feedback experienced during heroin intoxication (See Table 5). The detailed structure of the AF external feedback sub-group can be seen in Table 5. The anti-flow internal feedback themes include: absence of rules and difficulty judging proper dosage.

Table 5

Detailed structure of Anti-Flow External Feedback Sub-Group

	Theme		# of data bits	# of data bits in sub-theme
1	*Absence of rules*		1	0
2	*Difficulty judging a dose*		1	0
		Total	**2**	**-**

Absence of rules. In one instance, an author reported that there is an absence of rules during heroin intoxication. Of this, Katriss stated, 'There are no rules now'.

Difficulty judging a dose. In one instance, an author reported that it is difficult for them to properly judge the dosage of heroin. Of this, sepulfreak explained, 'It is hard for me to judge a dose. I either get too little or too much'.

MD2 Summary

The largest main dimension in the final coding frame, MD2 contains 218 data bits. Of the 218 total data bits, 192 (88%) were coded as pro-flow (PF), while 26 (12%) of the data bits were coded as anti-flow (AF). Of the 192 PF data bits, 180 data bits (94%) were coded as internal

feedback, and 12 data bits (6%) were coded as external feedback. Of the 26 AF data bits, 24 data

bits (94%) were coded to internal feedback, and 2 data bits (6%) were coded as external feedback.

The structure of the final coding frame within MD2 indicates that heroin intoxication is a

feedback-rich experience. Furthermore, for members of the research sample, heroin intoxication

is a highly nuanced experience, which is governed largely by unambiguous internal feedback. In

this sense, it can be understood that while heroin intoxication presents instances of ambiguous

feedback, which are inconsistent with fostering flow, the majority of feedback experienced by

members of the research sample during heroin intoxication was unambiguous. Members of the

research sample not only report the prevalence of unambiguous feedback, but also the capacity to

be aware of the feedback and in many instances, respond to it. Flow activities are characterized

by the prevalence of unambiguous feedback (Csikszentmihalyi et al., 2017), and as such, it can be

understood that for members of the research sample, there is a similarity between heroin

intoxication and flow in the element of unambiguous feedback.

MD3 – Balance of Challenge & Skill

Review of the Core Concept

The third main dimension of the current study is balance of challenge and skill (MD3).

Flow can only manifest when an individual has entered the sweet spot where their skill level is

perfectly matched with the difficulty of the activity (Csikszentmihalyi et al., 2017).

Csikszentmihalyi (1997) identifies eight potential relationships between challenge and skill,

which he refers to as channels of experience (Csikszentmihalyi & Wong, 1991/2014). The eight

channels of experience can also be understood as states of being. The eight channels of

experience include: arousal, flow, control, boredom, relaxation, apathy, worry, and anxiety

(Csikszentmihalyi & Wong, 1991/2014). The first three channels of experience (arousal, flow,

control) represent pro-flow (PF) states of being, which are more likely to result in manifestation

of flow. The final five channels of experience (boredom, relaxation, apathy, worry, and anxiety) represent anti-flow (AF) states of being, which are not likely to result in manifestation of flow.

Overview

MD3 contains 12 data bits. Of these 12 data bits, four were coded as pro-flow (PF) and eight were coded as anti-flow (AF). Within each sub-dimension, data bits were further coded into predetermined sub-groups, which reflect the eight channels of experience. The basic structure and data bit distribution within MD3 can be seen in Figure 7. The contents of MD3 will now be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD3 findings.

MAIN DIMENSION (# of data bits)				Balance of Challenge & Skill (12)				
SUB DIMENSIONS (# of data bits)	Pro-flow (4)				Anti-flow (8)			
SUB GROUPS (# of data bits)	Arousal (0)	Flow (0)	Control (0)	Opp. To improve (4)	Boredom (1)	Relaxation (6)	Apathy (1)	Worry (0)	Anxiety (0)
# of THEMES	-	-	-	-	-	-	-	-	-
# of SUB THEMES	-	-	-	-	-	-	-	-	-
# of SUB THEME GROUPS	-	-	-	-	-	-	-	-	-
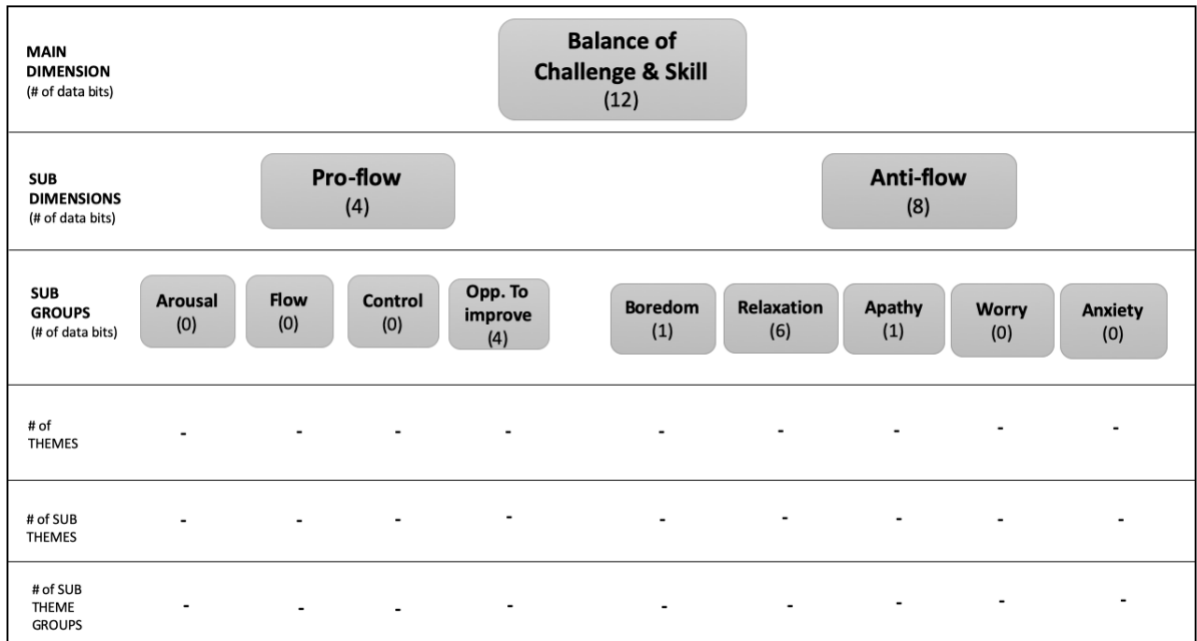
Figure 7. Basic final structure of MD3 with data bit distribution across sub-dimensions and predetermined sub-groups

Pro-flow

The pro-flow (PF) sub-dimension of MD3 contained four data bits. Each of the PF data bits were coded to a single pre-determined sub-group (See Figure 7). The pre-determined pro-

flow sub-groups include: arousal, flow, control, and opportunity to improve. The contents of the four pre-determined PF sub-groups will now be reviewed illustrated.

Arousal. The data yielded zero instances in which any of the authors described a state of arousal during heroin intoxication. This result does not indicate the absence of arousal, but rather that no authors labeled their state of being as aroused.

Flow. The data yielded zero instances in which any authors referred to experiencing a flow state during heroin intoxication. This result does not indicate the absence of flow, but rather that no authors labeled their state of being as in flow.

Control. The data yields zero instances in which any author explicitly describes themselves as being in a state of control during heroin intoxication. This result does not indicate the absence of control, but rather that no authors labeled their state of being as in control.

Opportunity for improvement. In four instances, authors reported that they feel there are opportunities to improve at heroin use, as they perceive that they have become more skilled at using heroin over time. Two authors explained that one must work at building a relationship with heroin before the experience can be fully enjoyed. Of this, heroinchic stated, '[after struggling to enjoy heroin] I read somewhere that you have to work at a relationship with heroin, so I decided to try it again, said fuck it, and smoked it. I must have done a very good job at nurturing a relationship because H has been with me for over a year now'. In addition, minnie explained that after some time they felt skilled and comfortable – 'I was smoking every morning and I became skilled and comfortable with it'.

Anti-flow

The anti-flow (AF) sub-dimension of MD3 contained eight data bits. Each of the AF data bits were coded to a single pre-determined sub-group (See Figure 7). The pre-determined anti-

flow sub-groups include: boredom, relaxation, apathy, worry, and anxiety. The contents of the five pre-determined AF sub-groups will now be briefly illustrated.

Boredom. In one instance, an author reported feeling bored during heroin intoxication. Of this, TinOCranberries stated, 'Heroin, however, became number one on my `most boring things one can do to one's veins' list'.

Relaxation. In six instances, authors described their state of being as relaxed during heroin intoxication. Authors reported that the relaxation is felt through both their body and mind, manifesting as a wave washing over them. Of the grandeur of the relaxation, two authors explained –

> 'The feeling of shooting dope is like those little things that feel good, stretching in the morning, the relaxation u feel as you sit in a hot tub' (Oblivious)

> 'Warm very gratifying state of relaxation and contentment, kind of like the feeling you have when you're young and your parents return after being away a long time. That type of reassuringness [sic] is what I feel when I shoot heroin.' (Lane)

Apathy. In one instance, an author reported their state of being as apathetic during heroin intoxication. Of this, JunkyMax stated, 'apathy wash[es] over me'.

Worry. The data yielded zero instances in which any author explicitly describes their state of being as worried during heroin intoxication. This result does not indicate the absence of worry, but rather that no authors labeled their state of being as worried.

Anxiety. The data yielded zero instances in which any author explicitly describes their state of being as anxious during heroin intoxication. This result does not indicate the absence of anxiety, but rather that no authors labeled their state of being as anxious

MD3 Summary

MD3 is a small main dimension, with only 12 total data bits. Of the 12 total data bits, four data bits (33%) were coded as PF, while eight data bits (67%) were coded as AF. The structure of the final coding frame within MD3 indicates that while there are some opportunities to improve at heroin use, for the members of the research sample, heroin intoxication did not provide the proper balance of challenge and skill necessary to foster flow. To the contrary, the predominant channel of experience related to heroin intoxication was relaxation, which represents a state of being that is incongruent with flow. Additionally, boredom and apathy, which were both reflected in the data, represent the antithesis of flow (Csikszentmihalyi, 1990, 1997). Therefore, the final structure of MD3 revealed that for members of the research sample, heroin intoxication is predominantly experienced as a low challenge activity, which is by virtue, un-flowlike. In summary, the final structure of MD3 indicates that for members of the research sample, heroin intoxication and flow are not similar in the element of balance of challenge and skill.

MD4 – Attention

Review of the Core Concept

The fourth main dimension in the final coding frame is attention (MD4). Csikszentmihalyi (1990, 1993, 1997) conceptualizes attention as psychic energy. In flow, attention is completely focused (Csikszentmihalyi, 1990). Focused attention can be understood as the increasingly rare phenomenon in which the entirety of an individual's psychic energy is devoted to a single task (Csikszentmihalyi, 1990, 1997). Focused attention is characterized by the absence of wandering or superfluous thoughts (Csikszentmihalyi, 1997; Csikszentmihalyi et al., 2017). When attention becomes focused, thoughts and feelings unrelated to the activity at hand disappear from consciousness (Csikszentmihalyi et al., 2017). Csikszentmihalyi (1997) explains that focused attention provides a sense of serenity that is largely missing in daily life. When

attention is laser focused on an activity, the stress, sadness, and obligations of the social world

vanish entirely, and so long as attention remains focused, an individual experiences mental and

emotional freedom (Csikszentmihalyi, 1990, 1997).

Overview

MD4 contains 20 data bits. Of the 20 data bits, 14 were coded as pro-flow (PF) and six

were coded as anti-flow (AF). The basic structure and data bit distribution within MD4 can be

seen in Figure 8. The contents of MD4 will now be illustrated in three sections: pro-flow findings,

anti-flow findings, and summary of MD4 findings.

MAIN DIMENSION (# of data bits)	**Attention** (20)	
SUB DIMENSIONS (# of data bits)	**Pro-flow** (14)	**Anti-flow** (6)
# of THEMES	4	3
# of SUB THEMES	1	-
# of SUB THEME GROUPS	-	-

Figure 8. Basic final structure of MD4 with data bit distribution across sub-dimensions

Pro-flow

The pro-flow sub-dimension of MD4 yielded 14 data bits. The PF data bits yielded four

themes (See Table 6). The pro-flow attention themes include: freedom from thinking, cessation of

superfluous thoughts, focused attention, and serenity. The pro-flow themes can be understood as

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instances of focused attention during heroin intoxication. The four pro-flow themes will now be briefly illustrated.

Table 6

Detailed Structure of Pro-Flow Attention Themes

	Theme	# of data bits in theme	# of data bits in sub-theme	# data bits not in a sub-theme
1	*Freedom from thinking*	5	3	2
	Sub-theme: *Feelings, not thoughts*	-	3	-
2	*Cessation of superfluous thoughts*	4	0	-
3	*Focused attention*	3	0	-
4	*Serenity*	2	0	-
	Total	**14**	-	-

Freedom from thinking. In five instances, authors reported that they experienced freedom from thinking during heroin intoxication. Some authors talked of having a completely blank mind, void of thoughts. Of the freedom from thinking, Spike explained, 'things seemed so detached, with no logic nor interest not [sic] use. just..blank'. In three instances, authors explained that thoughts become obsolete and are replaced with feelings during heroin intoxication. This is a sub-theme (See Table 6). Of this, Benjamin stated, 'thinking is not worth the time or effort, feeling is all that matters'. Additionally, snapple explained, 'heroin makes you stop thinking and feeling about everything expect how good it was'. One author provided a deeply contemplative reflection on the replacement of thoughts with feelings –

> 'If LSD and its hallucinogenic cousins are `thinking' drugs, then heroin…is definitly [sic] a `feeling' drug. Its not just feeling `good', not just the rush, its about feeling the things we usually don't because we are too busy thinking about things, analzying [sic] them,

braking them down, trying to understand everything. What I've learned to do is stop thinking so damn much and just exist. Before we learned a language, we couldnt [sic] think in words. Part of the magic of childhood was being able to percieve [sic] entire ideas without breaking them down and labeling their parts with words. Words put definite, closed-minded definitions on things. When I think without words, or just exist as I said, I simply feel whats [sic] going on. I get the entire spectrum of an idea without having to think about it. I think thats [sic] why heroin puts me even more in touch with the feelings, away from the thoughts' (Pharm).

Cessation of superfluous thoughts. In four instances, authors described the cessation of superfluous thoughts during heroin intoxication. Authors explained that during heroin intoxication their negative thoughts are vanquished. Of this, Lizard King stated that they '[felt] washed off of every little annoying thought I had'. In relation, Silver explained, 'No matter what scenario came into my mind, I was immediatley [sic] able to dismiss it as unimportant'.

Focused attention. In three instances, authors described their attention as focused during heroin intoxication. L.C.M. explained, 'Heroin demands my undivided attention, it demands absolute devotion'. Similarly, one author described intentionally focusing their attention (psychic energy) on their high – 'for the first hour or so I'd prefer to sit in silence, devoting all of my energy to feeling the high' (Professor surprise).

Serenity. In two instances, authors reported that they experienced a sense of serenity during heroin intoxication. For Mad Dash, heroin intoxication was, 'The most serene experience of my life'.

Anti-flow

The anti-flow sub-dimension of MD4 yielded six data bits. The AF data bits yielded three themes (See Table 7). The anti-flow attention themes include: trouble focusing, difficulty

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controlling thoughts, and difficulty thinking. The anti-flow themes can be understood as instances of unfocused attention during heroin intoxication. The detailed structure of anti-flow sub-dimension can be seen in Table 7. The three anti-flow themes will now be briefly illustrated.

Table 7

Detailed Structure of Anti-Flow Attention Themes

	Theme	# of data bits in theme	# of data bits in sub-theme
1	*Difficulty focusing*	3	0
2	*Difficulty controlling thoughts*	2	0
3	*Difficulty thinking*	1	0
	Total	**6**	-

Difficulty focusing. In three instances, authors described difficulty focusing during heroin intoxication. Authors reported that their mind is warped or goes cloudy. One author explained that while intoxicated on heroin, 'A movie was on television and I found it very hard to focus on it' (Seismic).

Difficulty controlling thoughts. In two instances, authors reported that they find it difficult to control their thoughts during heroin intoxication. Of this, Voyager stated, 'My thoughts weren't so easy to control, even with mantra'. Another author described the way their mind wandered during heroin intoxication – 'My mind wondered [sic] everywhere over the strangest things' (Blind Squid).

Difficulty thinking. In one instance, an author reported that they struggled to think during heroin intoxication. Of this, Marsupial stated, 'Thinking was extremely difficult'.

MD4 Summary

MD4 contains 20 data bits. Of the 20 total data bits, 14 data bits (70%) were coded as pro-flow (PF) and six data bits (30%) were coded as anti-flow (AF). While the final structure of MD4 indicates that heroin intoxication includes instances of un-focused attention, which are incongruent with fostering flow, the majority of data bits coded within MD4 represent flow-like experiences of attention. Most notably, members of the research sample reported freedom from thinking and the cessation of superfluous thoughts during heroin intoxication, which are key characteristics of flow. Furthermore, members of the research sample expressed that heroin intoxication provides a sense of serenity, which flow experiences are known to provide. In summary, the final structure of MD4 indicates that for members of the research sample, there is a similarity between heroin intoxication and flow in the element of focused attention.

MD5 – Merging of Action & Awareness

Review of the Core Concept

The fifth main dimension in the final coding frame is merging of action and awareness. Consciousness, as conceptualized by Csikszentmihalyi (1990, 1997), is the sum of an individual's psychic (mental) energy and awareness, which can either be organized or disorganized at any given moment. The merging of action and awareness can be understood as a state of completely ordered consciousness during which there is no separation between an individual's thoughts and their actions (Csikszentmihalyi et al., 2017, p. 29). Flow experiences are characterized by complete mind-body unity (Csikszentmihalyi, 1990, 1997). In other words, during flow, an individual's mind-body connection is so strong that separation between their mind and body is consciously indiscernible. Any level of disconnection between mind and body, then, is inherently flow-inhibiting. Csikszentmihalyi (1975/2014) explains that when action and awareness have merged, an individual operates on an instinctual level, which allows for an override of the

disembodied mind-body dichotomy that the average person is accustomed to (p. 135).

Additionally, Csikszentmihalyi (2014) explains that when action and awareness have merged, an

individual "does not operate with a dualistic perspective: one is very aware of one's actions, but

not of the awareness itself...The moment awareness is split so as to perceive the activity from

"outside," the flow is interrupted" (p. 138).

Overview

MD5 contains 16 data bits. Of the 16 data bits, zero were coded as pro-flow (PF) and 16

were coded as anti-flow (AF). The basic structure and data bit distribution within MD5 can be

seen in Figure 9. The contents of MD5 will now be illustrated in three sections: pro-flow findings,

anti-flow findings, and summary of MD5 findings.

Figure 9. Basic final structure of MD5 with data bit distribution across sub-dimensions

Pro-flow

The pro-flow (PF) sub-dimension of MD5 yielded zero data bits (See Figure 9). The complete absence of PF data bits indicates that for members of the research sample, heroin intoxication does not include any instances in which action and awareness are merged.

Anti-flow

The anti-flow (AF) sub-dimension of MD5 yielded 16 data bits. The AF data bits yielded a single theme: mind-body disconnect (See Table 8). The anti-flow themes can be understood as instances in which action and awareness are not merged. The anti-flow theme will now be briefly illustrated.

Table 8.

Detailed Structure of Anti-Flow Merging of Action and Awareness Themes

	Theme	# of data bits in theme	# of data bits in sub-theme	# of data bits not in a sub-theme	# of data bits in sub-theme groups
1	*Mind-body disconnect*	**16**	12	4	6
	Sub-theme: *Nodding*	**-**	8	-	-
	--Sub-theme group: *Dreamlike state*	-	-	-	4
	--Sub-theme group: *Inaction*	**-**	-	-	2
	Sub-theme: *'Gone but aware'*	**-**	2	-	-
	Sub-theme: *Outside perspective*	**-**	2	-	-
	Total	**16**	-	-	-

Mind-body disconnect. In 16 instances, authors described a disconnection between their mind and their body during heroin intoxication. Kaltoon explicitly described a disconnection between their mind and body during heroin intoxication – 'it was as if someone had disconnected my brain from my entire body...I've not had that feeling ever, not before, not since'. Another

author exclaimed, 'I suddenly had a feeling like I started leaving my body!' (Voyager). Some authors described an inability of their mind and body to work together seamlessly. Of this, Moreau explained, 'It was as if my body forgot what to do. But mentally I was fine'. Spike also shared, 'I tried to light a cigarette [sic], and it took me forever just to get the ligher [sic] to work. my strength [sic] has gone, my mind took a brake [sic]'.

Authors further described mind-body disconnection in three main ways: outside perspective, being 'gone but aware', and nodding. These are sub-themes (See Table 8). The mind-body disconnect sub-themes will not be briefly illustrated.

Nodding. In eight instances, authors described their consciousness and awareness while nodding during heroin intoxication. Nodding is a state of semi-consciousness often achieved during heroin intoxication (NIDA, 2018b). For members of the research sample, nodding is a highly desirable state. Of this, Negative Creep explained, 'At high doses, you fall in and out of consciousness, and getting this `nod' is what the veteran user prays for everytime [sic] he shoots up'. Authors conceptualized the experience of nodding during heroin intoxication in two main ways: as a dreamlike state and an emphasis on inaction. These are sub-theme groups (See Table 8). The sub-theme groups of nodding will now be briefly illustrated.

Dreamlike state. In four instances, authors described nodding as a dreamlike state, similar to one's state just as they are on the brink of fully falling asleep –

> 'It is possible to `nod out' or fall into a sort of daydream in which I am not asleep but my eyes close and I enter a state of limited responsiveness.' (Robby)

> 'I was awake but drifting in and out of a twilight zone. Short, strange dreams would fill my head space when I was out, and then I would come to to realize that those dreams were not my reality. This state was truly blissful. . . I liken it to that state you sometime achieve right before you fall asleep, when you hear sounds drift in one ear and out the

other, and when nothing could be more perfect than your current little world of snuggle around you. That is the nods.' (Poppy Girl)

'Then my eyes began to close and I fell into a dreamy state. I could open my eyes if I put in the effort, but I didn't want to fight the feeling. It was like that point right before I am unconscious and fall asleep. I can just pull myself out but I don't want to. I call it the twilight of reality.' (Recoveryguru)

One author explained that while in the dreamlike state of nodding, they experience a divided sense of awareness –

'It was like I was in a dream state with the one half of my being. Yet at the other side, I could feel myself.' (Voyager)

Inaction. In two instances, an author explained that there is an emphasis on mental and physical inaction during nodding –

'I close my eyes and try not to move, not to think, as I slowly melt away into the deep sea of nod' (Clemens)

'I was no longer conscious and I was not asleep. This my friends is the state of mind that is opiate land. I am not asleep cause I am still aware of the room I am in, and I can get up at anytime [sic]and take myself out of this trance. But I am not aware of what is happening around me. I lay completely content, I want nothing because everything I could possibly want is being recreated in my mind.' (Clemens)

'Gone but aware'. In two instances, authors described their consciousness as being simultaneously 'gone but aware'. Of this, Moreau stated, 'We are aware of what's going on but we feel completely gone at the same time'. Moreau also stated, 'We both are kinda just like: "Whoa!" – it was like a drunken ecstasy – completely gone but aware'.

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Outside perspective. In two instances, authors described viewing their experience during heroin intoxication from an outside perspective. In relation, one author described a feeling of separation from their body – 'As I sat in the parking lot at 10pm I felt completely separate from myself' (Csc). Another author explicitly referred to their distorted perception – 'The entire time, I felt like I was on the verge of just dropping out completely, almost like I was in a dream, or watching myself doing the things I was doing from an outside perspective' (Marsupial).

MD5 Summary

MD5 contains 16 data bits. Of the 16 data bits, zero (0%) of the data bits were coded as pro-flow (PF) and 16 data bits (100%) were coded as anti-flow (AF). The complete absence of PF data bits indicates that for members of the research sample, heroin intoxication does not include any instances in which action and awareness are merged. Furthermore, the final structure of MD5 indicates that for members of the research sample, heroin intoxication is characterized by disconnection of the mind and body, which is incongruent with flow.

While the final structure of MD5 indicates that for members of the research sample, action and awareness are not merged during heroin intoxication, it also indicates that there may be a notable shadow parallel within the experience of nodding. In other words, while action and awareness are clearly not merged during heroin intoxication, individuals may experience a feeling inversely redolent of merged action and awareness during nodding. In elaboration, members of the research sample reported that they intentionally practice inaction during nodding to preserve their nod. Additionally, members of the research sample reported experiencing an altered sense of awareness while nodding and describe their actions as instinctual in nature. In this sense, it can be understood that the experience of nodding during heroin intoxication is so different from a state of merged action and awareness, yet still so experientially salient in its own right, that it may manifest in a similar, yet decidedly garbled, state of primal functioning in which an individual

only acts on instinct, rather than conscious thought. In this sense, the final structure of MD5 indicates that during nodding, members of the research sample experience an inverted version of merged action and awareness – merged inaction and altered awareness.

MD6 – Control

Review of the Core Concept

The sixth main dimension in the final coding frame is control. Csikszentmihalyi (1975/2014) explains that, "A person in flow is in control of his actions and of the environment" (p. 142). Sense of control is best conceptualized as an absence of worry, fear, or anxiety (Csikszentmihalyi, 1975/2014). Sense of personal safety is directly tied to sense of control, as an individual can only experience fearlessness when they feel safe (Csikszentmihalyi, 1990, 1997). This does not imply that an individual lacks a healthy respect or appreciation for their safety, but rather that their skill level and focused attention provide them with the necessary confidence to participate in an activity without the intrusion of worrisome thoughts (Csikszentmihalyi, 1975/2014). An individual's sense of control is determined by the degree to which they fear that they could lose control (Csikszentmihalyi, 1975/2014). Perception is paramount in terms of control and safety, as an individual need not actually be in control or be safe to experience flow, but they must perceive that they are (Csikszentmihalyi, 1975/2014).

Overview

MD6 contains 67 data bits. Of the 67 data bits, 18 data bits were coded as pro-flow (PF) and 49 data bits were coded as anti-flow (AF). The basic structure of MD6 can be seen in Figure 10. The contents of MD6 will not be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD6 findings.

Figure 10. Basic final structure of MD6 with data bit distribution across sub-dimensions

Pro-flow

The pro-flow (PF) sub-dimension of MD6 yielded 18 data bits. The PF data bits yielded

four themes (See Table 9). The pro-flow control themes include: feeling powerful/invincible,

feeling comfortable/at ease, sense of safety, and sense of security. The pro-flow themes will now

be briefly illustrated.

Table 9

Detailed Structure of Pro-Flow Control themes

	Theme	# of data bits in theme	# of data bits in sub-theme	# data bits not in a sub-theme
1	*Feeling powerful/invincible*	**7**	2	5
	Sub-theme: *Feeling godlike*	**-**	2	-
2	*Feeling comfortable/at ease*	**5**	0	-

3	*Sense of safety*	**3**	0	-
4	*Sense of security*	**3**	0	-
	Total	**18**	-	-

Feeling powerful/invincible. In seven instances, authors reported feeling powerful or invincible during heroin intoxication. Of this, Lane stated, 'I felt somewhat privileged and powerful, in a sickening kind of way'. Another author related, 'Nothing could touch me. I was invincible, without the energy of being invincible" (Silver). Some authors conceptualized their sense of power as godlike. This is a sub-theme (See Table X). In relation, Tamara recalled, 'As the needle touched my skin all my fears were gone. I've no longer been a scared, lost and lonely little girl with nothing to say. I became a god'.

Feeling comfortable/at ease. In five instances, authors described feeling comfortable or at ease during heroin intoxication. In relation, sunny explained that they felt 'perfect comfort' during heroin intoxication. Another author recalled, 'i felt so cozy in my body with heroin running thru my veins' (snapple).

Sense of safety. In three instances, authors reported feeling safe during heroin intoxication. Of this, one author explained, 'Feeling that I was safe from any possible threat to my body, my emotions, myself in general' (sick of it all).

Sense of security. In three instances, authors reported feeling secure during heroin intoxication. Katriss described heroin intoxication as, 'A very secure feeling'. Another author described a sense of security as the most impactful aspect of heroin intoxication – 'The best part for me was the security' (Silver).

Anti-flow

The anti-flow (AF) sub-dimension of MD6 yielded 49 data bits. The AF data bits yielded seven themes (See Table 10). The anti-flow control themes include: inability to control one's own body, lack of regard for personal safety, feeling fearful, feeling trapped, lessons learned in control, heroin takes control, and surrender. The anti-flow themes will now be briefly illustrated.

Table 10

Detailed Structure of Anti-Flow Control Themes

	Theme	# of data bits in theme	# of data bits in sub-theme	# data bits not in a sub-theme
1	*Inability to control one's own body*	**31**	31	0
	Sub-theme: *Breathing challenges*	**-**	2	-
	Sub-theme: *Gross and fine motor impairment*	**-**	14	-
	Sub-theme: *Inability to keep eyes open/stay awake*	**-**	10	-
	Sub-theme: *Inability to speak*	**-**	2	-
	Sub-theme: *Passing/blacking out*	**-**	3	-
2	*Lack of regard for personal safety*	**6**	0	-
3	*Feeling fearful*	**4**	2	2
	Sub-theme: *Fear is fleeting*	**-**	1	-
	Sub-theme: *Spontaneous prayer*	**-**	1	-
4	*Feeling trapped*	**4**	0	-
5	*Lessons learned in control*	**2**	0	-
6	*Heroin takes over*	**1**	0	-
7	*Surrender*	**1**	0	-
	Total	**49**	-	-

Inability to control one's own body. In 31 instances, authors reported an inability to control their own body during heroin intoxication. Authors reported five main ways that they are unable to control their own body during heroin intoxication: breathing challenges, gross and fine motor impairment, inability to keep eyes open/stay awake, inability to speak, and passing/blacking out. These are sub-themes (See Table 10).

In two instances, authors reported that they forget to breathe during heroin intoxication or that they could not breathe properly. In two other instances, authors reported losing the ability to speak. Of this, Katriss stated, 'I tried to talk, but my lips stayed silent'. In 10 instances, authors report that they were unable to keep their eyes open or stay awake during heroin intoxication. In relation, Csc described, 'My eyes grew heavy, and opening them felt like a struggle'. Voyager elaborated, 'I remember I sat in front of my computer looking for somebody on the Internet, but I gave up because my head was hitting the keyboard every 5 minutes. I couldn't type properly. All in all, I killed my body temporarly [sic]!'. In 14 instances, authors reported impaired gross and/or fine motor skills, such as inability to walk or use their fingers. Of this, Moreau stated, 'my coordination was so out of wack that I didn't know how to walk. It was nothing like not being able to walk as in, for example, while being under the influence of alcohol. It was rather as if my body didn't know how'. Finally, in three instances, authors described passing out or blacking out during heroin intoxication. One author elaborates –

> 'I couldn't breathe and my pants were wet. I had pissed myself. The reason I couldn't
> breathe was the blood in my nose and throat, presumable from falling out of my chair and
> onto the wooden floor when the heroin knocked me out.' (Smithie)

Lack of regard for personal safety. In six instances, authors described a lack of regard for their personal safety. Some authors elaborated –

'I just layed [sic] there, calmly pondering on what's happening to me. `Have I OD'ed? I donno. Whatever.'' (Katriss)

'Suddenly I noticed I wasn't breathing. The discomfort feeling I get from holding my breath was completely shut down by the heroin. This was rather amusing to me, I had to remind myself to breath every now and then.' (Katriss)

'I could have been robbed, shot and have my id cards taken, all that crazy shit that happens to americans [sic] that go down there after dusk. But I simply didn't give a fuck. I felt so good. Nothing could go wrong.' (Blind Squid)

'I kept nodding off, and P kept slapping me awake. He had to go home to his girlfriend, but he didn't want to leave me the way I was. This was all registering in my brain as very, very bad, but I still didn't care.' (burton)

Feeling fearful. In four instances, authors reported being afraid/experiencing fear during heroin intoxication. Of this, Ferreally stated, 'I was losing my breath and I could not let my friend know how I felt. I was getting scared'. One author expressed that their fear is fleeting or short-lived, while another author expressed a fear so intense that they burst into spontaneous prayer, pleading for their life. These are sub-themes (See Table 10). Of fleeting fear, burton recalled, 'a very small part of me was scared. . . but the devil flowing through my veins cancelled all of that fear out. Instead, I rode it for all it was worth'. Of fear-induced prayer, Laikalover described –

'During this time I was trying to keep myself awake, I was trying to get to my feet, trying to pull myself up by holding the bed and the wall, falling all over the place, my legs like jelly, my chest tight, my vision collapsing. At this time I was convinced I was going to die and said a prayer, I am not usually a religious person, in fact I am of no religion, only that of love, kindness and happiness [sic]. But as with all people in a circumstance like this, when faced with what you believe is certain death I think that you automatically

[sic] pray, its [sic]just something that you do. Eventually I managed to get over all this, it lasted about 10 minutes. A very bad experience. What I feel so scared about is that I resigned myself to the fact that I was about to die. This is a frightening thought to me.'

Feeling trapped. In four instances, authors described feeling pleasantly trapped inside their body during heroin intoxication. Of this sensation, Spike stated, '[it] glued me back into my seat. we sat there, barely moving, I felt good, half paralysed [sic], as if something just clicked me off.' Another author described, 'i felt like i was trapped in my body. not in a bad way' (snapple).

Lessons learned in control. In two instances, authors reported that heroin intoxication taught them lessons about their ability to control themselves or the drug. In relation, snapple explained that with other drugs, they felt in control, but heroin is a very different experience – 'I was convinced that whenever i took any drugs, i was always in control and that the risks therefore, were virtually nonexistent [sic]. [but heroin is different]'. Similarly, Trips explained that they felt a general sense of control in their life before they experienced heroin intoxication, which changed their understanding of control – 'I learned that I do not have the ability to control everything, and H helped me to understand that.'

Heroin takes over. In one instance, an author reported that during heroin intoxication, heroin completely takes over their mind and body – 'It is the most devious drug I have come across, totally taking over mentally, physically' (lyndsie).

Surrender. In one instance, an author reported that they relinquished control by surrendering to the experience of heroin intoxication – 'I fell back into my seat and just surrendered [sic]' (Katriss).

MD6 Summary

MD6 contains 67 data bits. Of the 67 data bits, 18 data bits (27%) were coded as pro-flow (PF) and 49 data bits (73%) were coded as anti-flow (AF). The final structure of MD6 indicates that many members of the research sample perceive that they are safe during heroin intoxication despite reporting an actual lack of control. While the majority of authors described an actual lack of physical control, autonomy, or safety during heroin intoxication, the contents of the pro-flow sub-dimension reveal that outside of instances of overdose, authors still perceive that they are in control and safe during heroin intoxication. Despite being admittedly impaired by heroin intoxication, authors reported an astonishing sense of safety and security, which were described as outweighing the reality that that they are not actually in control of their body or the drug. Interestingly, in instances where authors demonstrated an actual lack of control, there was unanimous delight in its absence, even in some instances in which the author does not feel safe.

An individual's sense of control is determined by the degree to which they fear that they could lose control (Csikszentmihalyi, 1975/2014). In many instances, authors report indifference to being in control or delight in being out of control, which indicates that for the majority of authors, there is not a fear of losing control (outside of most instances of overdose). Without a fear of losing control, authors enjoy a perceived sense of safety and security. Csikszentmihalyi (1975/2014) explains that in relation to flow, an individual's perception of control or personal safety is of greater consequence than their actual control or personal safety. Therefore, the final structure of MD6 indicates that for members of the research sample, there is a similarity between heroin intoxication and flow in the element of control.

MD7 – Self-consciousness

Review of the Core Concept

The seventh main dimension of the final coding frame is self-consciousness. While in flow, individuals experience a loss of self-consciousness (Csikszentmihalyi et al., 2017). Loss of self-consciousness during flow manifests in relief from the ego (Csikszentmihalyi, 1975/2014). The ego can be understood as an individual's sense of self that responds to social pressures of being human (Csikszentmihalyi, 1975/2014). Loss of self-consciousness, then, may be best understood as a state in which a human is temporarily freed from the ego-driven confines of their human-ness (Csikszentmihalyi, 1975/2014). An individual in flow is temporarily relieved of existential fears and social pressures (Csikszentmihalyi, 2014/1975). Furthermore, loss of self-consciousness manifests in the profound phenomenon in which an individual feels as if they temporarily cease to exist (Csikszentmihalyi, 1990, 1997). In other words, an individual in flow is self-aware, but not aware of one's self (Csikszentmihalyi, 1975/2014). Loss of self-consciousness is further characterized by the temporary cessation of one's awareness of even their most basic human needs, such as food, water, or sleep (Csikszentmihalyi, 1990, 1997). If an individual experiences conscious awareness of self or of their responsibilities or problems, it is indicative of an engaged ego (the presence of self-consciousness), which is incongruent with fostering flow (Csikszentmihalyi, 1975/2014).

Overview

MD7 contains 58 data bits. Of the 58 data bits, 58 data bits were coded as pro-flow (PF) and zero data bits were coded as anti-flow (AF). The basic structure and data bit distribution within MD7 can be seen in Figure 11. The contents of MD7 will now be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD7 findings.

Figure 11. Basic final structure of MD7 with data bit distribution across sub-dimensions

Pro-flow

The pro-flow (PF) sub-dimension of MD7 yielded 58 data bits. The PF data bits yielded

two themes: relief from human-ness and relief from personhood (See Table 11). The two pro-

flow themes will now be briefly illustrated.

Table 11

Detailed Structure of Pro-Flow Self-Consciousness Themes

	Theme	*# of data bits in theme*	*# of data bits in sub-theme*	*# data bits not in a sub-theme*
1	*Relief from human-ness*	**41**	41	0
	Sub-theme: *Ceasing to care*	**-**	16	-
	Sub-theme: *Disappearance of problems*	**-**	9	-
	Sub-theme: *Escape from the human condition*	**-**	6	-

	Sub-theme: *Escape from pain and suffering*	-	4	-
	Sub-theme: *Relief from anger/aggression*	-	3	-
	Sub-theme: *Relief from anxiety*	-	3	-
2	*Relief from personhood*	**17**	17	0
	Sub-theme: *Separation from the world/society*	-	11	
	Sub-theme: *Suspended existence*	-	5	
	Sub-theme: *Loss of self-importance*	-	1	-
	Total	**58**	-	-

Relief from human-ness. The first PF theme is relief from human-ness. In 41 instances, authors reported relief from their human-ness during heroin intoxication. This is the first pro-flow theme. Authors conceptualized relief from their human-ness in six main ways: ceasing to care, disappearance of problems, escape from the human condition, escape from pain and suffering, relief from anger/aggression, and relief from anxiety. These are sub-themes (See Table 11). The relief from human-ness sub-themes will now be briefly illustrated.

Ceasing to care. In 16 instances, authors reported that they completely cease to care about themselves, others, or issues in their lives during heroin intoxication. Of this, Heroin stated, 'I didn't care about anyone or anything around me'. In agreement, Anonymous (Erowid Report ID 102169) stated, 'I didn't have a care in the world'. For Mack, there was a 'release of inhibitions and apprehensions' during heroin intoxication. In relation, minnie stated, '[while high] nothing bothers me'. Several authors provided vivid elaboration –

'This is the key to the heroin high: Nothing matters, hot or cold, fun or boring, big or small. When one is high on smack, one looks at the outside world and has only one thought: Who gives a fuck?' (Negative Creep)

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'No matter what stress I was under (and believe me, right now, that's A LOT), it was temporarily removed. . . no, not removed, dismantled. It was still there, but, as the junky cliche' [sic] goes, I didn't care.' (Silver)

'I felt like a brainless zombie who didn't care about ANYTHING. I wouldn't call it `liborating' [sic], but defently [sic] escaping from all the bullshit that envovles [sic] living' (Spike)

Disappearance of problems. In nine instances, authors reported a complete disappearance of their problems during heroin intoxication. Of this, K stated, 'it was as if all of the pain and problems in my life were gone'. Another author explained, 'what heroin can do for you is that when you invite it into your body, it makes you forget your problems' (snapple). One author described the disappearance of problems as cleansing – 'I am washed off of every sin, every bad thought, every problem' (Lizard King). One author explained, 'all of the worlds [sic] problems drift away. They don't really drift away. . . you just don't care that they are there. The only thing that matters is that you are there at that moment' (Incudrew). The disappearance of problems is so powerful that one authors warned – 'I didn't care about the problems in my life, and work seemed like something completely pointless, I see how people become addicted to this' (Gary).

Escape from the human condition. In six instances, authors reported an escape from the human condition during heroin intoxication. Of this, Justine stated, 'Heroin is a delicious and evocative drug. It makes me forget that I am human'. Another author explained, 'I no longer know of emy body, earth, people, or even that I should know about it' (Mad Dash). Other authors reported that they lose awareness of their basic human needs during heroin intoxication –

'Heroin did it all for me. She takes away all things wrong with me, pain, anxiety, sleeplessness, hunger' (TarMonkey)

'It was nice to have a temporary relief from the concerns of this life, a lot like living in this world but having no idea or care about how it works, not needing food, or a job, or a place to live or to ever go to the bathroom but still functioning. Yeah, for me heroin was exactly like that and a nice escape.' (Kaltoon)

Escape from pain and suffering. In four instances, authors reported an escape from physical and emotional pain and suffering during heroin intoxication. Of this, n00bian stated, 'Any pain I have, be it physical or mental just disappears'. In relation, Twigburst explained, 'none of the pains that are present in everyday life were present'. One author elaborated –

'Perhaps one of the best feelings is actually the absence of feelings. There is a complete emotional, psychological, and physical numbness that I get with Heroin. I don't have a care in the world, and there isn't one damn thing that could ever bother me. It is a complete temporary escape from all pain.' (sepulfreak)

Relief from anger/aggression. In three instances, authors reported relief from anger and aggression during heroin intoxication. Of this, Observer stated, 'Even if I was angry, everything seemed OK. This is a cure-all for people full of piss and vinegar'. In relation, one author pontificated –

'I thought about the stresses of daily living, of running around trying to meet deadlines and the tension of ritualistic living as being a part of today's humanity requires. I wondered how it would be if everybody in the world could experience what I was enjoying right now. There would definitely be no aggression or fighting' (Lane)

Relief from anxiety. In three instances, authors reported relief from anxiety during heroin intoxication. Of this, Angela explained, 'I found it better than the anti-anxiety pills that I was once prescribed... it was like heroin attacked the problem at the source". In relation, Angela also

stated, 'I remember just sitting there, and then suddenly it was as if every negative emotion and anxiety I had felt before withered away'.

Relief from personhood. The second PF theme is relief from personhood. In 17 instances, authors reported experiencing relief from personhood during heroin intoxication. This is the second pro-flow theme. Authors conceptualized relief from personhood in three main ways: separation from the world/society, suspended existence, and loss of self-importance. These are sub-themes (See Table 11). The relief from personhood sub-themes will now be briefly illustrated.

Separation from the world/society. In 11 instances, authors reported experiencing the sensation that they are separate, detached, or dissociated from the world or society during heroin intoxication. Of this, TarMonkey stated, 'the entire world around you melts away'. Another author explained, 'I closed my eyes, feeling detached from the world and society. I felt as if I was somewhere else, far away and nonexistant [sic]' (Oblivious). In addition, Katriss stated, 'The world was so far away, like being on a boat in the middle of the ocean'. Another author offered, 'every so often I would realise [sic] just how detached from the `real' world I would be' (n00bian).

Suspended existence. In five instances, authors reported that they feel their existence is suspended during heroin intoxication. Of this, one author stated, 'I simply exist in that moment and that [sic] all that matters' (Lizard King). Similarly, olya recalled, '[while high] Nothing else existed outside of the moment'. For Kaltoon, heroin intoxication felt like a temporary death – 'I then went into a kind of black hole of existence, I guess what it would be like to die and then have the soul go into eternal sleep'. Of their suspended existence, one author contemplated –

'I've had a long hard week at work, but it doesn't matter now Nothing matters now, except the very concept of `now'. `Now' is the only thing I can prove. . .my memories

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fade, my future is foggy and could happen any number of ways, or not at all. All my conciousness [sic] percieves [sic] is this moment I am in, which is always gone as soon as it is there.' (Pharm)

Finally, for nam 67, there was a feeling of nonexistence – 'I was not even sure that I actually existed, kinda like floating'.

Loss of self-importance. In one instance, an author described a loss of self-importance during heroin intoxication – "Falling through the universe while sitting completely still. Who am I again? O well, it does not matter anymore. . ." (Mad Dash).

Anti-flow

The anti-flow (AF) sub-dimension of MD7 yielded zero data bits (See Figure 11). The complete absence of AF data bits indicates that for members of the research sample, heroin intoxication does not engage the ego or promote self-consciousness.

MD7 Summary

MD7 contains 58 data bits. Of the 58 data bits, 58 data bits (100%) were coded as pro-flow (PF) and zero data bits (0%) were coded as anti-flow (AF). The complete absence of AF data bits indicates that for members of the research sample, heroin intoxication does not engage the ego or promote self-consciousness. To the contrary, the final structure of MD7 indicates that for members of the research sample, heroin intoxication provides powerful relief from the ego and a total loss of self-consciousness. Therefore, the final structure of MD7 indicates that for members of the research sample, heroin intoxication and flow are similar in the element of loss of self-consciousness.

MD8 – Time

Review of the Core Concept

The eighth main dimension in the final coding frame is time. In flow experiences, the construct of time becomes irrelevant and the experience of time is distorted (Csikszentmihalyi et al., 2005/2014). During flow, hours can pass by in what feels like only minutes and minutes can seem to contain what feels like hours of experience (Csikszentmihalyi et al., 2005/2014). Furthermore, while in a flow state, an individual is unaware that time is passing at all, and it is only upon later reflection that one realizes that they have experienced time distortion (Csikszentmihalyi 1990, 1997). Furthermore, in most circumstances, preoccupation with time or awareness of time passing during an activity is an indicator of boredom or stress, which are incongruent with flow (Csikszentmihalyi et al., 2005/2014). In this sense, flow presents the unique opportunity for individuals to "escape the tyranny of time" (Csikszentmihalyi et al., 2017, p. 35).

Overview

MD8 contains 12 data bits. Of the 12 data bits, 12 data bits were coded as pro-flow (PF) and zero data bits were coded as anti-flow (AF). The basic structure and data bit distribution within MD8 can be seen in Figure 12. The contents of MD8 will now be illustrated in three sections: pro-flow findings, anti-flow findings, and summary of MD8 findings.

Pro-flow

The pro-flow (PF) sub-dimension of MD8 yielded 12 data bits. The PF data bits yielded six themes (See Table 12). The pro-flow themes include: time slows down, time becomes a foreign concept, time speeds up, time ceases to exist, time becomes irrelevant, and time stops

entirely. The detailed structure of the pro-flow themes can be seen in Table 12. The six pro-flow

themes will now be briefly illustrated.

Figure 12. Basic final structure of MD8 with data bit distribution across sub-dimensions

Table 12

Detailed Structure of Pro-Flow Time Themes

	Theme	# of data bits in theme	# of data bits in sub-theme
1	*Time slows down*	**5**	0
2	*Time becomes a foreign concept*	**2**	0
3	*Time speeds up*	**2**	0
4	*Time ceases to exist*	**1**	0
5	*Time becomes irrelevant*	**1**	0
6	*Time stopes entirely*	**1**	0
	Total	**12**	-

Time slows down. In five instances, authors reported that time seems to slow down during heroin intoxication. Some authors reported that moments feel like they last an eternity. Of this, Silver explained, 'I couldn't seem to remember WHEN it hit me, I just knew that it had hit me at some point, and I had been feeling this way for what seemed an eternity'. Another author recalled, 'Time dilation is enormous, it almost seems like time has frozen, a minute feels like an hour' (Psych0naut).

Time becomes a foreign concept. In two instances, authors reported that time becomes a foreign concept during heroin intoxication. Of this, Chemical Boy expressed, 'After a few more moments of this- or maybe it was minutes, hours even- things start to come in a little more clearly'.

Time speeds up. In two instances, authors reported that time seems to speed up during heroin intoxication. Of this, Ms. Jenkins stated, '[heroin] made time pass about 5 times faster than it normally would, and it seemed that I had nothing but time'. In addition, Kaltoon stated, 'Apparently I had just been laying there for almost two hours. It felt as if only minutes had passed'.

Time ceases to exist. In one instance, an author reported that time ceases to exist during heroin intoxication – 'time doesn't seem to exist' (n00bian).

Time becomes irrelevant. In one instance, an author reported that time is irrelevant during heroin intoxication – 'After some amount of time (time becomes fairly irrelevant) I was very, very high' (Bejamin).

Time stops entirely. In one instance, an author reported that time seems to stop during heroin intoxication – 'Time hit's a stand-still' (Observer).

Anti-flow

The anti-flow (AF) sub-dimension of MD8 yielded zero data bits (See Figure 12). The complete absence of AF data bits indicates that there are no instances in which members of the research sample experienced a flow-inhibiting preoccupation with time during heroin intoxication.

MD8 Summary

MD8 contains 12 data bits. Of the 12 data bits, 12 data bits (100%) were coded as pro-flow (PF) and zero data bits (0%) were coded as anti-flow (AF). The final structure of MD8 indicates that for members of the research sample, time becomes irrelevant during heroin intoxication and the perception of time is distorted during heroin intoxication. The irrelevancy of time and distorted experience of time experienced during heroin intoxication are congruent with fostering flow. The complete absence of AF data bits indicates that there are no instances in which members of the research sample experienced a flow-inhibiting preoccupation with time during heroin intoxication. Therefore, the final structure of MD8 indicates that for members of the research sample, heroin intoxication and flow are similar in the element of distortion of time.

M9 – Motivation

Review of the Core Concept

The ninth main dimension in the final coding frame is motivation. Flow is characterized by the manifestation of intrinsic motivation (Csikszentmihalyi, 1990, 1997). Although many conceptualizations of intrinsic motivation exist, flow theory is based on an activity-oriented model of intrinsic motivation (Landhäußer & Keller, 2012). Landhäußer and Keller (2012) offer the following description of activity-oriented intrinsic motivation: "Activities are seen as intrinsically motivated when the main incentive lies in the performance of the activity itself,

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while activities are seen as extrinsically motivated when the main incentive lies in its expected

results" (p. 69). In relation, Csikszentmihalyi et al. (1983/2014) explain that when

conceptualizing intrinsic motivation, it is easiest to begin by understanding what it is *not*.

Intrinsically motivated behavior is not driven by a desire to achieve secondary goals, nor

is it driven by the glamour of external reward or the threat of external consequences

(Csikszentmihalyi, 1990, 1997). Intrinsic motivation, then, is driven by a desire to participate in

an activity because participation in the activity *is* the primary reward. Conversely,

Csikszentmihalyi and Nakamura (1989/2014) explain that when the reason for participating in an

activity is to achieve something outside of or separate from the activity at hand, the motivation

for participation is extrinsic. While clear distinction can be made between individual intrinsic and

extrinsic motivations, motivation, in reality, is often messy and layered, and as such, an

individual seldom experiences simply either/or during a given activity (Csikszentmihalyi &

Nakamura, 1989/2014). As such, it can be understood that through the lens of flow theory, the

presence of external motivations or rewards does not inhibit the possibility of intrinsic

motivations or rewards also being present at any given time.

Overview

MD9 contains 55 data bits. Of the 55 data bits, 17 data bits were coded as pro-flow (PF)

and 38 data bits were coded as anti-flow (AF). The basic structure and data bit distribution within

MD9 can be seen in Figure 13. The contents of MD9 will now be illustrated in three sections:

pro-flow findings, anti-flow findings, and summary of MD9 findings.

MAIN DIMENSION (# of data bits)	Motivation (55)	
SUB DIMENSIONS (# of data bits)	Pro-flow (17)	Anti-flow (38)
# of THEMES	4	8
# of SUB THEMES	-	2
# of SUB THEME GROUPS	-	-

Figure 13. Basic final structure of MD9 with data bit distribution across sub-dimensions

Pro-flow

The pro-flow (PF) sub-dimension of MD8 contains 17 data bits. The PF data bits yielded four themes (See Table 13). The pro-flow themes include: curiosity, the feeling of being high, the experience of being high, and dark beauty. The pro-flow themes can be understood as types of intrinsic motivations for participating in heroin intoxication. The detailed structure of the pro-flow motivation themes can be seen in Table 13. The four pro-flow themes will now be briefly illustrated.

Table 13

Detailed Structure of Pro-Flow Motivation Themes

	Theme	# of data bits in theme	# of data bits in sub-theme
1	*Curiosity*	8	0
2	*The feeling of being high*	6	0

3	*The experience of being high*	2	0
4	*Dark beauty*	1	0
		Total **17**	**-**

Curiosity. In eight instances, authors reported that curiosity motivated them to use heroin for the first time. Many authors explained that they had a strong curiosity about heroin, which was present long before they finally tried using it. Of this, Train Wreck stated, 'For a long time I had been very curious about heroin'. Another author reported, 'The last several months, my interest in heroin has been piqued' (Silver). A few authors offered descriptions of their heroin-related curiosity –

'and despite all of the terrible things I had heard about it, I figured there had to be something good about it since my friends were so keen on doing it. I figured I would try it once, just to feed my curiosity.' (Seismic)

'I only wanted a taste. But you can never have just a taste of heroin now can you? My curiosity got the better of me and i gave in to temptation, going against my better judgement.' (Billy Bob)

'Sitting in the basement with friends while they pull the pluger [sic] and sit back into a state of complete euphoria was enough to get me thinking. I told myself that I could try it just the once, just to see what all the fuss was about. And so I did' (Train Wreck)

Finally, one author described a sense of remorse for indulging in their curiosity –

'I've always been the kind of person who tries everything once, on the principle of true knowledge. In other words, how can I give a valid opinion for or against something without experiencing it for myself? Only recently have I learned from this mistake, and I'd have to cite black tar heroin as the main reason' (BurnsXL)

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The feeling of the high. In six instances, authors reported that the feeling of heroin intoxication motivated them to use heroin for the first time or to continue using heroin. Of their decision to use heroin for the first time, Anonymous (Erowid Report ID 40957) stated, 'I wanted to experience the feeling of H'. Another author explained, 'I started for no real reason but to get high, just have a good feeling' (Mr. Scagnattie). Some authors were more specific about the feeling of heroin that motivated their use –

'I was all excited to finally get the chance to feel the effect that has gotten thousands of ppl [sic] addicted and killed' (snapple)

'The whole point of my experimentation with this drug is to find the rush that is so greatly sought by junkies' (I.B. Surprised)

'I was trying to capture the ultimate body orgasm' (Lane)

The experience of the high. In two instances, authors reported that the general experience of heroin intoxication motivated them to use heroin for the first time or to continue using heroin. Of their decision to try heroin for the first time, Blind Squid stated, 'I have read all the shit on the net about what it does and it seemed like it would be a great experience'. Of continuing to use heroin after their first time, Ms. Jenkins explained, 'I liked the high'.

Dark beauty. In one instance, an author reported that their motivation for using heroin is related to the inherent dark beauty of the heroin experience, which draws them in –

'The storm outside reflects my inner feelings. At first, a storm seems loud, violent, scary, and harsh. But it has a dark sense of beauty to it. All dark things are beautiful to me. Thats [sic] part of the reason I started doing heroin the first place.' (Pharm)

Anti-flow

The anti-flow (AF) sub-dimension of MD9 contains 38 data bits. The AF data bits yielded eight themes (See Table 14). The anti-flow themes include: relief from psychic entropy, escape from physical pain, unknown motivations, 'desperate times', peer pressure, to fall asleep, death, and notoriety. The anti-flow themes can be understood as types of extrinsic motivations for participating in heroin intoxication. The eight anti-flow themes will now be briefly illustrated.

Table 14

Detailed Structure of Anti-Flow Motivation Themes

	Theme	*# of data bits in theme*	*# of data bits in sub-theme*	*# data bits not in a sub-theme*
1	*Relief from psychic entropy*	20	14	6
	Sub-theme: *Escape from emotional pain*	-	9	-
	Sub-theme*: Escape from boredom*	-	5	-
2	*Escape from physical pain*	6	0	-
3	*Unknown motivations*	4	0	-
4	*Desperate times*	2	0	-
5	*Peer pressure*	2	0	-
6	*To fall asleep*	2	0	-
7	*Death*	1	0	-
8	*Notoriety*	1	0	-
	Total	**38**	-	-

Relief from psychic entropy. In 20 instances, authors reported that a desire to escape psychic entropy motivates their decision to participate in heroin intoxication. Negative emotions, such as sadness, depression, fear, anxiety, and boredom are all states of psychic entropy

(Csikszentmihalyi, 1997). Of this, Mr. Scagnattie explained, '[I'm] doing it for depression and to escape the world. If you can't deal with the world and the people in it, leave the world'. Additionally, burton lamented, 'I was dead inside'. Authors conceptualized their desire to escape psychic entropy in two main ways: escape from emotional pain and escaping boredom. These are sub-themes (See Table 14). The relief from psychic entropy sub-themes will now be briefly illustrated.

Escape from emotional pain. In nine instances, authors reported that escaping from emotional pain is a motivation for using heroin. From the horrors of war, to the anguish of betrayal, to bad breakups, to deep-rooted trauma, to apathy, several authors elaborated –

'My first experience with heroin was in Vietnam back in 6' [sic]. After one of the worst firefights that I'd ever been through, it was somewhere near the Cambodian border. I had left the base with 4 of my buddys [sic], only came back with 1. After that I was open to absolutely anything that would take my mind off of my dead friends. There we sat with our 2 spoons and 1 lonely candle, trying to forget' (nam 67)

'Well about a year and a half later I found out my fiance [sic] was cheating on me and it sent me overboard. After being clean for so long I jumped right back in to mask the pain and hurt that I was feeling from finding out the man I loved did that to me' (Samantha)

'The second time I used heroin was to drown the mental pain of losing a girlfriend I loved (in other words she dumped me)' (n00bian)

'Although I didn't realize it at the time, my major drug use was directly attributed to trying to numb the pain to these traumatic things. And it worked better than any therapy could have. And so I would keep doing it, until I was through the worst of whatever trauma had held me prisoner' (burton)

'Because when I needed support the most, no one was there to give it to me. Because I was broken, but I still had to lean on myself. Because doing so broke me even further...Because, because, because. . . I was a shell of a person. Incapable of any emotion that didn't involve anger or depression or pure apathy.' (burton)

Escape from boredom. In five instances, authors reported that their heroin use is motivated by boredom or simply having nothing better to do with their time. Of this, TinOCranberries explained, 'I become bored and destructive when I'm in my default consciousness, and strive to fill my days with at least one type of inebriation'. In addition, sunny explained that their heroin use is motivated by an underlying sense of apathy, 'Apathy has been an unwelcome presence in my adulthood...it gives me an overwhelmingly passive attitude to life'.

Escape from physical pain. In six instances, authors reported that a desire to escape physical pain motivates their heroin use. Of this, lyndise explained, 'I started h with intentions of ceasing pain'. Similarly, Kaltoon stated, 'I took heroin not knowing its effects, looking for an escape from the extreme muscle soreness and pain that I suffer daily'. For Crazydevs, there was a motivation to simply feel better – 'I remember always telling myself I would never lower myself to injecting, no matter what, but my head was aching so much that day, I just wanted to feel better'. Finally, lyndsie explained that heroin intoxication serves as a catchall remedy for anything that ails them and even the smallest discomfort motivates them to get high – 'Heroin has been my remedy for anything that ails them. Stub my toe? Gimme a bag. Cut my fingernail too short, hell gimme two bags'.

Unknown motivations. In four instances, authors reported that they do not know what motivates their decision to participate in heroin intoxication. One author stated, 'I don't know what brought that choice on' (Chemical Boy). Another author was unsure what motivated them,

but had a suspicion – 'I don't know why, but my suspicions are that I just wanted to FEEL something again. Something good' (burton).

Desperate times. In two instances, authors reported that their heroin use was motivated by 'desperate times'. In elaboration, one author stated, 'I have been exposed to H many times in the past and turned it down do [sic] to its incredible stigma. Apparently desperate times lead to desperate actions as I really dropped the ball here and gave in' (Billy Bob).

Peer pressure. In two instances, authors reported that their heroin use was motivated by peer pressure. Of this, Jon explained, 'I have been asked about the context of the circumstances surrounding the beginnings of my involvement with using heroin. Peer pressure, above all other things in my life, was the most influential'. For Heroin, the peer pressure came from a trusted loved one –

> 'My first experience with Heroin, came when my best friend and my boyfriend had finally convinced me into doing it. My best friend had been doing it for about 5 months before I first did it, I was so mad at her and so against her for doing it. She always tried to get me to try it, but I just wouldn't do it. But then I got with my boyfriend, and I loved him and I trusted him and I was sure that as long as he said it was okay, it was okay.'

To fall asleep. In two instances, authors reported that a desire to fall asleep motivated their heroin use. One author explained –

> 'My mind is zooming a million thoughts a minute, and my heart beats to the point that it keeps me awake. After about 30 minutes of keeping my eyes shut, here I am, a little annoyed at myself for not being able to control my bedtime thoughts. I prepare a shot of heroin, which I know will not put me to sleep, but it may ease my heart and at least put me in a dreamy state where I could eventually drift off into sleep' (Gnostika for Noddy)

Death. In one instance, an author reported that their heroin use was motivated by a desire to die. Of this, Steve recalls, 'My intention was to die, just to end everything. I woke up, so surprised I was not dead'.

Notoriety. In one instance, an author reported that their heroin use was motivated by a desire to achieve social notoriety. Of this, Blind Squid explained, 'Since then my friends have passed different drugs around such as the white turkeys, coke, shrooms, but none of them did heroin. The thought of trying that would make me stand out'.

MD9 Summary

MD9 contains 55 data bits. Of the 55 total data bits, 17 data bits (31%) were coded as pro-flow (PF) and 38 data bits (69%) were coded as anti-flow (AF). The final structure of MD9 indicates that for members of the research sample, heroin intoxication is both intrinsically and extrinsically motivated. The majority of data bits within MD9 represented extrinsic motivations for heroin intoxication. This indicates that for members of the research sample, there are many instances in which heroin intoxication is motivated by a result or a reward outside of the activity itself. However, the prevalence of PF data bits indicates that for members of the research sample, there are intrinsic motivations associated with heroin use as well. This indicates that for members of the research sample, there are instances in which the reward for using heroin is participation in the activity itself.

In addition to the prevalence of intrinsic motivations for using heroin, the structure of the entire final coding frame supports the notion that heroin intoxication provides intrinsic rewards. Csikszentmihalyi et al. (1983/2014) explain that the process outcomes of flow (focused attention, merging of action and awareness, sense of control, loss of self-consciousness, and distortion of time) are intrinsic rewards. The final structure of the coding frame indicates prevalence of focused attention (MD4), sense of control (MD6), loss of self-consciousness (MD7), and

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distortion of time (MD8). Therefore, the final structure of MD9 and the structure of the entire final coding frame, indicate that for members of the research sample, both intrinsic motivations and intrinsic rewards are present during heroin intoxication. In summary, the final structure of MD9 indicates that for members of the research sample, there is similarity between heroin intoxication and flow in the element of intrinsic motivation.

MD10 – Meaning

Review of the Core Concept

The tenth main dimension of the final coding frame is meaning. Csikszentmihalyi (1990) states that meaning can be understood, in a very basic sense, as the "significance of something" (p. 216). In a less basic sense, Csikszentmihalyi (1990) explains that meaning represents "the subjective order that a unified purpose brings to individual consciousness" (p. 217). Furthermore, Csikszentmihalyi (1990, 1997) explains that meaningful activities bring meaning to one's life. In relation, Csikszentmihalyi (1990) asserts, "The meaning of life is meaning: whatever it is, wherever it comes from, a unified purpose is what gives meaning to life" (p. 217). Flow is known to hold deep meaning, and as such, activities that foster flow add significance and value to the lives of those that participate in them (Csikszentmihalyi, 1990, 1997). The current main dimension delineates the meaning of heroin intoxication for members of the research sample.

Overview

MD10 contains 126 data bits. In divergence from the previous main dimensions, MD10 did not contain pre-determined pro/anti flow sub-dimensions. Sub-dimensions for MD10 were derived organically from the data. MD10 yielded four organically derived sub-dimensions (See Figure 14). The four sub-dimensions of meaning include: practical meaning (PM), experiential meaning (EM), affective meaning (AM), and spiritual meaning (SM). The four sub-dimensions of meaning will now be briefly illustrated, followed by a summary of MD10 findings.

MAIN DIMENSION (# of data bits)	Meaning (126)			
SUB DIMENSIONS (# of data bits)	Practical Meaning (8)	Experiential Meaning (40)	Affective Meaning (61)	Spiritual Meaning (17)
# of THEMES	3	9	11	3
# of SUB THEMES	-	-	-	-
# of SUB THEME GROUPS	-	-	-	-

Figure 14. Basic final structure of MD10 with data bit distribution across sub-dimensions

Practical Meaning

The practical meaning (PM) sub-dimension encompasses the tangible, practical value that authors attach to heroin intoxication. The PM sub-dimension contains eight data bits. The eight data bits yielded three themes (See Table 15). The PM themes can be understood as types of practical meaning that authors associate with heroin intoxication. The PM themes include: cessation of pain, heroin as a replacement for other drugs, and improved sleep. There are no sub-themes. The PM themes will now be briefly illustrated.

Table 15

Practical Meaning Themes (in Descending Order)

	Theme	*# of data bits*
1	*Cessation of pain*	4
2	*Heroin as a replacement for other drugs*	2

3	*Improved sleep*	2
	Total	**8**

Cessation of pain. In four instances, authors reported that heroin allows them to experience the cessation of pain. One author explained, 'I will always know the sweet feeling of H and it will always tempt me with her ability to take away all pain' (TarMonkey). In relation, TarMonkey also stated, 'living pain free is priceless'. Other authors regard heroin intoxication as having medicinal value–

'No pain. Everyday was another fucking nightmare, but I had my medicine [heroin] to help me deal with it.' (Your Friend)

'I don't think it's possible to find better medicine than a little dose of black tar heroin' (Angela)

Heroin as a replacement for other drugs. In two instances, authors reported that heroin eliminates their want or need for other types of drugs. Of this, one author states, 'One positive thing about Heroin was that it completely eradicated the need and want for other drugs because it made us realise [sic] how crap everything else is' (bee). Another author elaborates –

'Heroin is the only drug that really got me, and I noticed this was a pretty common theme in other heroin or opiate stories, like the others, I have had my time with coke, meth, lsd, shrooms, weed, alcohol, e, xanax, and whatever else I could shove in some orifice in my face. Once there was H, there was nothing else. Which for me, was a good thing. My mother died of cirrhosis of the liver at 31, I was on my way. H helped me quit drinking and alcohol is way harder on the body than H when smoked or snorted' (heroinchic)

Improved sleep. In two instances, authors reported that heroin intoxication offers them improved quality of sleep. For Angela, 'My intense insomnia went away'. Similarly, Romska stated, 'It's the best sleep anyone could ever get'.

Experiential Meaning

The experiential meaning (EM) sub-dimension encompasses the individual nuances of the heroin intoxication experience that authors identify as holding value or significance. The EM sub-dimension contains 40 data bits. The 40 data bits yielded nine themes (See Table 16). The EM themes can be understood as types of experiential meaning that authors associate with heroin intoxication. The EM themes include: nothingness, life without heroin feels incomplete, nothing compares to heroin intoxication, desire for permanence, heroin intoxication as a ritual, new life/world, shared experience creates connection, heroin is a guilty free time pleasure, and forever changed by the experience. There are no sub-themes. The nine EM themes will now be briefly illustrated.

Table 16

Experiential Meaning Themes (in Descending Order)

	Theme	*# of data bits*
1	*Nothingness*	10
2	*Life without heroin feels incomplete*	9
3	*Nothing compares to heroin intoxication*	6
4	*Desire for permanence*	4
5	*Heroin intoxication as a ritual*	4
6	*New life/world*	3
7	*Shared experience creates connection*	2
8	*Heroin as a guilty free time pleasure*	1

Nothingness. In ten instances, authors reported that heroin intoxication manifests in a sense of complete nothingness. Of this, Mr. Scagnattie stated, 'The high was great. Just pure nothingness'. A few authors elaborated of the profound nature and meaningful of heroin's nothingness –

> 'Heroin is the best feeling in the world. And that's what gets people addicted. No matter what, for the rest of their life they know, that nothing will ever make them feel so free and so good. Its just like an intense nothingness. You cant even describe it. Even tho [sic] I got sick so many times..it was all worth it, it was a small price to pay for that amazing feeling. I know nothing I will ever do will ever compare to doing dope. And that is what will keep me doing it probably for the rest of my life' (Heroin)

> 'Just a few seconds after I blow out, something very strong grows in my body, the heroin is hitting hard. It's like getting run over by a freighttrain [sic] of nothingness' (Psyc0naut)

> 'People always try to put into words the feeling smack brings you.. that's just the problem.. it doesn't.. It was the most intense nothingness there ever was' (Silver)

> 'I just sat staring into nothing, wondering about nothing, it was a instant effect. I was in oblivion, a world in nothingness as I was enveloped in a world of pleasure' (Trips)

Finally, for one author, the nothingness of heroin felt 'Something like a death I guess' (Tamara).

Life without heroin feels incomplete. In nine instances, authors reported that life without heroin feels incomplete or diminished in quality. Of this, Billy Bob stated, 'After just after trying it once, life seemed dull again'. Similarly, JunkyMax stated, 'And honestly, as much as it sucks, I

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like a dope-filled life rather than a clean life. I can't take the boredom'. And for Chucklez, 'The joys of Heroin are so simple yet so complex. Without Dope I often feel I cannot accept the world for what it is'. For several authors, heroin provides an alternative to the monotony and social pressures of life as a human –

> 'I am probably wrong but I fear giving up smack would mean growing up completely and god - do I hate the thought of that. It's somehow like we need Smack to balance out all this other stuff that takes over our lives when we do choose life and choose a career, and a fucking big television. There's [sic] mortgages, insurances, business meetings, commuting to work on grey and rainy Tuesday mornings with all the other poor nine to fivers. That fucking can't be all there is?' (bee)

> '[on life without heroin] being sober was miserable for me. I hated it more than anything in the entire world, its like something just isn't right, you think too much, care too much, get over sensitive to anything people say, and it just feels like something is missing, all you can think about is getting high, how bad you just want to get high again' (Romska)

Nothing compares to heroin intoxication. In six instances, authors reported that the experience of heroin intoxication is so profound that nothing compares to it. Of this, Benjamin stated, 'I'm convinced that there is no such thing as an experience more visceral than heroin'. In relation, Bejamin also stated, 'When you're on heroin, you know that no-one feels as good as you do'. Another author explained, '[heroin] feeds your body and your mind...sensations that nothing else can give you' (snapple). The feeling of heroin intoxication is so profound that Ferreally warned, 'I was soo [sic] engrossed in the feeling that my left eye shed a tear. I now knew why people have died on this drug'. Similarly, one author explained –

'Now I have to live w/ the fact that no matter what life brings, no matter how good I have it, I'll NEVER feel as good as I felt that 1st time shooting up. Because when the smack begins to flow I really don't care anymore' (RudeGrll)

Desire for permanence. In four instances, authors reported that the experience of heroin intoxication is so meaningful that they wish it could be permanent. Of this, TheFrog recalled, 'I remember...thinking to myself that `this is the way I want to feel for the rest of my life!' So high. . . so high'. Another author explained, 'I just wanted to lay there and feel that way forever...I was sure nothing could ever compare to the way I felt that night' (Heroin). Finally, one author cautioned –

'Moral of the story here, heroin is way too good, don't even try it because you can't feel that good all the time and it is depressing because it is exactly how I want to feel all the time' (Clemens)

Heroin intoxication as a ritual. In four instances, authors described a meaningful ritual surrounding their heroin use. One author affectionately referred to 'my little opiate ritual' (Clemens).

New life/world. In three instances, authors reported that heroin intoxication allows them to leave their life or world and enter a new or different one. Of this, Mad Dash explained, 'I literally went to another world'. Similarly, K stated, 'It was like I could leave my life and enter a new life'. For Lane, heroin intoxication is similar to being reborn – 'As if I had just made my first journey outside the womb and was discovering a new world. The same world that I knew, and a brand new world, both at the same time'.

Shared experience creates connection. In two instances, authors reported that sharing their heroin experience with another person creates a new and meaningful connection between them. Of this, one author described –

'Knowing that we both experienced something amazing like that right next to each other, even though I could have cared less about her at the time, made me feel like we shared something very special and had some strange, new connection' (Mike)

Heroin as a guilty free time pleasure. In one instance, an author reported that heroin intoxication is a guilty pleasure that they indulge in during their free time – 'I remember thinking that this was probably the worst thing I could be spending my free time on, but I didnt [sic] care, I loved the feeling. I loved the escape' (K).

Forever changed by the experience. In one instance, an author reported that they were irrevocably changed after using heroin for the first time – 'this experience changed something in me' (beautiful disaster).

Affective Meaning

The affective meaning (AM) sub-dimension encompasses the value or significance that authors attach to the impact heroin intoxication has on their mood, emotions, attitudes, and state of being. The AM sub-dimension contains 62 data bits. The 62 data bits yielded eleven themes (See Table 17). The AM themes can be understood as types of affective meaning authors associate with heroin intoxication. The AM themes include: happiness, love, sense of freedom, peace/calm/tranquility, feeling on top of the world, everything is perfect, identity confirmation, being alive, intimacy, seeing the world/life through a positive lens, and strength to carry on. There are no sub-themes. The eleven AM themes will now be briefly illustrated.

Table 17

Affective Meaning Themes (in Descending Order)

	Theme	# of data bits
1	*Happiness*	16

2	Love	9
3	Peace/calm/tranquility	7
4	Sense of freedom	6
5	Everything is perfect	5
6	Feeling on top of the world	4
7	Identity confirmation	4
8	Being alive	3
9	Intimacy	3
10	Seeing the world/life through a positive lens	3
11	Strength to carry on	1
	Total	**62**

Happiness. In 16 instances, authors reported that heroin intoxication brings them happiness. Of this, minnie stated, '[while high] I become happy'. Another author recalled that they, '[felt] the feeling of true happiness' (Crazydevs). Some authors described a sensation of bliss – 'Everything was complete bliss' (Mack). Similarly, Your Friend described experiencing 'boundless bliss' during heroin intoxication. In relation, burton stated, 'for the first time in months, I was finally HAPPY. I was feeling something other than anger and hatred and depression...I was floating on a cloud of pure bliss!'. A few authors elaborated about the happiness that heroin provides them –

'smack was the one true thing in my life. truer than love, clearer than pain, as gentle as rain. It made me happier than I'd ever been' (SS)

'It was the only thing that made me happy. And I could be all alone forever on that shit and I didn't care. I had that.' (Heroin)

'the reason I'm not clean is because I don't want to be...Maybe because its [sic] really the one thing that brings me pure happiness, so I'm afraid to let it go' (JunkyMax)

Love. In nine instances, authors reported that they are in love with heroin or that they feel loved by heroin. Of feeling in love with heroin, one author stated, 'I was hooked- but not in the addicted sense of the word: I guess it better said that I was in LOVE' (kid). Similarly, Seven explained, 'in my heart I knew I had found my new love. I knew because along with the warmth I felt something I had never before felt with any other drug – LUST'. Additionally, L.C.M. stated, 'Other drugs make me want them in a very straightforward sexual sense, I have something like a crush on them, Heroin makes me fall in love with it'.

Of feeling loved by heroin, lyndsie explained, 'I describe it as a big electric blanket of love. Warm and fuzzy and right with the world'. Similarly, Pharm described it as, 'warm dope love'. A few authors elaborated –

'this is what I live for and that sometimes getting sick has to be worth it because heroin is just so good. I love it more than anything I have ever loved, and it feels like it loves me back, and the pain is like being apart from the one you love, like you've been apart too long and so you hurt inside and all over, and then when you are reunited it is the most amazing relief back into the warm embrace of your love' (Romska)

Finally, one author described feeling like an infant cradled by their mother –

'Now my head felt real heavy. My solution? I layed [sic] on the floor against my bed for hours. It was like being cradled by mom as I was nursing. I felt warm and loved. My jaw dropped and I drooled down my chin like an infant' (Recoveryguru)

Peace/calm/tranquility. In six instances, authors reported experiencing a sensation of peace, calm, or tranquility during heroin intoxication. Of this, TinOCranberries stated, 'I felt

completely amazing...completely carefree, unrestrained, slightly drowsy and completely at peace'. For Observer, 'There was an overwhelming sense of peace and tranquility'. Beyond a general sense of peace, some authors described feeling at peace with themselves. Of this, Pharm explained, 'I feel at peace with myself and everything around me'. In agreement, Angela stated, 'it was the first moment in a long time that I felt at peace with myself'. Of calmness, Katriss recalled, 'Deep calm turned into crazy calm'. Finally, for one author, heroin intoxication offers peace that does not readily exist in their life otherwise – 'I felt at peace with everything. I hadn't felt like that in so long' (beautiful disaster).

Sense of freedom. In seven instances, authors reported feeling a sense of freedom during heroin intoxication. Of this, Lane explained, 'I felt free. That one word is the best I can sum it up'. Another author stated, 'I was in the land of the free' (Oblivious). Of the sense of freedom, burton stated, 'It was as if I had been weighed down by gravity and didn't even realize it until the strings had been cut'.

Everything is perfect. In five instances, authors reported that it feels like everything is perfect during heroin intoxication. Of this, Chucklez stated, 'When I am High. . . Everything is PERFECT'. Voyager also explained, 'Everything in my mind, body and my environment was just, perfect! Yeah, perfect, that's the right word (at least I was feeling like that)'. Similarly, Poppy Girl stated, 'simply put, everything seemed right in the world'. Another author described, 'I felt fantastic, that as long as I felt like this, then everything in the world was right' (Train Wreck).

Feeling on top of the world. In five instances, authors reported feeling on top of the world during heroin intoxication – 'I felt like I was on top of the world, this was the greatest feeling I've ever felt' (Twigburst).

Identity confirmation. In four instances, authors reported that heroin intoxication offers them a sense of belonging. Of this, one author described, 'I love being high. Thinking about living life on the straight edge really sucks. A strange thing I live with is a strange pride in being a heroin user. I get weird pleasure out of thinking of myself as a Junkhead. Typical musician' (MLM). Another author described their intoxicated state as their true self – 'Get High? What am I talking about?. . . I should call it `Getting Normal'' (Chucklez)

Being alive. In three instances, authors reported that heroin intoxication makes them feel alive or gives them a reason to be alive. Of feeling alive, Lane stated, 'It felt like I was literally more alive'. And of a reason to be alive, Jay explained, 'It just feels to [sic] good to let go. Now, months and thousands of dollars later, I still cant [sic] see myself quitting - I love it too much. Every aspect, from the score to the prep to the high, it's my dirty little secret and it keeps me alive. . . gives me a reason to BE.'

Intimacy. In three instances, authors reported that heroin intoxication as an intimate relationship with heroin. In relation, Crazydevs stated, 'The first time I injected heroin, I felt I truly understood the drug, as if we became one'. Another author explained, 'Heroin has something very tender and gentle to it'. Finally, Kitten elaborated –

'The intoxicating rush as we come together, the gentle warmth that enfolds me as we embrace, even a bit of longing as we part. She, (and she must be a woman, for only a woman's embrace is both so intoxicating and dangerous at the same time) holds me, and as she does, I can't help but want to sink deeper into her embrace'

Seeing the world/life through a positive lens. In three instances, authors reported that they see the world or their life more positively during heroin intoxication. Of this, Angela stated, 'When I was high, I began to think much more positively'.

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Strength to carry on. In one instance, an author reported that heroin gives them the strength to carry on – 'heroin gives me the strength to carry on' (Chucklez).

Spiritual Meaning

The spiritual meaning (SM) sub-dimension encompasses the spiritual value or significance that authors attach to heroin intoxication The SM sub-dimension contains 17 data bits. The 17 data bits yielded three themes (See Table 18). The SM themes can be understood as types of spiritual meaning authors associate with heroin intoxication. The SM themes include: beauty, cosmic/Divine experiences, and access to deeper self. There are no sub-themes. The three SM themes will now be briefly illustrated.

Table 18

Spiritual Meaning Themes (in Descending Order)

	Theme	*# of data bits*
1	*Beauty*	7
2	*Cosmic/Divine*	6
3	*Access to deeper self*	4
	Total	**17**

Beauty. In seven instances, authors reported that heroin intoxication brings awe-inspiring beauty to their lives. In relation, sepulfreak explained that heroin 'filled with life, color, and beauty'. One author elaborated – '[I] saw the beauty in everything. I believe that heroin was allowing me to see (per se) the life force of everything around me.... the essence...of everything's life-force is felt' (Lane). For olya, 'I felt fucking fantastic. Dope made me philisophical [sic] and beautiful.' Finally, one author cautioned, 'it was the kind of beautiful that's reserved for dying and seeing god' (Benjamin).

Cosmic/Divine experiences. In six instances, authors reported that heroin intoxication provides a comic or Divine experience. One author remarked, 'heroin experience was almost spiritual' (Poppy Girl). For Psyc0naut, '[it] gave me a good impression of what heaven must be like'. Another author experienced Nirvana – 'From my perspective, I had found Nirvana for an hour' (burton). Two authors described the feeling of heroin penetrating the core of their soul or being –

> 'People say it's like being hit by a truck. No. It's nothing like that. It's like standing on a rock, on the coast. . . and having a tidal wave of warmth, of security, of absolute *apathy* come over you, it surrounds you, it goes into your mouth, it drives down your throat, and deep into your soul' (Silver)

> 'the heroin...engulfed my whole being...It made me fall back onto my bed. I imagined I was falling from the sky and landing on a pile of millions of feathers.' (I.B. Surprised)

Access to deeper self. In four instances, authors reported that heroin intoxication allows them to access deeper parts of themselves. Of this, Pharm stated, 'heroin opens a door to places deeper in yourself'. In addition, 'I simply reach a deeper level within myself' (Pharm). For Blind Squid, heroin 'allow[ed] me to dig to depths of my own sense of expression that I had never before been to'.

MD10 Summary

MD10 contains 126 data bits. Of the 126 total data bits, 8 data bits (6%) were coded as practical meaning (PM), 40 data bits (32%) were coded as experiential meaning (EM), 61 data bits (48%) were coded as affective meaning (AF), and 17 data bits (14%) were coded as spiritual meaning (SM). The final structure of MD10 indicates that for members of the research sample, heroin intoxication is an extremely meaningful activity. For members of the research sample,

heroin intoxication has many layered meanings, which converge to create a very powerful experience that is at once Universal, and completely personal.

Members of the research sample described heroin intoxication to be so meaningful to them, that in its absence, life feels incomplete. In this sense, it can be understood that the absence of heroin leaves an incredible void that members of the research sample perceive as impossible to fill. When considering the entire final coding frame (MDs 1-10), it is evident that for members of the research sample, heroin intoxication is a beacon of light in an otherwise dreary world. Metaphorically speaking, if everyday life were a giant dry desert, heroin intoxication would be a lush, green oasis hidden in its expanse – much like flow experiences. Csikszentmihalyi (1997) explains that daily life tends to be mundane and boring, but '[f]low experiences provide...flashes of intense living against this dull background" (p. 31). Furthermore, with 48% of the total data bits coded as AM, the final structure of MD10 indicates that members of the research sample find deep emotional meaning in heroin intoxication. Csikszentmihalyi (1997) explains that emotions largely define experience, as activities elicit emotions and emotions provide structure to one's consciousness.

The final structure of MD10 indicates that for members of the research sample, the experience of heroin intoxication is saturated with meaning practical, experiential, affective, and spiritual meaning of heroin intoxication. In summary, the final structure of MD10 indicates that for members of the research sample, there is a similarity between heroin intoxication and flow in the aspect of meaning.

Summary of the Findings

The final coding frame contains 586 data bits. The final structure of the coding frame with data bit distribution across the main dimensions and sub-dimensions can be seen in Figure 15.
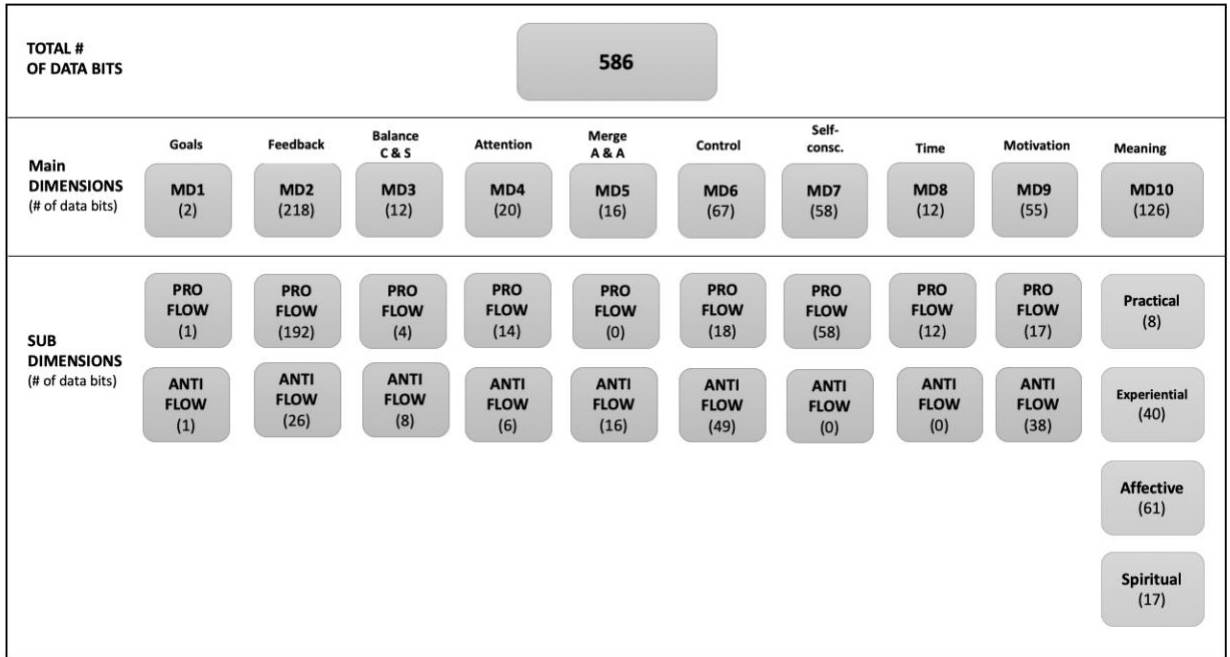
Figure 15. Final structure of the coding frame with data bit distribution across the main dimensions and sub-dimensions

Of the 586 total data bits, MD1 contains two data bits (< 1%), MD2 contains 218 data bits (37%), MD3 contains 12 data bits (2%), MD4 contains 20 data bits (3%), MD5 contains 16 data bits (3%), MD6 contains 67 data bits (12%), MD7 contains 58 data bits (10%), MD8 contains 12 data bits (2%), MD9 contains 55 data bits (9%), and MD10 contains 126 data bits (22%) (See Table 19). The structure and contents of the entire final coding frame indicate that for members of the research sample, mimetic flow experiences are present during heroin intoxication. More specifically, the structure and contents of the entire final coding frame indicate that for members of the research sample, heroin intoxication shares similarities with flow in all but two elements, with one of the two elements posing a strong inverse parallel (See Table 19). The similarities and differences will now be briefly summarized.

Table 19

Prevalence of Similarity Between of Heroin Intoxication and Flow

MD	Element of flow	Similar to flow	Pro-flow data bits	Anti-flow data bits
1	Clear goals	Yes	1 (50%)	1 (50%)
2	Unambiguous feedback	Yes	192 (88%)	26 (12%)
3	Balance of challenge and skill	No	4 (33%)	8 (67%)
4	Focused attention	Yes	14 (70%)	6 (30%)
5	Merging of actions and awareness	Possibly	0 (0%)	16 (100%)
6	Control	Yes	18 (27%)	49 (73%)
7	Loss of self-consciousness	Yes	58 (100%)	0 (0%)
8	Distortion of time	Yes	12 (100%)	0 (0%)
9	Intrinsic motivation	Yes	17 (31%)	38 (69%)
10	Meaningful	Yes	n/a	n/a

Similarities

For members of the research sample, flow is similar to heroin intoxication in the following elements: clear goals, unambiguous feedback, focused attention, control, loss of self-consciousness, distortion of time, intrinsic motivation, and meaning (See Table 19).

Clear goals. The final contents of MD1 indicate that in at least one instance, an author identifies a clear pre-determined goal that they desire to reach within heroin intoxication – to experience nodding. Contents of the entire final coding frame, especially MD5 and MD9, support the possibility that nodding may be an unexpressed goal for other members of the research sample.

Unambiguous feedback. The final contents of MD2 indicate that heroin intoxication is a feedback-rich experience for members of the research sample. The majority of feedback experienced by members of the research sample during heroin intoxication is unambiguous internal feedback.

Focused attention. The final contents of MD4 indicate that members of the research sample experience the benefits of focused attention during heroin intoxication. Authors report experiencing the cessation of superfluous thoughts and feelings of serenity during heroin intoxication.

Control. The final contents of MD6 indicate that members of the research sample generally perceive that they are safe during heroin intoxication and do not worry about losing control, albeit they may not actually be safe or in control.

Loss of self-consciousness. The final contents of MD7 indicate that members of the research sample experience loss of self-consciousness during heroin intoxication. The data yields no incongruent instances, with 100% of the MD7 data bits coded as pro-flow.

Distortion of time. The final contents of MD8 indicate that members of the research sample experience distortion of time during heroin intoxication. The data yields no incongruent instances, with 100% of the MD8 data bits coded as pro-flow.

Intrinsic motivation. The final contents of MD9 indicate that intrinsic motivations for heroin intoxication are present for members of the research sample. Additionally, the contents of the entire final coding frame indicate that members of the research sample experience intrinsic rewards during heroin intoxication: sense of control, loss of self-consciousness, distortion of time, and possibly, an inverse parallel of merged action and awareness.

Meaning. The final contents of MD10 indicate that members of the research sample view heroin intoxication as a highly meaningful activity that enriches their lives.

Merging of action and awareness. While MD5 contains no pro-flow data bits, the contents of the AF sub-dimension indicate that for members of the research sample, the experience of nodding during heroin intoxication may be similar to the merging of action and awareness, though completely inverse or opposite (merging of inaction and altered awareness).

Differences

For members of the research sample, flow is dissimilar to heroin intoxication in the following elements: balance of challenge and skill and merging of action and awareness (See Table 19).

Balance of challenge and skill. The final contents of MD3 indicate that for members of the research sample, the predominant state of being during heroin intoxication is relaxation. Therefore, for members of the research sample, heroin intoxication does not provide the necessary balance of challenge and skill to foster flow.

Merging of action and awareness. The final contents of MD5 indicate that for members of the research sample, action and awareness are not merged during heroin intoxication. The data yields no congruent instances, with 100% of the MD5 data bits coded as anti-flow. However, as previously noted, there may be shades of similarity within the difference.

CHAPTER V

DISCUSSION

Overview

The purpose of the current study was to explore the experience of heroin intoxication

through the leisure lens of flow theory in order to gain deeper understanding of the ways in which

heroin intoxication is similar to flow. To achieve this purpose, the current study addressed the

following research question: in what ways, if any, is heroin intoxication similar to flow? This

research question is of vital importance in the field of leisure studies, as there is an urgent need

for discipline-specific literature to inform new evidence-based recreational therapy practices for

the treatment of patients recovering from heroin addiction (Kunstler, 2015). Flow theory presents

a unique discipline-specific lens through which to explore the experience of heroin intoxication as

it relates to patients' leisure needs in recovery.

Significance of the Study

The meaning of heroin use has been explored by scholars across many disciplines, yet

recreational therapy is not among this group. A rising sense of national urgency regarding the

development of non-pharmaceutical treatment interventions for individuals addicted to heroin

(HHS, 2017) underscores the necessity of recreational therapy scholarship on the issue

(Kunstler, 2015). The current study, to this researcher's best knowledge, was the first ever study to explore the meaning of heroin intoxication exclusively through a leisure lens and the first ever study to explore the meaning of heroin intoxication through the lens of flow theory.

As a cornerstone of recreational therapy practice, flow theory presents a discipline-specific lens through which to explore the meaning of heroin intoxication. While chemically altered states are incongruent with fostering flow (Csikszentmihalyi, 1990; Csikszentmihalyi et al., 2017), the possibility that drug use can mimic the effects of flow is often mentioned in flow literature, though little research on the phenomenon exists. In fact, only a single study (Delle Fave & Massimini, 2003) has been published on the phenomenon of drug-induced mimetic flow. In their mixed methods study, Delle Fave and Massimini (2003) found that a significant percentage of individuals in recovery from substance addiction associate their past drug use with optimal experience (flow). Though the Delle Fave and Massimini (2003) study provides preliminary evidence to support the prevalence of mimetic flow during drug use, it does not include differentiation between drugs of abuse, but rather focuses on substance use in general. Therefore, the current study, to this researcher's best knowledge, was the first ever study to explore the manifestation of mimetic flow during heroin intoxication and the first ever qualitative study to explore the phenomenon of drug-induced mimetic flow.

The findings of the current study provide detailed preliminary understanding of the similarities and differences between heroin intoxication and flow. For members of the research sample, heroin intoxication is strikingly flow-like in many meaningful ways. This finding supports the notion that naturally occurring flow experiences may hold the powerful potential to enable individuals recovering from heroin addiction to safely and meaningfully fill the void that is created by the loss of heroin when they enter sobriety (Delle Fave & Massimini, 2003). For recreational therapists, the findings of the current study represent a new pathway to understanding, connection, and service delivery to patients recovering from heroin addiction.

Restatement of the Results

The findings of the current study indicate that for members of the research sample, mimetic flow experiences are present during heroin intoxication. The findings of the current study also indicate that heroin intoxication is a meaningful experience, which members of the research sample view as enriching to their lives. Finally, the findings of the current study indicate that for members of the research sample, heroin intoxication shares similarities with flow in all but two elements, with one of the two elements posing a strong inverse parallel.

Similarities. For members of the research sample, heroin intoxication is similar to flow in the following elements: clear goals, unambiguous feedback, focused attention, sense of control, loss of self-consciousness, distortion of time, intrinsic motivation, and meaning. Members of the research sample express that they experience unambiguous internal and external feedback during heroin intoxication, such as bodily sensations and environmental cues that help them navigate their experience. Members of the research sample express that they experience the benefits of focused attention during heroin intoxication, such as cessation of superfluous thoughts and a sense of serenity. Members of the research sample express that they perceive that they are safe during heroin intoxication and that they are unconcerned about losing control. Members of the research sample express that they experience a total loss of self-consciousness during heroin intoxication, during which their personhood and humanity temporarily cease to exist. Members of the research sample express that they experience time distortion, with moments seeming to last hours, hours seeming to last moments, and the construct of time becoming totally irrelevant. Members of the research sample express intrinsic motivations for heroin use, such as curiosity and a desire to feel or experience heroin. Additionally, the structure of the final coding frame indicates that members of the research sample experience intrinsic rewards during heroin intoxication. Finally, members of the research sample express that heroin intoxication has practical, experiential, affective, and spiritual meaning that enriches their lives.

Differences. For members of the research sample, heroin intoxication is dissimilar to flow in the following elements: balance of challenge and skill and merging of action and awareness. For members of the research sample, the predominant state of being during heroin intoxication is relaxation, which indicates that heroin intoxication is a low-challenge activity and therefore incongruent with fostering flow. While heroin intoxication is shown to be dissimilar to flow in the element of merged action and awareness, analysis indicates that while nodding, members of the research sample may be experiencing a powerful inverse version of merged action and awareness that manifests in a similar state of instinctual functioning.

Comparison to the Literature

Outside of the current study, only a single study has been published on mimetic flow experiences during drug use. Delle Fave and Massimini (2003) conducted a mixed methods study in which they administered the Flow Questionnaire to a sample of 61 individuals in recovery from substance addiction. The Flow Questionnaire is used to determine whether or not an individual has experienced flow before, and if they have, to identify the activities in which they have experienced flow (Moneta, 2012). Delle Fave and Massimini (2003) added Likert-style questions to the Flow Questionnaire, which required participants to rate the quality of their experiences in cognitive, affective, and motivation-related variables, which represent various elements of flow. Additionally, Delle Fave and Massimini (2003) included open ended questions to investigate the meaning of the various activities, past and present, that participants experienced flow during.

Delle Fave and Massimini (2003) found that mimetic flow is present during drug use for some individuals, as 13 members of their research sample identified drug use as a source of flow. Furthermore, Delle Fave and Massimini (2003) found that for individuals in recovery from substance addiction, drug use is characterized by a low level of perceived challenge, a lack of

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intrinsic motivation, high levels of anxiety, an absence of goals, and an absence of concern about personal control. While Delle Fave and Massimini (2003) included open ended questions to gather additional insights, no qualitative data related to the meaning of drug use was provided in the presentation of their findings. However, Delle Fave and Massimini (2003) found evidence in their qualitative data that suggests motivation to change (form a new non-addict identity) is nourished by the prevalence of optimal experience (flow) during recovery. Despite Delle Fave and Massimini's (2003) promising findings, no follow-up studies have been published on the topic of mimetic flow experiences during drug use or the related clinical implications in the near two decades since their study was published.

The current study builds upon the vital work started by Delle Fave and Massimini (2003). While Delle Fave and Massimini (2003) focused on the prevalence of mimetic flow during drug use and the meaning of optimal experiences (flow) in recovery, the current study focuses on the manifestation of mimetic flow during heroin intoxication, specifically. Delle Fave and Massimini (2003) utilized a sample of individuals in recovery from substance addiction, while the current study utilizes a sample of individuals that have experienced heroin intoxication. In this sense, it can be understood that the focus of the current study differs from the Delle Fave and Massimini (2003) study in that the current study does not directly explore addiction and recovery, but rather the experience of heroin intoxication as an activity. Due to the subtle difference in population and purpose, the specific results of the Delle Fave and Massimini (2003) study and the current study cannot be explored through direct comparison, but the results can be held in close conversation.

While the current study addresses each individual element of flow, Delle Fave and Massimini (2003) do not discuss any findings related to merging of action and awareness, loss of self-consciousness, or distortion of time. Delle Fave and Massimini (2003) include feedback as a variable in their Likert-style questionnaire, though they do not offer context or delineation of its

meaning. The findings of the current study and the Delle Fave and Massimini (2003) study intersect most notably in the elements of balance of challenge and skill and intrinsic motivation.

Balance of Challenge and Skill. The findings of the current study support Delle Fave and Massimini's (2003) finding that drug intoxication is characterized by low challenge. The current study reveals that for members of the research sample, heroin intoxication is too relaxing to meet the burden of challenge necessary to foster flow. Delle Fave and Massimini (2003) found that drug intoxication is too passive of an experience to provide any kind of challenge in which an individual would need to use personal skill. While the findings of the current study support the notion that heroin intoxication is a passive activity, the data indicates that there is a certain degree of personal skill necessary to achieve and maintain a state of nodding, which is described by members of the research sample as the climax of the heroin experience.

Intrinsic Motivation. Delle Fave and Massimini (2003) conclude that substance addiction is a condition that is incongruent with freedom of choice, as the drug is needed rather than simply desired, which subsequently prohibits intrinsic motivation for drug use. Of this, Delle Fave and Massimini (2003) explain that flow activities are, "...intentionally sought after for their own sake, and cultivated in time independently of external constraints or rewards" (p. 7). In adherence to an alternate epistemological interpretation of intrinsic motivation based on Csikszentmihalyi's work, the findings of the current study reveal both intrinsic and extrinsic motivations and rewards for heroin use. Csikszentmihalyi and Nakamura (1989/2014) explain that motivation is not static, and an individual can shift between extrinsic and intrinsic motivation at any time during a given activity. In this sense, it can be understood that an individual need not be intrinsically motivated at the start of an activity to experience intrinsic motivation at some point during the activity, even if it is only for a few moments (Csikszentmihalyi et al., 1983/2014; Csikszentmihalyi & Nakamura 1989/2014).

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The findings of the current study underscore the importance of acknowledging the prevalence of intrinsic motivations and rewards during heroin intoxication, as ignoring the intrinsic motivations and rewards erases vital meaning associated with the experience of heroin intoxication (Delle Fave & Massimini, 2003). The findings of the current study indicate that members of the research sample experience several process outcomes of flow (focused attention, a sense of control, loss of self-consciousness, and the distortion of time), which Csikszentmihalyi et al. (1983/2014) identify as intrinsic rewards. Therefore, if a drug experience provides any of the process outcomes of flow, it must be understood that the drug experience provides intrinsic reward. Subsequently, then, it must also be understood that cessation of heroin use results in the loss of a powerful source of intrinsic reward. It is only through understanding and acknowledging this unique loss that recreational therapists can begin the important work of educating and empowering their patients to discover new purpose and meaning in their life without heroin (Delle Fave & Massimini, 2003).

Limitations

The use of self-reported data is a limitation of the current study. Pre-exiting narrative-style heroin reports collected from Erowid.org were utilized as the data for the current study. While Erowid staff review each experience report to assess it for credibility before publishing it in their database, it is not possible to guarantee the authenticity of the reports (Erowid, 2018). In relation to the rigor of their screening process, Erowid reports that they only publish approximately fifty percent of the experience reports that they receive (Erowid, 2018). In this sense, it can be understood that despite precautionary measures, it is possible that the data utilized in the current study may contain exaggerations, untruths, recollections that have been influenced by the passing of time between the heroin experience and the writing of the report, and/or instances of selective memory (Patton, 2015).

Another limitation of the current study is the possibility of a false negative. The use of pre-existing narrative data restricted analysis to the contents of the pre-existing heroin reports. Therefore, it is possible that other similarities and differences between heroin intoxication and flow exist, yet are not expressed in the contents of the research sample. In this sense, it can be understood that the use of pre-existing data, as opposed to conducting interviews, prohibited the researcher from asking members of the research sample to provide more details and context related to the individual elements of flow.

Strengths

The current study is strengthened by several important factors. Foremost, the current study has a large sample size of 101 heroin experience reports. A large sample size increases the trustworthiness of a qualitative content analysis (QCA), as it provides a higher level of meaning saturation (Elo et al., 2014; Schreier, 2012). In this sense, it can be understood that with a large sample size, a few inaccuracies within the data would be absorbed by the remainder of the data and therefore not mislead the researcher's analysis (Elo et al., 2014).

The salience of the research sample is another strength of the current study. Salience refers to the extent to which the sample reflects the richest possible descriptions of the phenomenon being studied (Elo et al., 2014). In other words, first-hand accounts given by those who have lived an experience are more salient than second-hand accounts given by those that have observed or simply know about the experience. A trustworthy QCA utilizes a sample of individuals that have the best knowledge of the research topic (Elo et al., 2014). As first-hand accounts of heroin intoxication given by those that have lived it, Erowid experience reports are a highly salient data source.

The current study is also strengthened by the trustworthiness of the coding frame. The coding frame is the heart of QCA (Schreier, 2012). To achieve trustworthiness, operational

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definitions, detailed coding rules, and anchor samples were developed for each main dimension prior to data collection and utilized consistently throughout the coding process (Assarroudi et al., 2018; Hsieh & Shannon, 2005; Schreier, 2012). The trustworthiness of the coding frame is demonstrated by a high percentage of agreement at both the main dimension and sub-dimension levels (Schreier, 2012). Coding at the main dimension level was conducted on two separate occasions with 99.8% intra-rater agreement across main dimensions. Coding at the sub-dimension level was conducted on two separate occasions with 100% intra-rater agreement across sub-dimensions. High intra-rater agreement, or percentage of agreement, is an indication of high internal reliability (Schreier, 2012). In this sense, it can be understood that the current study demonstrates a high level of internal reliability, as the coding results remain consistent across points in time (Schreier, 2012).

The high level of abstraction achieved across the final coding frame is another important strength of the current study (Assarroudi et al., 2018; Elo et al., 2014). Level of abstraction can be understood as the depth of analysis, where a high level of abstraction indicates an in-depth analysis and a low level of abstraction indicates a shallow analysis (Assarroudi et al., 2018; Elo et al., 2014). A high level of abstraction is achieved when each main dimension of the final coding frame has multiple sub-dimensions, which, in turn, have some combination of sub-groups or themes (Assarroudi et al., 2018; Elo et al., 2014). A high level of abstraction was achieved in every main dimension (MD) of the final coding frame, and a very high level of abstraction was achieved in MD2, MD4, MD5, MD6, MD7, and MD9 in which analysis reached sub-theme or sub-theme-group level. Therefore, it can be understood that the findings of the current study represent an in-depth analysis of heroin intoxication through the lens of flow theory.

A final strength of the current study is the inclusion of confirming and disconfirming cases. While the purpose of the current study is to gain understanding of the ways in which heroin intoxication is similar to flow, intentional exploration of both pro and anti-flow cases reduces the

likelihood of researcher bias influencing the analysis (Schreier, 2012). Inclusion of both pro and anti-flow cases also supports a well-rounded exploration of heroin intoxication through the lens of flow theory (Patton, 2015; Schreier, 2012).

Future Directions

A qualitative design was utilized in the current study to support an exploratory purpose, as the phenomenon of mimetic flow during heroin intoxication was previously unstudied. The findings of the current study indicate that heroin intoxication is flow-like in many meaningful ways for members of the research sample. While this finding is transferable to other contexts (Patton, 2015; Schreier, 2012), quantitative analysis is an important next step to generate generalizable findings. Another important future direction includes the exploration of other sources of intoxication, such as alcohol, cocaine, and methamphetamine, through the lens of flow theory, to deepen discipline-specific understanding of the meaning of these drug experiences, and others, as well.

The findings of the current study indicate that flow theory may be especially relevant to understanding and treating heroin addiction. As such, an important future direction includes developing evidence-based flow-centered recreational therapy practices for individuals recovering from heroin addiction. Finally, a paramount future direction includes the development of an instrument to assess the prevalence of mimetic flow during drug intoxication and the degree to which each element of flow is present in a patient's drug experiences. The development of such an instrument will allow recreational therapists to identify the unique leisure needs of each patient through the lens of flow theory, and subsequently develop individualized treatment plans that will educate and empower patients to discover new purpose and meaning in their life without heroin or other drugs.

Practical Implications

While the findings of the current study offer many exciting future directions, recreational therapists can utilize the immediate knowledge generated by the current study to nourish their understanding of the leisure needs of individuals recovering from heroin addiction. The findings of the current study indicate that for members of the research sample, mimetic flow experiences are present during heroin intoxication. Furthermore, the findings of the current study indicate that for members of the research sample, heroin intoxication is flow-like in many meaningful ways and yields intrinsic rewards, such as focused attention, sense of control, loss of self-consciousness, and the distortion of time. In this sense, it can be understood that when heroin use stops, the individual loses a primary source of flow, albeit mimetic flow, and intrinsic reward, which leaves a massive void in its wake. Where mimetic flow is lost, recreational therapists can offer hope that natural flow can be gained.

Recreational therapists are uniquely qualified to help patients fill the void created by the loss of heroin through facilitating leisure education interventions that focus on flow theory (Kunstler, 2015). Leisure education is a fundamental recreational therapy modality across all populations, which provides patients with exposure to vital leisure language necessary to fully conceptualize their sense of self and the ways in which their leisure pursuits enhance or detract from their quality of life (Austin et al., 2015; Dattilo, 2016). The findings of the current study support the notion that flow theory is highly relevant to recovery from heroin addiction, and furthermore, that flow theory-focused interventions may be a significant future trend in the treatment of individuals recovering from heroin addiction.

Conclusions

Heroin addiction is a mental health condition characterized by high mortality and relapse rates (APA, 2013; NIDA, 2018b). Despite a rising sense of national urgency regarding the

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development of non-pharmaceutical treatment interventions for individuals addicted to heroin

(HHS, 2017), there is little recreational therapy scholarship available to inform new evidence-

based practices for treating this population (Kunstler, 2015). The findings of the current study

shed light on the unique leisure needs of individuals in recovery from heroin addiction by

elucidating the flow-like qualities of heroin intoxication. For members of the research sample,

heroin intoxication is a vibrant and deeply meaningful experience that mimics many of the

elements of flow and provides intrinsic rewards. The findings of the current study and existing

literature (Delle Fave & Massimini, 2003; Schüler, 2012) indicate that due to the similarities

between heroin intoxication and flow, flow theory and naturally occurring flow experiences have

the potential to be meaningfully and intentionally utilized by recreational therapists in the

treatment of patients recovering from heroin addiction.

REFERENCES

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (DSM-5®). American Psychiatric Pub.

American Therapeutic Recreation Association (ATRA). (2015). *Who we are*. Retrieved from https://www.atra-online.com/page/WhoWeAre

American Therapeutic Recreation Association (ATRA). (2018). *About recreational therapy*. Retrieved from https://www.atra-online.com/page/AboutRecTherapy

Assarroudi, A., Nabavi, F. H., Armat, M. R., Ebadi, A., & Vaismoradi, M. (2018). Directed qualitative content analysis: the description and elaboration of its underpinning methods and data analysis process. *Journal of Research in Nursing*, 23(1), 42-55. doi: 10.1177/1744987117741667

Austin, D. R., Crawford, M. E., McCormick, B. P., & Van Puymbroeck, M. (Eds.). (2015). *Recreational therapy: An introduction* (4th ed.) Urbana, IL: Sagamore.

Bailey, L. (2005). Control and desire: The issue of identity in popular discourses of addiction. *Addiction Research & Theory,13*(6), 535-543. doi: 10.1080/16066350500338195

Biernacki, P. (1986). *Pathways from Heroin Addiction Recovery without Treatment*. Philadelphia, PA: Temple University Press.

Cook, R. (1985). The alternatives approach revisited: A bio psychological model and guidelines for application. *The International Journal of the Addictions*, 20, 1399-1419.

Crabbe, T. (2006). Bingers: The performativity and consumption of "deviant" leisure. *Leisure/Loisir*, 30(1), 149-169. doi:10.1080/14927713.2006.9651346

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety* (1st ed., The Jossey-Bass behavioral science series). San Francisco: Jossey-Bass.

Csikszentmihalyi, M. (1975/2014). Play and intrinsic rewards. In M. Csikszentmihalyi (Ed.) *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi.* Springer.

Csikszentmihalyi, M. (1990). *Flow*. New York, NY: Harper Perennial.

Csikszentmihalyi, M. (1993). *The evolving self: A psychology for the third millennium*. Harper Perennial.

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement in everyday life*. New York, NY: Basic Books.

Csikszentmihalyi, M., Graef, R., & McManama Gianno, S. (1983/2014). Measuring intrinsic motivation in everyday life. In M. Csikszentmihalyi (Ed.) *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi.* Springer.

Csikszentmihalyi, M. & Nakamura, J. (1989/2014). The dynamics of intrinsic motivation: A study of adolescents. In M. Csikszentmihalyi (Ed.) *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi.* Springer.

Csikszentmihalyi, M. & Wong, M. (1991/2014). The situational and personal correlates of
    happiness: A cross-national comparison. In M. Csikszentmihalyi (Ed.) *Flow and the*
    Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi.
    Springer.

Csikszentmihalyi, M., Abuhamdeh, S., & Nakamura, J. (2005/2014). Flow. In M.
    Csikszentmihalyi (Ed.) *Flow and the Foundations of Positive Psychology: The Collected*
    Works of Mihaly Csikszentmihalyi. Springer.

Csikszentmihalyi, M., Latter, P., & Weinkauff Duranso, C. (2017). *Running flow*. Champaign, IL:
    Human Kinetics.

Dattilo, J. (2016). A balanced and systematic leisure education service delivery model:
    connections to Eastern and Western perspectives. *World Leisure Journal*, 58(3), 179-192,
    doi: 10.1080/16078055.2016.1162842

Delle Fave, A., & Massimini, F. (2003). Drug addiction: The paradox of mimetic optimal
    experience. In J. Henry (Ed.), *European positive psychology proceedings* (pp. 31–38).
    Leicester: British Psychological Society.

Delle Fave, A., & Massimini, F. (2005). The Investigation of Optimal Experience and Apathy:
    Developmental and Psychosocial Implications. *European Psychologist, 10*(4), 264-274.
    doi: 10.1027/1016-9040.10.4.264

Delle Fave, A., Massimini, F., & Bassi, M. (2011). *Psychological selection and optimal*
    experience across cultures: Social empowerment through personal growth. Retrieved
    from https://link.springer.com/content/pdf/10.1007%2F978-90-481-9876-4.pdf

D'Silva, M., Harrington, N., Palmgreen, P., Donohew, L., & Lorch, E. (2001). Drug use

prevention for the high sensation seeker: The role of alternative activities. *Substance Use*

& Misuse, 36(3), 373-385. doi: 10.1081/JA-100102631

Elo, S., & K Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced*

Nursing, 62(1), 107-115. doi: 10.1111/j.1365-2648.2007.04569.x

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative

content analysis: A focus on trustworthiness. *SAGE Open*, 1-10.

doi:10.1177/2158244014522633

Ellingson, L. L. (2017). *Embodiment in qualitative research*. New York: Routledge.

Erowid (n.d.). *Our mission*. Retrieved from http://www.erowidcenter.org/

Erowid (2018). *About Erowid*. Retrieved from https://www.erowid.org/general/about/about.shtml

Engeser, S., & Schiepe-Tiska, A. (2012) Historical lines and an overview of current research on

flow. In S. Engeser (Ed.), *Advances in Flow Research*. New York, NY: Springer.

Epstein, J. S., & Sardiello, R. (1990). The Wharf Rats: A preliminary examination of Alcoholics

Anonymous and the Grateful Dead Head phenomena. *Deviant Behavior*, 11, 245-257.

Faulkner, R. W. (1991). *Therapeutic recreation protocols for treatment of substance addictions*.

State College, PA: Venture Publishing.

Foddy, B., & Savulescu, J. (2010). Relating Addiction to Disease, Disability, Autonomy, and the

Good Life. *Philosophy, Psychiatry, & Psychology, 17*(1), 35-42.

Harari, Y. N. (2008). Combat flow: Military, political, and ethical dimensions of subjective well-

being in war. *Review of General Psychology*, 12(3), 253-264.

doi:10.1037/10892680.12.3.253

Harmon, J. (2018). Leisure participation, substance abuse disorders, and recovery. *Annals of Leisure Research, 21*(4), 507-521. doi:10.1080/11745398.2017.1326157

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 12777-1288. doi: 10.1177/1049732305276687

Henderson, K. A., & Gardner, J. M. (1996). Claiming control: The recovering alcoholic woman and leisure. *Leisure Sciences*, 18, 241-258.

Hood, C. (2003). Women in Recovery from Alcoholism: The Place of Leisure. *Leisure Sciences, 25*(1), 51-79. doi: 10.1080/01490400306558

Kleiber, D. A. (2013). Redeeming leisure later in life. In T. Freire (Ed.) *Positive Leisure Science: From Subjective Experience to Social Contexts*. New York, NY: Springer.

Kosel, M., Noss, R. S., Hämmig, R., Wielepp, P., Bundeli, P., Heidbreder, R. , . . . Schlaepfer, T. E. (2008). Cerebral blood flow effects of acute intravenous heroin administration. *European Neuropsychopharmacology*, 18, 278–285. doi:10.1016/j.euroneuro.2007.11.007s

Kunstler, R. (2015). Substance use disorders. In Austin, D. R., Crawford, M. E., McCormick, B. P., & Van Puymbroeck, M. (Eds.), *Recreational therapy: An introduction* (4th ed.) (pp. 87-121). Urbana, IL: Sagamore.

Landhäußer, A., & Keller, J. (2012). Flow and its affective, cognitive, and performance-related consequences. In S. Engeser (Ed.), *Advances in Flow Research*. New York, NY: Springer.

Levounis, P., & Ascher, M. (2013). Familiarizing yourself with Alcoholics Anonymous dictums. *Current Psychiatry, 12*(9), 1-3.

McCormick, B., & Dattilo, J. (1992). The experience of free-time and social interaction among

    AA members: Implications for leisure education. *Annual in Therapeutic Recreation*, 3,

    33-43.

McCormick, B., & Dattilo, J. (1995). "Sobriety's kind of like freedom": Integrating ideals of

    leisure into the ideology of Alcoholics Anonymous. *Therapeutic Recreation Journal*, 29,

    33-34.

McIntosh, J., & McKagney, N. (2000). Addicts' narratives of recovery from drug use:

    Constructing a non-addict identity. *Social Science and Medicine*, 50, 1501-1510.

    Retrieved from https://doi.org/10.1016/S0277-9536(99)00409-8

McIntosh, J., & McKagney, N. (2001). Identity and recovery from dependent drug use: The

    addicts' perspective. *Drugs: Education, Prevention, and Policy*, 8(1), 47-59.

    doi:1 0.1080/09687630124064

McLean, D. D., & Hurd, A. R. (2012). *Recreation and leisure in modern society*. Sudbury, MA:

    Jones & Bartlett Learning.

Meriam-Webster (online dictionary) (2018). *Reference entry: recreate*. Retrieved from:

    https://www.merriam-webster.com/dictionary/recreate

Miller, P. G., Strang, J., & Miller, M. P. (Eds.) (2010). *Addiction research methods*. Wiley-

    Blackwell.

Moneta, G. B. (2012). On the measurement and conceptualization of flow. In S. Engeser (Ed.),

    Advances in flow research (pp. 23-50). doi: 10.1007/978-1-4614-2359-1_2

Nakamura, J., & Csikszentmihalyi, M. (2002/2014). The concept of flow. In M.

    Csikszentmihalyi (Ed.) *Flow and the Foundations of Positive Psychology: The Collected*

    Works of Mihaly Csikszentmihalyi. Springer.

Narcotics Anonymous. (1986). *NA White Booklet*. Retrieved from

    https://www.na.org/admin/include/spaw2/uploads/pdf/litfiles/us_english/Booklet/NA%20

    White%20Booklet.pdf

National Council for Therapeutic Recreation Certification (NCTRC) (2017). *2017 CTRS job*

    analysis report. Retrieved from https://nctrc.org/wp-

    content/uploads/2015/02/JobAnalysisReport.pdf

National Institute on Drug Abuse (NIDA) (2018a). Drug misuse and addiction. Retrieved from

    https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-

    misuse-addiction#footnote

National Institute on Drug Abuse (NIDA) (2018b). *What is heroin?* Retrieved from

    https://www.drugabuse.gov/publications/drugfacts/heroin

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and*

practice. Thousand Oaks, CA: SAGE.

Partington, S., Partington, E., & Olivier, S. (2009). The dark side of flow: A qualitative study of

    dependence in big wave surfing. *The Sport Psychologist, 23*(2), 170-185.

Rojek, C. (1999). Abnormal leisure: Invasive, mephitic and wild forms. *Loisir Et Société / Society*

    and Leisure, 22(1), 21-37. doi: 10.1080/07053436.1999.10715574

Saldaña, J. (2016). *The coding manual for qualitative researchers*. Los Angeles, CA: Sage.

Schüler, J. (2012). The dark side of the moon. In S. Engeser (Ed.), *Advances in Flow Research*. New York, NY: Springer.

Schreier, M. (2012). *Qualitative content analysis in practice*. Los Angeles, CA: SAGE.

Stavropoulos, V., Griffiths, M., Burleigh, T., Kuss, D., Doh, Y., & Gomez, R. (2018). Flow on the Internet: A longitudinal study of Internet addiction symptoms during adolescence. *Behaviour & Information Technology*, 37(2), 159-172. doi:10.1080/0144929X.2018.1424937

Stebbins, R., Rojek, C., & Sullivan, A. (2006). Editorial: Deviant leisure. *Leisure/Loisir, 30*(1), 3-5. doi: 10.1080/14927713.2006.9651338

Stevens, P., & Smith, R. L. (2017). *Substance Use Counseling: Theory and Practice*. Pearson.

Topalli, V. (2006). The seductive nature of autotelic crime: How neutralization theory serves as a boundary condition for understanding hardcore street offending. *Sociological Inquiry,76*(4), 475-501. doi: 10.1111/j.1475-682X.2006.00167.x

Tuchfeld, B., Lipton, W., & Lile, E. (1983). Social involvement and the resolution of alcoholism. *Journal of Drug Issues, 13*(3), 323-332. doi: 10.1177/002204268301300303

Urschel, H. C. (2009). *Healing the addicted brain: The revolutionary, science-based alcoholism and addiction recovery program*. Naperville, IL: Sourcebooks.

U.S. Department of Health & Human Services (HHS). (2017, October 26). *HHS acting secretary declares public health emergency to address national opioid crisis* [Press release]. Retrieved from https://www.hhs.gov/about/news/2017/10/26/hhs-acting-secretary-declares-public-health-emergency-address-national-opioid-crisis.html

U.S. Department of Health & Human Services (HHS) (2018). *The opioid epidemic in numbers*. Retrieved from https://www.hhs.gov/opioids/

Van Zyl, J.I. (2007). *The meaning of heroin addiction: A phenomenological study* (Doctoral dissertation). Retrieved from Proquest Dissertations Publishing. (9033380)

Williams, D. (2009). Deviant leisure: Rethinking "the good, the bad, and the ugly". *Leisure Sciences, 31*(2), 207-213. doi: 10.1080/01490400802686110

Williams, D. J. (2017). Mephitic Projects: A forensic leisure science analysis of the BTK serial murders. *Journal of Forensic Psychiatry & Psychology,* 28(1), 24–37. doi:10.1080/14789949.2016.1247187

Williams, D., & Walker, G. (2006). Leisure, deviant leisure, and crime: "Caution: Objects may be closer than they appear". *Leisure/Loisir, 30*(1), 193-218. doi:10.1080/14927713.2006.9651348

Williams, D., & Vincent, J. (2018). Application of the serious leisure perspective to intrinsically motivated serial homicide. *Deviant Behavior,* 1-11. doi:10.1080/01639625.2018.1461737

Witbrodt, Kaskutas, & Grella. (2015). How do recovery definitions distinguish recovering individuals? Five typologies. *Drug and Alcohol Dependence*, 148(6), 109-117.

Yang, S., Lu, Y., Wang, B., & Zhao, L. (2014). The benefits and dangers of flow experience in high school students' internet usage: The role of parental support. *Computers in human behavior*, 41, 504-513. doi: http://dx.doi.org/10.1016/j.chb.2014.09.039

APPENDICES

APPENDIX A

Personal Communication from Erowid

Thanks for contacting us! Sounds really interesting! I look forward to knowing more about 'recreational therapy'.

As you probably know, Erowid doesn't have a huge, braod, or deep collection of heroin reports. Heroin is one of the more difficult substances to collect good data about via an online form. We do have some good reports, but compared to psychedelics or other more-stimulating drugs, heroin (morphine, *-codone, etc) all trigger reduced conscious awareness, induce unconciousness (or twilight consciousness) at higher doses, etc etc.

So contemporaneous notes are essentially non-existent with medium and high dose heroin. Also, the demographics of most heroin users has traditionally (the last 20+ years) not been folks who write online reports.

But, we are happy to approve your research using the erowid experience reports with the following caveats:

1) Erowid is credited properly in any published version. Erowid Experience Vaults are an edited collection for citation purposes. Erowid Editors or Erowid are the 'editors'. We can provide citation examples if necessary.

2) We also strongly prefer that if Erowid's data is used in any substantial way, that Erowid itself is mentioned inline early-ish in the discussion in which any erowid info is used and not only as a buried numerical citation.

3) Please do not refer to Erowid Experience Vaults as a 'forum', since texts are submitted, and all publication on erowid is edited and reviewed by multiple trained people. Most 'forums' have some moderation, but it's done post-hoc. And nearly all forum posts are published. Erowid publishes around 50% of submissions and another 10% are marked as 'cellar' (On a grading scale of A to F, we call them 'F plus', meaning they do not meet our minimum standards except there is something in the report that the editors consider valuable enough to 'save'). Cellar reports do not show up in normal searches or views.
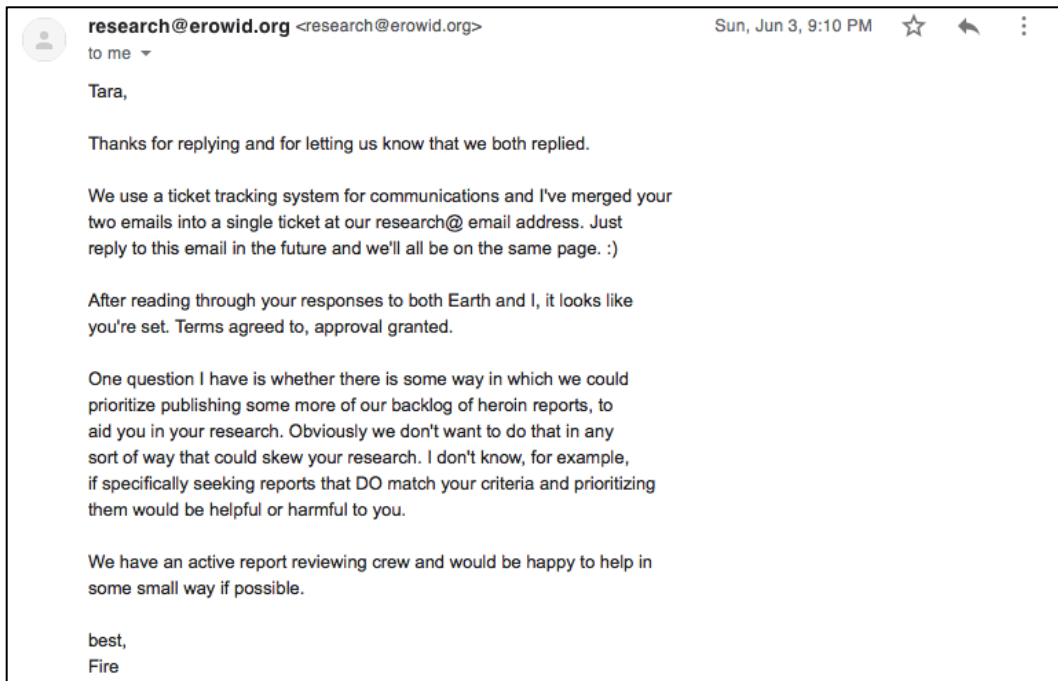
4) Please send us a draft copy early enough that we can provide edits that you can choose whether to include. There are often technical details authors get wrong about our review and publishing. Often a few small word changes can resolve missed descriptions.

  4a) One of the most common errors made in descriptions of Erowid Experiences is that one can extrapolate from our published data in ways that are not appropriate. Because of the editorial process (a collaborative filtering system we designed in 2000, but with senior editors as well as a large number of trained volunteers), you should not attempt to do simple extrapolations about use patterns or popularity of substances based on our publication dates. It can often take years to even fully 'triage' (2-3 people agree on a basic sort of 'publishabble or not').

5) Any substantial (more than a few words) quotations made from experience reports should be cited to the original report. There are a number of acceptable citation formats, but we promise our submitters that their names will remain attached to their work. So, we ask/require that citations include the author name. In the case of author names that are offensive or overly long, abbreviations are acceptable. In our own published work, we use an inline (Exp17723, 2004) or (Rod S. Erowid Exp27171) or similar, then include the full publication details as end notes,

6) If you run a 'scraper' or spider to download reports, you let us know the IP address and name of the spider. We have a lot of robot blocking installed these days and your scraper might get shut down by our systems. I do have an API/researcher in I can provide to get you reports in a different format, but you would need to figure out your search parameters using the public search interfaces.

7) You send us a copy of the final publication, either as a digital file (pdf) or as paper (if there are lots printed). We keep a large physical library ane we have a section devoted to writings or research that use erowid as a source.

Hope some part of our collection can help, though it's not our forte.

earth

APPENDIX B

Approval for Use of Erowid Data

research@erowid.org \<research@erowid.org\>   Sun, Jun 3, 9:10 PM   ☆   ↩   ⋮
to me ▾

Tara,

Thanks for replying and for letting us know that we both replied.

We use a ticket tracking system for communications and I've merged your
two emails into a single ticket at our research@ email address. Just
reply to this email in the future and we'll all be on the same page. :)

After reading through your responses to both Earth and I, it looks like
you're set. Terms agreed to, approval granted.

One question I have is whether there is some way in which we could
prioritize publishing some more of our backlog of heroin reports, to
aid you in your research. Obviously we don't want to do that in any
sort of way that could skew your research. I don't know, for example,
if specifically seeking reports that DO match your criteria and prioritizing
them would be helpful or harmful to you.

We have an active report reviewing crew and would be happy to help in
some small way if possible.

best,
Fire

APPENDIX C

IRB Approval to Conduct Non-Human Subjects Research

Dear Tara Shibbani,

The Oklahoma State University Institutional Review Board (IRB) has approved the following protocol:

Protocol Number: ED-18-161
PI: Tara Shibbani
Title: What it means to be high: A qualitative exploration of mimetic flow experiences during heroin use
Review Level: Not Human Subjects

You will find a copy of your Approval Letter in the generated documents section on IRBManager. Click IRB - Initial Submission to go directly to the event page. Please click attachments in the upper left of the screen to access the approval letter. Stamped recruitment and consent documents can also be found in this location. Only the approved versions of these documents may be used during the conduct of your research.

As Principal Investigator, it is your responsibility to do the following:

Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.

Submit a request for continuation if the study extends beyond the approval period.

Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and

Notify the IRB office in writing when your research project is complete or submit a closure form.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB office at 405-744-3377 or irb@okstate.edu.

Best of luck with your research,

Sincerely,

Dawnett Watkins, CIP
Whitney McAllister, MS
_____
Oklahoma State University
Institutional Review Board

APPENDIX D

Coding Rules for MD1 – Goals

MAIN DIMENSION: GOALS (G)		
Definition	**Anchor Sample**	**Coding Rules**
A desired result or outcome of heroin use	At high doses, you fall in and out of consciousness, and getting this `nod' is what the veteran user prays for everytime he shoots up; to sleep the sleep of angels is the ultimate goal [Negative Creep, 577]	**The data bit must meet the following criteria:**
		The author explicitly references a goal or the absence of a goal by **using the word 'goal'***

CODING NOTES		
*	Distinguishing between goals and motivations:	Goals and motivations are interconnected and overlapping concepts – however, they are distinct elements of flow and must serve as distinct main dimensions in this theory-driven coding frame. As such, to make a clear distinction between goals and motivations in the context of this study, a data bit shall only be coded as a goal (MD1) if the author uses the word 'goal'.

THEORY
A goal, in the most basic sense, is a desired outcome. Goals are a driving force in flow experiences (Csikszentmihalyi et al., 2017). To intentionally achieve flow, Csikszentmihalyi (1990, 1993, 1997) distinguishes that an individual should nt only have goals, but that they should have clear goals. A clear goal, as described by Csikszentmihalyi et al. (2017), is defined as conscious knowledge of what one desires to accomplish during an activity. In this sense, subconscious or autopilot goals may be understood as passive, whereas clear goals may be understood as active. Additionally, the absence of goals or the disappearance of goals indicates the presence of apathy, which is the antithesis of flow (Csikszentmihalyi et al., 2017) .
Analysis at the sub-dimension level in MD1 will focus on sorting data bits into groups representing flow-like goals (clear or active) and un-flow-like goals (passive or absence of). There will be two predetermined sub-dimensions for MD1.

SUB-DIMENSIONS

Pro-Flow	A DB shall be coded as **SD1.1** if the author directly refers to a clear or active goal (conscious knowledge of what one desires to accomplish during an activity) related to heroin intoxication.
Anti-Flow	A DB shall be coded as **SD1.2** if the author directly refers to an unclear goal (i.e. "I don't know what my goal is"), to the absence of a goal (i.e. "I don't have a goal"), or to disappearance of goals (i.e. "All of my goals went away") during heroin intoxication.

Coding Rules for MD2 - Feedback

MAIN DIMENSION: FEEDBACK (F)		
Definition	**Anchor Sample**	**Coding Rules**
Internal or external cues experienced during heroin use	I draw back the plunger, it fills with a crimson mushroom cloud, the deep red overtaking the brown mixture. My stomach turns over, my heart pounds in my chest, this is gonna be a big one. [100MillionYearTrip, 72145]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author refers to an **internal cue** (i.e. bodily/corporeal sensation of any kind)*
		[B] The author refers to an **external cue** (i.e. environmental stimuli of any kind)
		[C] The author refers to the blunting, absence, or misinterpretation of cues**
Coding Notes		
*	References to the subjective feelings of euphoria, ecstasy, emptiness, and nothingness shall be coded as MD2 (F) when the data bit **strictly provides insight into the acute *feeling* of heroin** (as opposed to its larger value of heroin in the author's life, in which cases the DB should be coded as MD10). See example from the data.	**To be coded as MD2:** "I felt good. It's not what I would call `euphoria' but was more like a content emptiness" [Gary, 60628], **To be coded as MD10:** "I was in oblivion, a world of nothingness" [Trips, 20780]
**	See example from the data:	"I forgot my crutches and actually walked on my leg with the torn knee. I could not feel the pain then, afterwards I did but that's what more Heroin is for." [TarMonkey, 58878]
Language note	References to feelings of numbness shall be coded as feedback	

	Relaxation, relaxed, relax, and relaxing: If the author uses the word "relaxation" it shall be understood that they are referring to their **state of being** and such DBs shall be coded as MD3 (BCS). If the author uses the words "relax", relaxed", or "relaxing" it shall be understood that they are referring to a **physical sensation** and such DBs shall be coded as MD2 (F).	**State of being**: "Warm very gratifying state of relaxation and contentment, kind of like the feeling you have when you're young and your parents return after being away a long time. That type of reassuringness is what I feel when I shoot heroin." [Lane, 64944], **Physical sensation**: "My face became real relaxed giving me a tired lazy look. The sensation went all through my arms, legs, then fingers, and toes" [Recoveryguru, 11050]
Contextual Language note	References to warmth shall be coded as MD2 (F) in all instances where **the physical sensation of warmth is the sole focus** of the data bit. **In instances where the author** references warmth, yet it is nested within data bit with a different focus (see example), warmth shall be treated as secondary to the larger meaning and the DB shall be coded according to other pre-established coding rules of the appropriate main dimension.	**Would be coded as MD10 (ME), not MD2 (F)**: "I layed on the floor against my bed for hours. It was like being cradled by mom as I was nursing. I felt warm and loved. My jaw dropped and I drooled down my chin like an infant" [Recoveryguru, 11050]
Contextual language note	While overdosing on heroin can be understood as an actual loss of control (MD6), data bits that refer to **ways of knowing** that one is overdoing shall be coded as MD2 (F). See example from data.	"It was TOO intense, the rush. But at the same time, it felt GOOD. Amazing. Indescribable, even. Something in the back of my brain knew this was all wrong, I had taken too much" [burton, 94957]
Matters of the mind, brain and thoughts (MBT)	If the author refers to their MBT **in the context of describing the feeling of mental relaxation or numbness**, the DB shall be coded as MD2 (F). See **MBT Rules** for full delineation of related contexts.	"The wave consists of extreme relaxation of my whole body and mind" [Incudrew, 36614] **and** "…but more importantly, my mind. No, warmth hasn't entered my mind…something else has. Numbness perhaps?" [Pharm, 33914]

THEORY

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Feedback can be sorted into two categories: internal and external (Csikszentmihalyi et al., 2017). Internal feedback refers to physiological cues generated by the body-mind, such as emotional feelings and thoughts, heart rate, sweat, ease of breath, aches or pains, fatigue, and other corporeal experiences and sensations (Csikszentmihalyi et al., 2017). External feedback, then, refers to environmental cues, such as rules of engagement, logistics, weather, spatial proximity, other participants, order of events, and other non-corporeal factors relevant to the activity (Csikszentmihalyi et al., 2017). Csikszentmihalyi et al. (2017) explain that in order to foster flow, feedback must be unambiguous. When feedback, or internal and external cues, are unambiguous, an individual is easily able to identify, interpret, and act upon (if necessary) them. Therefore, unambiguous feedback is straightforward and clear to the individual recieving the feedback and ambiguous feedback is confusing, unclear, or nonexistent (Csikszentmihalyi et al., 2017).

Analysis at the sub-dimension level in MD2 will focus on sorting data bits into groups representing pro-flow feedback (unambiguous) and anti-flow feedback (ambiguous). There will be two predetermined sub-dimensions for MD2.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD2.1** if the author refers to *unambiguous* feedback. Feedback shall be considered unambiguous in all instances in which the author refers to feedback without describing it (directly or indirectly) as confusing, unclear, or distorted.
Anti-Flow	A DB shall be coded as **SD2.2** if the author refers to *ambiguous* feedback. Feedback shall be considered ambiguous in all instances in which the author refers (directly or indirectly) to any of the following: an absence of feedback, cessation of feedback, distortion of feedback, misinterpretation of feedback, difficulty recognizing and/or interpreting feedback, distortion or blunting of sensory input, experiencing confusion while trying to interpret feedback, or unclear/absent rules of engagement.

APPENDIX F

Coding Rules for MD3 – Balance of Challenge & Skill

MAIN DIMENSION: BALANCE OF CHALLENGE & SKILL		
Definition	**Anchor Sample**	**Coding Rules**
The actual or perceived interplay between challenge level and skill level	Not one to give up, I researched the drug and kept working at my dosage. [Edie, 71934]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author refers directly or indirectly to an interplay between challenge and skill*
		[B] The author directly refers to being in one of the eight channels of experience**

Coding Notes		
*	An interplay between challenge and skill may be demonstrated by reference to:	
	[1] An increase or decrease in skill level over time; an opportunity to gain or improve skill level	**[2]** An increase or decrease in challenge level over time; instances of fluctuating challenge
**	Channels of experience:	
	Apathy: The author uses the word "apathy" to describe their state of being while high on heroin. **Note**: References to apathy as a reason for heroin use shall be coded as MD9 (MO).	**Boredom**: The author describes their state of being as "bored", the activity of heroin use as "boring", or describes the experience with the word "boredom". **Note:** References to boredom as a reason for heroin use shall be coded as MD9 (MO).

	Relaxation: The author uses the word "relaxation" to describe their state of being while high on heroin. **Note**: References to the physical sensation of being "relaxed" or "relaxing" shall be coded as MD2 (F). See MD2 coding notes.	**Flow**: The author uses the word "flow" in the context of flow theory to conceptualize their state of being during heroin use. **Note**: This does not include casual or coincidental uses of the word "flow" - rather only instances in which the author clearly states that they were "in flow".
	Worry: The author uses the words "worry" or "worried" to describe their state of being while high on heroin. **Note**: References to *cessation* of worries shall be coded as MD7 (SC).	**Anxiety**: The author uses the words "anxious" or "anxiety" to describe their state of being while high on heroin. **Note**: References to *cessation* of anxiety shall be coded as MD7 (SC).
	Control: The author states that they feel "in control" while high on heroin. **Note**: References to feelings of control which are indirect or implied as well as references to lack of control shall be coded as MD6 (C).	**Arousal:** The author suggests that they were "aroused" (active, alert, and engaged) while high on heroin. **Note**: References to sexual arousal shall be coded as MD10 (ME).

THEORY

Flow can only manifest when an individual has entered the sweet spot where their skill level is perfectly matched with the difficulty of the activity (Csikszentmihalyi et al., 2017). Csikszentmihalyi (1997) identifies eight potential relationships between challenge and skill, which he refers to as channels of experience (Csikszentmihalyi & Wong, 1991/2014). The eight channels of experience include: arousal, flow, control, boredom, relaxation, apathy, worry, and anxiety (Csikszentmihalyi & Wong, 1991/2014).

Analysis at the sub-dimension level in MD3 will focus on sorting data bits into groups representing each of the eight channels of experience (arousal, flow, control, boredom, relaxation, apathy, worry, and anxiety) as well as a group representing the prevalence of an interplay between challenge and skill. There will be nine predetermined sub-dimensions for MD3.

SUB-DIMENSIONS

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Pro-Flow	A DB shall be coded as **SD3.1** if the author refers to any of the following: flow, arousal, or control (as defined in the coding notes), instances in which there was an opportunity for the author to improve their skills related to heroin use, or instances in which the author describes their skill and the challenge to be equally matched.
Anti-Flow	A DB shall be coded as **SD3.2** if the author refers to any of the following: apathy, boredom, relaxation, worry, or anxiety (as defined in the coding notes), not needing skill, or the absence of a challenge.

APPENDIX G

Coding Rules for MD4 – Attention

MAIN DIMENSION: ATTENTION		
Definition	**Anchor Sample**	**Coding Rules**
The state or quality of one's mental focus or ability to focus their thoughts/attention (psychic energy) while high on heroin	Thinking was extremely difficult [Marsupial, 39517]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author refers to the quality or clarity of their thought-focus
		[B] The author refers to their ability, or lack thereof, to focus their thoughts
		[C] The author refers to an absence of thoughts
		[D] The author refers to the process of thinking (e.g. cognition, attention, focus, thoughts, etc.)*
		[E] The author refers to the decrease interest in thinking or the cessation or disappearance of superfluous thoughts**
		[F] The author refers to experiencing "serenity" during heroin intoxication

Coding Notes		
* Matters of the mind, brain, and thoughts (MBT)	If the author refers to their MBT in **the context of describing the quality or clarity of their thought-focu**s the DB should be coded as MD4 (A). See **MBT Rules** for full delineation of related contexts.	"My mind wondered [sic] everywhere over the strangest things" [Blind Squid, 35928]

**a Matters of the mind, brain, and thoughts (MBT)	If the author refers to their MBT in **the context of the cessation or disappearance of superfluous thoughts** the DB should be coded as MD4 (A). See **MBT Rules** for full delineation of related contexts.	"[felt] washed off of every little annoying thought I had" [Lizard King, 31955] **and** "No matter what scenario came to mind, I was immediately able to dismiss it as unimportant" [Silver,4671]
**b	While anxiety manifests in superfluous thoughts, general references to relief from anxiety shall be coded as MD7 (SC) due to the existential nature of anxiousness.	

THEORY
Csikszentmihalyi (1997, 1993, 1990) conceptualizes attention as psychic energy. Focused attention, then, can be understood as the increasingly rare phenomenon in which the entirety of an individual's psychic energy is devoted to a single task (Csikszentmihalyi, 1990, 1997). Focused attention is characterized by the absence of wandering or superfluous thoughts (Csikszentmihalyi et al., 2017; Csikszentmihalyi, 1997). When attention becomes focused, thoughts and feelings unrelated to the activity at hand disappear from consciousness (Csikszentmihalyi et al., 2017). Csikszentmihalyi (1997) explains that focused attention provides a sense of serenity that is largely missing in daily life. When attention is laser focused on an activity, the stress, sadness, and obligations of the social world vanish entirely, and so long as attention remains focused, an individual experiences mental and emotional freedom (Csikszentmihalyi, 1990, 1997).
Analysis at the sub-dimension level in MD4 will focus on sorting data bits into groups representing flow-like attention (focused thoughts, serenity) and un-flow-like attention (disorganized, scattered thoughts). There will be two predetermined sub-dimensions for MD4.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD4.1** if the author refers to any of the following: freedom from thinking, cessation of superfluous thoughts, decreased perceived or actual need for conscious thinking, focused attention, or feelings of serenity.
Anti-Flow	A DB shall be coded as **SD4.2** if the author refers to any of the following: difficulty in thinking, controlling thoughts, paying attention, or focusing; distorted thinking.

APPENDIX H

Coding Rules for MD5 – Merging of Action & Awareness

MAIN DIMENSION: MERGING OF ACTION & AWARENESS		
Definition	**Anchor Sample**	**Coding Rules**
Connection or disconnection between an individual's mind (awareness) and body (actions) while using heroin	It was as if someone had disconnected my brain from my entire body [Kaltoon, 55170]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author directly or indirectly refers to a connection or disconnection between their mind/brain and body
		[B] The author refers to their mind/brain in the context of their mind/brain's connection or disconnection to their body*
		[C] The author refers to the state of their consciousness or awareness - including descriptions of "nodding"**
		[D] The author refers to their personal and/or internal perspective during heroin intoxication as singular or dualistic***

Coding Notes		
* Matters of the mind, brain and thoughts (MBT)	References to **the MBT in the context of the mind/brain's connection or disconnection to the body** should be coded as MD9 (MAA). See **MBT Rules** for full delineation of related contexts.	"it was as if someone had disconnected my brain from my entire body" [Kaltoon, 55170]
**	**Nodding** is defined by the NIH (2018) as "a back-and-forth state of being conscious and semiconscious" during heroin intoxication.	"Then my eyes began to close and I fell into a dreamy state. I could open my eyes if I put in the effort, but I didn't want to fight the feeling. It was like that point right before I am unconscious and fall asleep. I can just pull myself out but I don't want to. I call it the twilight of reality." [Recoveryguru, 11050]

***	See example from the data:	"I felt completely separate from myself" [Csc, 57576] **and** "The entire time, I felt like I was on the verge of just dropping out completely, almost like I was in a dream, or watching myself doing the things I was doing from an outside perspective." [Marsupial, 39517].

THEORY
Csikszentmihalyi (1990, 1997) defines consciousness as the sum of an individual's psychic (mental) energy and awareness, which can either be organized or disorganized. The merging of action and awareness is a state of completely ordered consciousness during which there is no separation between an individual's thoughts and their actions (Csikszentmihalyi et al., 2017, p. 29). When action and awareness have merged, an individual operates on an instinctual level, which allows for an override of the disembodied mind-body dichotomy that the average person is accustomed to (Csikszentmihalyi, 1975/2014, p. 135). Additionally, Csikszentmihalyi (2014) explains that when action and awareness have merged, an individual "does not operate with a dualistic perspective: one is very aware of one's actions, but not of the awareness itself...The moment awareness is split so as to perceive the activity from "outside," the flow is interrupted" (p. 138).
Analysis at the sub-dimension level in MD5 will focus on sorting data bits into groups representing flow-like manifestations of the merging of action and awareness (mind-body harmony, unity) and un-flow-like manifestations of the merging of action and awareness (mind-body dissonance, disconnect). There will be two predetermined sub-dimensions for MD5.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD5.1** if the author refers to any of the following: mind-body connection (harmony) or singular perspective during heroin intoxication.
Anti-Flow	A DB shall be coded as **SD5.2** if the author refers to any of the following: mind-body disconnection (dissonance), nodding, or dualistic perspective during heroin intoxication.

Coding Rules for MD6 – Control

MAIN DIMENSION: CONTROL		
Definition	**Anchor Sample**	**Coding Rules**
An individual's actual or perceived ability to maintain personal safety and/or autonomy while using heroin	Feeling that I was safe from any possible threat to my body, my emotions, myself in general [sick of it all, 26152]	**The data bit meets at least one of the following criteria:**
		[A] The author refers directly or indirectly (but not explicitly) to feeling in or out of control during their heroin experience*
		[B] The author refers directly or indirectly to their sense of personal safety
		[C] The author refers to their ability, or lack thereof, to control their actions, their environment, or their own body (excluding their thoughts) while using heroin**
		[D] The author refers to or implies a decrease/lack of regard or concern for their personal safety***

Coding Notes		
*	Explicit references to feeling in control while high on heroin (e.g. "I felt totally in control") shall be coded as MD3 (BCS)	
** Matters of the mind, brain and thoughts (MBT)	If the author refers to controlling their thoughts, the DB should be coded as MD4 (A) – even if they use the word 'control'. See **MBT Rules** for full delineation of related contexts.	"My thoughts weren't so easy to control, even with mantra" [Voyager, 50739]

***	See example from the data:	"I could have been robbed, shot and have my id cards taken, all that crazy shit that happens to americans that go down there after dusk. But I simply didn't give a fuck. I felt so good. Nothing could go wrong." [Blind Squid, 35928]
Language notes	Language that implies a *sense of control* may include (but is not limited to): power, in charge, feeling godlike, untouchable, invincible, feeling one can do no wrong.	Language that implies a *lack of control* may include (but is not limited to): confined, paralyzed, stuck, overdose, trapped, surrender, taking over, passing out, blacking out.
	Language that implies a *sense of safety* may include (but is not limited to): safe, secure, cozy, comfortable, protected, at ease etc.	Language that implies a *sense of danger* may include (but is not limited to): afraid, scared.
Contextual language note	While the word relaxed could imply a sense of safety, it shall be coded as either MD2 (F) due to the fact that relaxation can be understood as a physical sensation or as MD3 (BCS) due to the fact that relaxation can be understood as a state of being. See individual coding rules.	
Contextual language note	If the word comfortable is used to describe the physical feeling of warmth, the DT shall be coded as MD2 (F) rather than MD6 (C). For further delineation of coding the warmth, see MD2 (F) coding notes.	"You feel as if you've been wrapped in the most pleasing, warm, and comfortable blanket in the world." [Negative Creep, 577]
Contextual language note	Nodding: Unless the author explicitly states that they experienced a lack of control during nodding (in which case it would be coded as MD6), references to nodding shall be coded as MD5 (MAA).	

THEORY

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Csikszentmihalyi (2014) explains that, "A person in flow is in control of his actions and of the environment" (p. 142). Sense of control is best conceptualized as an absence of worry, fear, or anxiety (Csikszentmihalyi, 1975/2014). This does not imply that an individual lacks a healthy respect or appreciation for their safety, but rather that their skill level and focused attention provide them with the necessary confidence to participate in an activity without the intrusion of worrisome thoughts (Csikszentmihalyi, 1975/2014). An individual's sense of control is determined by the degree to which they fear that they could lose control (Csikszentmihalyi, 1975/2014). An individual's perception of control is paramount, as an individual need not actually be in control to experience flow, but they must perceive that they are (Csikszentmihalyi, 1975/2014).

Analysis at the sub-dimension level in MD6 will focus on sorting data bits into groups representing flow-like control (sense of safety, feeling of control) and un-flow-like lack of control (sense of fear, lack of control). There will be two predetermined sub-dimensions for MD6.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD6.1** if the author refers to any of the following: feeling in control, feeling safe, or actual or perceived ability to control their actions, environment, and own body.
Anti-Flow	A DB shall be coded as **SD6.2** if the author refers to any of the following: feeling out of control, feeling unsafe (afraid or fearful), actual or perceived inability to control their actions, environment, and own body, or lack of regard for personal safety.

Coding Rules for MD7 – Self-consciousness

MAIN DIMENSION: SELF-CONSCIOUSNESS		
Definition	**Anchor Sample**	**Coding Rules**
Functions of the ego ("an individual's sense of self that responds to social pressures of being human") during heroin use	Perhaps one of the best feelings is actually the absence of feelings. There is a complete emotional, psychological, and physical numbness that I get with Heroin. I don't have a care in the world, and there isn't one damn thing that could ever bother me. It is a complete temporary escape from all pain. [sepulfreak, 41495]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author refers to a function of the ego (social pressures, self-importance, personhood, etc.)
		[B] The author refers to relief from functions of the ego*
		[C] The author refers to feelings of non-existence or suspended existence**
		[D] The author refers to being disassociated, disconnected, withdrawn, or separate in general or from the world or society***
Coding Notes		
*a	References to relief from superfluous thoughts shall be coded as MD4 (A), while general references to relief from anxiety shall be coded as MD7 (SC). See **MBT Rule** #3 and MD4 (A) coding notes for further detail.	

*b	**Relief from the ego** may include (but is not limited to) references to: not worrying about one's problems, cessation of worries (in general), forgetting pain and suffering, not having a care in the world or simply not caring, nothing mattering, not wanting or needing anything, relief or escape from stresses or pains of daily life, relief from social pressures, release of inhibitions, relief of anxiety or other existential fears, forgetting that one is human, full or partial disconnection sense of self (e.g. feeling erased), and loss of interest in individual personhood (loss of interest in self) or loss of interest in others.	
**	See examples from the data:	**Non-existence**: "I was not even sure that I actually existed" [nam 67, 57905], **Suspended existence**: "I simply exist in that moment and that's all that matters" [LizardKing, 31955]
***	See example from the data:	"Heroin unplugs me from the rest of he world" [Kdubya, 81095]
Matters of the mind, brain and thoughts (MBT)	If the author refers to their MBT and it **is irrevocably nested within a DB that is otherwise related to relief from the ego** (disappearance of problems) the DB should be coded as MD7 (SC).	"A feeling of absolute Nirvana. I am washed off of every sin, every bad thought, every problem" [Lizard King, 31955]
Contextual language note	If the author refers to their consciousness **in the context of their self-perception** during heroin use, the DB shall be coded as MD (SC). See example from the data.	"I've had a long hard week at work, but it doesn't matter now Nothing matters now, except the very concept of `now'. `Now' is the only thing I can prove. . .my memories fade, my future is foggy and could happen any number of ways, or not at all. All my consciousness perceives is this moment I am in, which is always gone as soon as it is there." [Pharm, 33914]
Contextual language note	If the author uses the word numbness to specifically describe relief from the ego, the DB shall be coded as MD7 (SC). See example from that data.	"No care in the world. My whole body is numb, and I'm so dissociated from the world" [nam 67, 57905]

THEORY
Loss of self-consciousness during flow manifests in relief from the ego (Csikszentmihalyi, 1975/2014). The ego can be understood as an individual's sense of self that responds to social pressures of being human

(Csikszentmihalyi, 1975/2014). Loss of self-consciousness, then, may be best understood as a state in which a human is temporarily freed from the ego-driven confines of their human-ness (Csikszentmihalyi, 2014/1975). An individual in flow is temporarily relieved of existential fears and social pressures (Csikszentmihalyi, 1975/2014).

Analysis at the sub-dimension level in MD7 will focus on sorting data bits into groups representing flow-like loss of self-consciousness (deactivated ego) and un-flow-like self-consciousness (activated ego). There will be two predetermined sub-dimensions for MD7.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD7.1** if the author refers to any of the following: functions of the ego (self-importance, worry about social pressures and problems, personhood), feelings of connectedness to self and/or others.
Anti-Flow	A DB shall be coded as **SD7.2** if the author refers to any of the following: relief from functions of the ego (self-importance, worry about social pressures and problems, personhood), feelings of nonexistence or suspended existence, feeling disassociated, disconnected, withdrawn, or separate from one's self, the world, or society.

Coding Rules for MD8 – Time

MAIN DIMENSION: TIME		
Definition	**Anchor Sample**	**Coding Rules**
An individual's perception of the speed at which time is passing while high on heroin	Time dilation is enormous, it almost seems like time has frozen, a minute feels like an hour [Silver, 4671]	**The data bit meets the following criteria:**
		The author refers directly or indirectly to the passing of time.
Coding Notes		
n/a		

THEORY
During flow, the construct of time becomes irrelevant and the experience of time is altered (Csikszentmihalyi, Abuhamdeh & Nakamura, 2005/2014). Flow presents the unique opportunity for individuals to "escape the tyranny of time" (Csikszentmihalyi et al., 2017, p. 35). During flow, hours can pass by in what feels like only minutes and minutes can seem to contain what feels like hours of experience (Csikszentmihalyi et al., 2005/2014).
Analysis at the sub-dimension level in MD8 will focus on sorting data bits into groups representing flow-like experiences of time (distorted, irrelevant) and un-flow-like experiences of time (true, relevant). There will be two predetermined sub-dimensions for MD8.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD8.1** if the author refers to any of the following: altered or distorted sense or experience of time; irrelevance of time or the perceived cessation of time, or escape from "the tyranny of time" during heroin intoxication.

Anti-Flow	A DB shall be coded as **SD8.2** if the author refers to any of the following: perception that time is following a traditional linear format (i.e. non-distorted perception of time), relevancy of time (pressure, urgency), or oppression from "the tyranny of time" during heroin intoxication.

Coding Rules for MD9 – Motivation

MAIN DIMENSION: MOTIVATION		
Definition	**Anchor Sample**	**Coding Rules**
A reason for participating in the activity of heroin use	After a long day of classes, job hunting, and looking for a new apartment I found myself coming down with a cold. I had no desire to stay up feeling like shit, so this seemed like a great excuse to shoot some dope. [AI, 68965]	**The data bit must meet both criteria:**
		[1] The data bit must not meet the criteria for MD1 (G)*
		AND
		[2] The data bit meets at least one of the following criteria:
		[A] The author directly refers to a reason for using heroin using explanatory language**
		[B] The author indirectly implies a reason for using heroin (provides a reason without using explanatory language)
		[C] The author directly refers to 'motivation'
		[D] The author directly or indirectly refers to the absence of a reason for using heroin
		[E] The DB provides insight into the author's decision-making process (a reason why they got high on heroin)

Coding Notes	
*	Refer to coding rules for MD1 (G)

**	**Explanatory language includes** (but is not limited to):	Because, reason, the point, why, driving force, intention, purpose, want, looking for, etc.
Matters of the mind, brain and thoughts (MBT)	If the author refers to their MBT in the context of **explaining their reason(s) for using heroin** the DB should be coded as MD9 (MO). See **MBT Rules** for full delineation of related contexts.	"I was open to absolutely anything that would take my mind off of my dead friends" [nam 67, 57905]

THEORY
Although many conceptualizations of intrinsic motivation exist, flow theory is based on an activity-oriented model of intrinsic motivation (Landhäußer & Keller, 2012). Landhäußer and Keller (2012) offer the following description of activity-oriented intrinsic motivation: "Activities are seen as intrinsically motivated when the main incentive lies in the performance of the activity itself, while activities are seen as extrinsically motivated when the main incentive lies in its expected results" (p. 69). In his writings, Csikszentmihalyi further conceptualizes intrinsic motivation as participation in the absence of immediate awareness of external reward or obligation (Csikszentmihalyi, Graef, & McManama Gianno, 1983/2014; Csikszentmihalyi, 1990, 1997). In contrast, extrinsic motivation can then be understood as participation in the presence of immediate awareness of external reward or obligation (Csikszentmihalyi et al., 1983/2014).
Analysis at the sub-dimension level in MD9 will focus on sorting data bits into groups representing flow-like motivation for heroin use (intrinsic) and un-flow-like motivation for heroin use (extrinsic, absence of motivation). There will be two predetermined sub-dimensions for MD9.

SUB-DIMENSIONS	
Pro-Flow	A DB shall be coded as **SD9.1** (Pro Flow) if the author refers to a primary incentive (i.e. the high, the feeling, the experience itself, curiosity) as the reason for using heroin. *Researcher will utilize Determining Source of Motivation table*
Anti-Flow	A DB shall be coded as **SD9.2** (Anti Flow) if the author refers to a secondary incentive (e.g. escape from pain or social stressors, relief from boredom or anxiety, etc.) or external pressure (e.g. peer pressure) as their reason for getting high on heroin OR the author refers to a lack of or uncertain motivation(s) for getting high on heroin. *Researcher will utilize Determining Source of Motivation table*

Coding Rules for MD10 – Meaning

MAIN DIMENSION: MEANING		
Definition	**Anchor Sample**	**Coding Rules**
The perceived value or significance of being high on heroin	The joys of Heroin are so simple yet so complex. Without Dope I often feel I cannot accept the world for what it is. [Chucklez, 19635]	**The data bit meets <u>at least one</u> of the following criteria:**
		[A] The author directly or indirectly refers to a way in which they perceive heroin adds or has added value to their life
		[B] The author refers to an absence of meaning, significance, or value
		[C] The author refers to a reward or benefit they gain from heroin use
		[D] The author describes the content of their experience using language that yields insight into heroin's meaning to them*
Coding Notes		
*	**Language that conveys meaning** may include (but is not limited to) use of the following key words or concepts:	Acceptance, alive, awakening, beauty, bliss, calm, connection, content, discovery, escape (if not used in direct reference to relief from the ego), feeling on top of the world, feeling ten feet off the ground, freedom, happiness, identity, joy, love, lust, medicine (cure or remedy), nothingness, oblivion, otherworldliness (not as relief from ego), peace, perfect, relationship, religious or spiritual references, renewal, ritual, tranquility, transcendence, etc.

Contextual language note	References to the subjective feelings of euphoria, ecstasy, emptiness, and nothingness shall be coded as MD2 (F) when the data bit **strictly provides insight into the acute *feeling* of heroin** (as opposed to its larger value of heroin in the author's life, in which cases the DB should be coded as MD10). See example from the data.	**To be coded as MD2:** "I felt good. It's not what I would call `euphoria' but was more like a content emptiness" [Gary, 60628], **To be coded as MD10:** "I was in oblivion, a world of nothingness" [Trips, 20780]
Matters of the mind, brain and thoughts (MBT)	If the author refers to their MBT **in the context of describing heroin's value or significance** the DB should be coded as MD10 (ME). See **MBT Rules** for full delineation of related contexts.	"Everything in my mind, body and my environment was just perfect" [Voyager, 50739]
Profound experience	Some experiences are simply profound and leave a lasting impact on a person - this type of expression shall be understood as demonstration of meaning. If a data bit reflects such an instance, the data bit should be coded as MD10 (ME) even if it contains individual references to content that could, on its own, be coded in another MD. In such instances, the whole data bit is given priority over the sum of its parts. See example from the data. In this example, the author expresses that they have overdosed on heroin, which implies a loss of control (MD6), however, they are recalling a profound experiencing about overdosing, so the DB shall be coded as MD10.	"When he shot me up I felt as though I traveled to a different place. It was a place where there was great vegitation and water. I was flying through the water but I wasn't swimming. Just flying under water. I grabbed a fish and stuck it between my mouth like a bird when ALL of a sudden I realized I was A BIRD. When I came out of the water I saw this hole with a deep pit. It was purple and had huge pillars going down it. I decided not to go in when all of a sudden I got pushed by something then as I fell I woke up in the hospital. I had overdosed on Heroin but it was an experience I will never forget." [Ferreally, 31268]
Contextual language note	If the words "warm" or "warmth" are **irrevocably nested within a data bit that otherwise conveys the meaning of heroin use (not just simply how it feels)**, the DB shall be coded as MD10. See example from the data.	"in my heart I knew I had found my new love. I knew because along with the warmth I felt something I had never before felt with any other drug - LUST." [Seven, 45881]

THEORY
Csikszentmihalyi (1990) states that meaning can be understood, in a very basic sense, as the "significance of something" (p. 216). In a less basic sense, Csikszentmihalyi (1990) explains that meaning represents "the subjective order that a unified purpose brings to individual consciousness" (p. 217). Furthermore, Csikszentmihalyi explains that meaningful activities bring meaning to one's life (Csikszentmihalyi (1990). In relation, Csikszentmihalyi (1990) asserts, "The meaning of life *is* meaning: whatever it is, wherever it comes from, a unified purpose is what gives meaning to life" (p. 217). In this sense, it can then be understood that the individual positively-perceived nuances of heroin intoxication that give it significance and value, inherently give it meaning as well. Furthermore, Csikszentmihalyi (1997) explains that emotions largely define experience, as activities elicit emotions and emotions provide structure to one's consciousness (Csikszentmihalyi, 1997). For this reason, positively perceived emotions experienced during heroin intoxication are rich indicators of meaning, significance, and value.
Analysis at the sub-dimension level in MD10 will differ from the format used in the other nine main dimensions, as the focus will not be on identifying flow-like and un-flow-like groups. The focus, rather, will be on identifying groups of shared meaning, in the words of those who have lived it, related to the experience of heroin intoxication - as such, there will be no predetermined sub-dimensions for MD10 - they will be derived organically from the data.

Matters of the Mind, Brain, & Thoughts Decision Tree

MATTERS OF THE MIND, BRAIN, & THOUGHTS (MBT)	

Context matters! The research sample is heavily pregnant with references to the mind, the brain, and to thoughts and thinking - the context within which the author refers to their MBT shall determine the code for each individual data bit. When necessary, the researcher will return to the experience report of origin to verify the context of a data bit. The following contextual rules shall be used to determine main code:

Rule	Example(s) from the data
[1] If the author refers to their MBT **in the context of describing the feeling of mental relaxation or numbness**, the DB shall be coded as MD2 (F).	"The wave consists of extreme relaxation of my whole body and mind" [Incudrew, 36614] and "…but more importantly, my mind. No, warmth hasn't entered my mind…something else has. Numbness perhaps?" [Pharm, 33914]
[2] If the author refers to their MBT in **the context of describing the quality or clarity of their thought-focu**s the DB should be coded as MD4 (A).	"My mind wondered [sic] everywhere over the strangest things" [Blind Squid, 35928]
[3] If the author refers to their MBT in **the context of the cessation or disappearance of superfluous thoughts** the DB should be coded as MD4 (A).	"[felt] washed off of every little annoying thought I had" [Lizard King, 31955] **and** "No matter what scenario came to mind, I was immediately able to dismiss it as unimportant" [Silver, 4671]
[4] References to **the MBT in the context of the mind/brain's connection or disconnection to the body** should be coded as MD9 (MAA). See	"it was as if someone had disconnected my brain from my entire body" [Kaltoon, 55170]
[5] If the author refers to **controlling their thoughts**, the DB should be coded as MD4 (A) – even if they use the word 'control'.	"My thoughts weren't so easy to control, even with mantra" [Voyager, 50739]
[6] If the author refers to their MBT and it **is irrevocably nested within a DB that is otherwise related to relief from the ego** (disappearance of problems) the DB should be coded as MD7 (SC).	"A feeling of absolute Nirvana. I am washed off of every sin, every bad thought, every problem" [Lizard King, 31955]
[7] If the author refers to their MBT in the context of **explaining their reason(s) for using heroin** the DB should be coded as MD9 (MO). See **MBT Rules** for full delineation of related contexts.	"I was open to absolutely anything that would take my mind off of my dead friends" [nam 67, 57905]
[8] If the author refers to their MBT **in the context of describing heroin's value or significance** the DB should be coded as MD10 (ME). See **MBT Rules** for full delineation of related contexts.	"Everything in my mind, body and my environment was just perfect" [Voyager, 50739]

Determining Source of Motivation Chart

Determining Source of Motivation

1.

	YES	NO	UNCLEAR
Is the author's stated reason for getting high on heroin related to a secondary incentive?			
	Stop. It is an extrinsic motivation. Code as SD9.2	*Skip to Q5.*	*Continue to next question.*

2.

	YES	NO	UNCLEAR
Is the author's stated reason for getting high on heroin attributed to or influenced by a desire to cope with or escape psychic entropy? (e.g. feelings of boredom, depression, sadness, anxiety, apathy, desperation, etc.)			
	Stop. It is an extrinsic motivation. Code as SD9.2	*Continue to next question.*	*n/a*

3.

	YES	NO	UNCLEAR
Is the author's stated reason for getting high on heroin attributed to or influenced by peer or external pressure(s)?			
	Stop. It is an extrinsic motivation. Code as SD9.2	*Continue to next question.*	*n/a*

4.

	YES	NO	UNCLEAR
Does the author state that they do not know why they chose to get high on heroin or that there is no reason for it at all?			
	Stop. Unclear or absence of motivation is anti-flow. Code as SD9.2	*Continue to next question.*	*n/a*

5.

Is the author's stated reason for getting high on heroin related to a **primary incentive**?	YES	NO	UNCLEAR
	Stop. It is an intrinsic motivation. Code as SD9.1	*Return to Q2 if skipped ahead or continue to next question.*	*Continue to next question.*

6. Is the author's stated reason for getting high on heroin related to piqued interest in the experience or satisfying their curiosity?	YES	NO	UNCLEAR
	Stop. It is an intrinsic motivation. Code as SD9.1	*n/a*	*n/a*

VITA

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