

CHAPTER 13

PROXIMAL INFLUENCES ON ADDICTION

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The syndrome model provides a comprehensive conceptualization of what addiction is and how various expressions of it emerge. The syndrome model provides a unifying framework that draws on other areas of medicine (e.g., diabetes and AIDS) to clarify how different manifestations of addiction and many different types of symptoms can be understood as representing a core pathology. The central question “When is addiction addiction?” (Leshner, 1999) frames this exploration, highlighting that many of the assumptions taken for granted to answer this question do not fully hold up when exposed to counterexamples, logical scrutiny, and empirical research.

In this chapter, I address one part of the syndrome model: proximal antecedents. They are biopsychosocial factors “that influence the likelihood of further syndrome development” (Introduction to this handbook, p. XX). Proximal antecedents are defined by their time course in relation to both earlier events (distal antecedents) and later events (subsequent addictive behavior). In general, *proximal* is defined as “situated close to” (*Proximal*, 2010), and “nearest to a point of reference” (*Proximal*, 2007). As Shaffer et al. (in the Introduction to this handbook) note, “Although distal antecedents of addiction . . . are well documented, the proximal antecedents that influence the likelihood of further syndrome development remain poorly identified” (p. XX). The goal, then, in this chapter is threefold:

1. To identify different types of proximal antecedents that can influence addictive behavior;

2. To explore contextual factors that can increase or dampen the response to proximal antecedents; and
3. To discuss how researchers can further elaborate the proximal antecedents within the context of the syndrome model.

Much of the discussion focusing on the proximal antecedents of addiction also has implications for the development and maintenance of other mental disorders that co-occur with addiction (Kessler, Chiu, Demler, Merikangas, & Walters, 2005).

DIFFERENT TYPES OF PROXIMAL ANTECEDENTS

A virtually limitless number of proximal antecedents can increase or decrease the likelihood of addiction development. In this section, I offer a framework for identifying different types of proximal antecedents, to help categorize them in ways that are relevant for research and clinical work using the syndrome model. The key categories are traumas, stressors, physical antecedents that are not traumatic, emotional antecedents, lifestyle-related antecedents, and positive antecedents.

Traumas

Traumas are epidemic in both the United States and globally. Most Americans, for example, experience one or more traumas during their lifetime: 61% of males and 51% of females (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The fourth edition of the *Diagnostic and Statistical*

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Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) defined *trauma* as the experience, threat, or witnessing of physical harm, which evoke “intense fear, helplessness, or horror” (p. 427). Traumas are wide ranging, including natural disasters such as hurricanes and tornados, combat, severe life-threatening physical illness or injury, violent assault, physical or sexual abuse, serious accidents (automobile, industrial, toxic chemical), and terrorism incidents, among other events. Trauma-related syndromes such as posttraumatic stress disorder are, moreover, known to be associated with the development of all types of addictions; thus, traumas represent an important category of proximal antecedents (Kessler et al., 1995; Najavits & Cottler, in press; Ouimette & Brown, 2002). Numerous subgroups are at heightened risk for trauma and addiction, including veterans and active-duty military, people who are homeless, criminal justice detainees, emergency room patients, first responders, sex workers, and victims of domestic violence (Desai, Harpaz-Rotem, Najavits, & Rosenheck, 2008; Gentilello et al., 2000; Jones, Hughes, & Unterstaller, 2001; Najavits et al., 2008; Ouimette & Brown, 2002; Seal et al., 2009).

Stressors

There are also innumerable antecedents to addiction that are stressful but not technically traumas because they are not physical events per se. These stressors include, for example, divorce, job loss, poverty, and discrimination such as racism, homophobia, and ageism. Chronic negative stressors, such as continually working too hard, social isolation, caretaking of elderly parents, problem children, and bad marriages, can also take a toll over time that can lead to addiction. Positive events are also associated with stress (Dohrenwend & Dohrenwend, 1974): marriage, adult children leaving home, job promotions, moving to a new city, starting a new romantic relationship, beginning new projects, and so on. Stress has generally been shown to be linked to the development of addictions (Jacobsen, Southwick, & Kosten, 2001) and to addiction relapse (Sinha, 2007), although there is much less study of specific stressors in

relation to addiction if they are nontraumatic in nature.

Physical Antecedents That Are Not Traumatic

Various normal physical events can be proximally associated with the development of addiction. These events include developmental progressions such as body changes during adolescence, menopause, aging, death of loved ones, recovery from surgery, physical illnesses and injuries, and chronic pain (Brady, Back, & Greenfield, 2009; Carinci & Mao, 2010; Najavits, 2002). Nontraumatic physical constraints, such as incarceration, lack of sufficient food, or intense physical discomfort, might also be associated with compensatory addictive behavior. The association between physical antecedents and addictive behavior can occur through different types of mechanisms. For example, having to tolerate or suffer a physical experience can lead to increased addictive behavior (e.g., numbing the pain; Najavits, 2004). In other cases, the origin might not be the original physical event per se but rather related ones, such as becoming dependent on opioid painkillers that were prescribed for physical illness. Returning veterans from Iraq and Afghanistan, for example, evidenced increased rates of dependence on painkillers that were prescribed for physical injuries resulting from their military service (Schneider, 2009).

Emotional Antecedents

During the course of daily life events (work, family and social relationships, traffic, leisure, sports, etc.), people experience all sorts of emotions, such as sadness, anger, anxiety, shame, guilt, happiness, joy, and excitement. Emotions of all types can be associated, for some people, with the use of psychoactive substances or other potential objects of addiction. For example, anger can trigger drinking alcohol, anxiety can lead to excessive spending, and excitement can result in gambling. The association between emotions and subsequent addictive behaviors has been observed for a long time (Marlatt & Gordon, 1985), but there is as yet no widely agreed-on, empirically based classification of emotions in relation to addiction.

Lifestyle-Related Antecedents

Numerous lifestyle-related antecedents can also accumulate to be proximally associated with addiction. These antecedents include sporting events at which fans routinely drink alcohol, college life (e.g., gaming, Internet, alcohol, parties), socializing with people who engage in addictive behaviors, and working in jobs or subcultures in which there is heightened exposure to addictive behavior (e.g., bartending, sex work, drug dealing). Although research has indicated that mere exposure to substances or gambling is not, in and of itself, associated with increased prevalence of addiction (LaPlante & Shaffer, 2007), some lifestyle factors are important to study in relation to other factors that can combine, additively, to increase the likelihood of addiction (e.g., personality traits, emotion dysregulation).

Positive Antecedents

It is important to recognize that proximal antecedents can be positive as well as negative events. Many of the situations and activities just described are negative in nature, representing challenges to the individual. However, proximal antecedents can also include positive events (e.g., acquisition of money, which can increase the likelihood of substance use or gambling; social events, which can increase exposure and social pressure to use substances; career or family advancement, which can lead to celebratory behavior that includes alcohol or other substance use). The concept of proximal antecedents is so broad that it can represent virtually any event, of any valence (emotional, physical, psychological, spiritual, social, etc.). According to the syndrome model, it will likely be most productive, however, to focus on antecedent events that contribute to a reliable and robust shift in subjective experience in a desirable way. Thus, researchers and clinicians can evaluate the proximal antecedents of addiction according to their potential to alter subjective experience in a sought-after way.

VARYING CONTEXTS OF PROXIMAL ANTECEDENTS

Beyond the complex nature of proximal antecedents, one must also consider their context. Two

individuals can experience the same type of event (such as a traumatic assault) yet experience quite different impacts on the basis of the contexts of their experience. In addition, the same type of event can affect the same individual differently across time as a result of changing contexts. In this section, I address eight contextual factors: recurrence, social acceptance, level of control and preparation, beliefs, situational context, culture, and personal and family history. Each of these, either alone or combined, can strongly influence the degree to which proximal events actually become antecedents to addiction.

Recurrence

Clearly, the more frequent a negative proximal event is, the more likely it is to evoke addiction-related responses. Thus, although a single event such as a traumatic car accident can, in and of itself, be associated with the development of addiction, repeated events are more likely to result in addiction. Thus, for example, the greater the number of adverse childhood experiences, the greater the likelihood of later addiction (Felitti et al., 1998). Recurrence can also be understood as chronicity (continuance of a proximal antecedent) rather than simply number (repeated discrete events). Thus, chronic physical pain and chronic stress are associated with increased rates of addiction, for example (Carinci & Mao, 2010). Recurrent events can also be positive, however, and they would likely decrease addictive responses. Repeated job successes, health promotion events, and good friendship experiences may prevent the development of addiction.

Social Acceptance

Social acceptance can be double edged, in some cases minimizing the likelihood of developing addiction and in other cases increasing it. For example, an adolescent who is being bullied at school might be prone to developing addiction to cope with this experience, but if the adolescent obtains strong social acceptance at home from her or his family or community, this experience might mitigate the negative impact of being bullied. Conversely, a college-age man may be encouraged to drink or gamble more than he normally would as a result of peer social acceptance of such behavior (and even

encouragement or pressure to drink or gamble). The reverse of social acceptance is social stigma, which is similarly double edged. Social stigma can prevent someone from engaging in a potentially addictive behavior (e.g., conservative cultures in which it is not acceptable to use illegal drugs); alternatively, social stigma can promote potentially addictive behavior (e.g., a trauma survivor who feels alone or ostracized might try to cope by engaging in activities that are harmful, such as cutting or abusing psychoactive drugs). These attempts to cope can lead to behavior patterns that can become addiction (Gutmann, 1999).

Level of Control and Preparation

The ability to anticipate and prepare for events also plays a role (Najavits & Cottler, in press). For example, a soldier who volunteers to serve in the army and is well trained in military skills might feel more capable of managing military stressors and traumas than someone who is completely blindsided by an unexpected event. A child who is physically abused has no control over or ability to prepare for the abuse. Proximal antecedents associated with the higher levels of lack of control and lack of preparation are likely to have the strongest association with the subsequent development of addiction.

Beliefs

Cognitions play a major role in the perception and impact of events. The same event can evoke different beliefs that influence the subsequent likelihood of substance use. For example, a natural disaster such as a hurricane can elicit “I cannot cope with this; it is too overwhelming; I need to relax with a drink” versus “This is manageable; I can get help; I can cope.” There are various categorizations of cognitions, such as beliefs about self, world, and future (Beck, 1979); beliefs about trust, safety, esteem, intimacy, and control (McCann & Pearlman, 1990); beliefs about normalization versus stigmatization; and beliefs related to locus of control (Rotter, 1990), self- versus other blame, and so on. Moreover, beliefs themselves are sometimes proximal antecedents to addiction. Someone who habitually believes he or she is worthless or unlovable may drink to quiet such thoughts. It is also important to

recognize the bidirectionality between beliefs and addictive behavior. Proximal antecedents can spur particular beliefs (e.g., the hurricane victim who believes he or she cannot cope), but beliefs can also lead to proximal antecedents. A young adult who believes he or she is invulnerable might be more likely to engage in risky behaviors that result in traumatic proximal antecedents (e.g., drinking and driving).

Situational Context

Some situations increase or blunt the impact of proximal events. For example, during the Vietnam era, substance use was common and encouraged during military service (Shay, 1994). With reentry to civilian life, substance use typically decreased (Najavits & Cottler, in press). The context of the Iraq and Afghanistan wars, however, has had the opposite effect: There is now a zero-tolerance policy on substance use during active duty. Postdeployment, veterans might be more likely to use psychoactive drugs because of restrictions on substance use during deployment. Similarly, restricted environments such as prisons, jails, residential treatment settings, and inpatient units might, overall, decrease the likelihood of addictive behavior in relation to proximal events, simply because many addictive behaviors are monitored and proscribed in such settings.

Other situational contexts also influence proximal antecedents. These include whether the event was experienced alone versus in a group or community, whether the event was directly experienced or just witnessed, and whether a person or neutral source caused the event. Thus, an event can have more or less impact—and therefore more or less likelihood of leading to addiction—on the basis of some of these factors. In general, events are likely to have the most negative impact when they are experienced alone, directly experienced, and caused by another human being (e.g., “betrayal of what’s right”; Shay, 1994, p. 3).

Culture

Culture is a broad concept. Culture has a profound impact on events and how people perceive and respond to them. Whereas *situational context* (see

preceding section) refers to actual observable events, culture is a more amorphous, but no less powerful, set of assumptions that is often unconscious. For example, culture can affect the likelihood of seeking help after traumas or other upsetting experiences; the level of emotion experienced; the level of isolation or social connection that occurs in relation to an event; attributions about who gets credit or blame for positive and negative events, respectively; the level of comfort or care received; and so on (Athey & Moody-Williams, 2003). Some subcultures are also more likely to engage in certain types of risky behaviors than others. Drinking, for example, is more common among Irish than Jewish subcultures. Drug use is heightened in gay, lesbian, bisexual, and transgender subcultures (Hughes & Eliason, 2002). Gambling is more common than drinking in some Asian cultures. Thus, both scientists and clinicians can benefit from the exploration of culture as an important class of proximal antecedents.

Personal and Family History

Observers might conceive of personal and family history as distal events; however, these events can also be proximal. For example, chronic mental illness—personal or familial—can represent both current and distal antecedents that affect addiction. All sorts of historical events can also affect the likelihood of addiction, including intergenerational trauma histories (such as those of African Americans and Native Americans) and community-wide historical events (such as the 9/11 terrorist attacks, which live on for many people in their day-to-day levels of vigilance and stress; Hudnall Stamm, Stamm, Stamm, & Higson-Smith, 2004). Such historical legacies can strongly influence how a person responds to proximal antecedents and can even affect their occurrence (e.g., people with a history of mental illness have increased trauma rates; Mueser, Rosenberg, Jankowski, Hamblen, & Descamps, 2004).

PROXIMAL ANTECEDENTS AND THE SYNDROME MODEL

The syndrome model, overall, provides a thoughtful conceptualization that integrates disparate threads

to organize a formal theory of addiction. It draws on gold-standard areas of medicine, such as diabetes and AIDS, which provide exemplars of syndromes that encompass diverse symptoms yet clearly have common physiological underpinnings. Shaffer et al. (in the Introduction to this handbook) also draw important distinctions that are often lost in the addiction field. The syndrome model provides important guidance on how common addiction concepts that appear in academic writing, clinical work, and popular culture are not sufficient to explain what actually causes addiction. Neuroadaptation, compulsion, negative consequences, the object of addiction itself, or loss of control fail to account fully for how addiction arises. Thus, key questions become all the more compelling: how does one make sense of the many different expressions of addiction (e.g., alcohol and drugs, behavioral addictions such as gambling, sex, shopping, and the Internet), how does one discern some common underlying mechanisms or patterns, and how does one identify addiction before it becomes fully manifest? As Shaffer et al. keenly point out, the *DSM-IV* definition of addictions is based on tautology: The person has an addiction if he or she shows or reports an addiction. The quest to predict who will become addicted, before evidence of addiction, is the Holy Grail that researchers are far from achieving but are moving toward via advances in neuroscience, genetics, and psychosocial studies. As the syndrome model demonstrates, such research has increasingly identified similar etiological patterns for different expressions of addiction. Pathological gambling and substance dependence likely have more in common than not, for example.

As part of this broad effort, inquiry into proximal antecedents offers an important domain for greater understanding of how addiction emerges. There is both compelling research and clinical evidence at this point to buttress the strong relationship between various types of proximal antecedents and the emergence of subsequent addictive behavior. In this chapter, I have described different types of proximal antecedents, along with contextual variables that play a role in increasing or decreasing the impact of such events. However, I must also address the larger question of how proximal antecedents fit

into the syndrome model. As the syndrome model matures, several considerations warrant further elaboration.

Proximal Is a Moving Target

How close in time must a proximal event be to subsequent addictive behavior? For example, a trauma could be hours, days, or months away from addictive behavior, yet still hold a clear causal relationship to it. Is there some way to identify a timeframe beyond which proximal events become distal? The term *proximal* must also be defined consistently across studies.

Some Antecedents Are Both Proximal and Distal

As noted earlier, mental illness in oneself or one's family can be both proximal and distal if the mental illness is diagnosed as both current and past. Thus, for example, major depression can be an important historical (distal) disorder that is associated with the development of addiction. It is also a recurring problem that can serve as a proximal event. In such cases, the distal and the proximal antecedents are not independent: The distal major depression influences how the current major depression is experienced and managed. Thus, proximal and distal events are intertwined and mutually affect each other over time. Some other mental illnesses, moreover, might not have discrete episodes the way major depression does. Dysthymia, schizophrenia, personality disorders, and other disorders are chronic and thus both distal and proximal in a continuous and synergetic fashion that probably influences the likelihood of addiction. Similarly, certain life circumstances, such as homelessness, poverty, discrimination, social isolation, or other factors, can be both distal and proximal continuous events.

What Is an Antecedent?

At the heart of the concept of proximal antecedents is the notion that one can define and measure them. Yet, broadly speaking, almost anything could represent proximal antecedents: In addition to external discrete events, proximal antecedents can include feeling states, physical experiences (e.g., hunger, pain, tiredness), beliefs, interactions with others,

and so on. Trying to conceptualize and identify antecedents is thus difficult. Moreover, they are sometimes parallel experiences: A feeling state can be experienced physically and cognitively. One alternative is to limit the notion of proximal antecedents solely to observable, discrete events such as traumas and clearly defined stressors. Yet this would appear to limit the development of the syndrome model framework, which seeks to be inclusive and comprehensive. Another definitional quandary is that people often define a proximal antecedent only in retrospect. To illustrate, one person can go through a divorce, and this circumstance might have no connection to addiction whatsoever; for another person, the divorce is a proximal antecedent to addiction. Thus, it appears to be not just the nature of an event but the relationship of the individual to an event that meets criteria as a proximal antecedent of addiction. To keep clear terminology, then, one must distinguish proximal events from proximal antecedents: The former are a much broader class of anything a person experiences within a certain time window; the latter are actually causally related to the development of addiction.

Causal Connections Between Proximal Antecedents and Addiction Can Be Challenging to Determine

Assuming there are legitimate ways to define and identify proximal antecedents, another concern is how to link them rigorously to addictive behavior. The simplest framework is that the proximal event is causally associated with subsequent addictive behavior. However, there are other possibilities: The proximal event could have no direct association with the emergence of addictive behavior; instead, some earlier distal influence might account for substance use. There could also be the infamous "third variable" (i.e., perhaps an unknown factor) that influences both the proximal event and the addiction. For example, perhaps a woman is assaulted and subsequently uses alcohol, but her use of alcohol is related not to the assault but instead to a friend's intense peer pressure. Clearly, most causal circumstances have multiple influences: To use this same example, both the assault and the peer pressure could have additively combined to influence the

woman's addictive behavior, and either influence alone might not have been sufficient to cause it.

Addictive Behavior Can Be a Proximal Event for Other Addictive Behavior

Risky or addictive behavior can cause other risky or addictive behavior. As the syndrome model suggests, addiction can change the risk matrix for other or revised expressions of addiction. For example, drinking can result in a drunk driving accident, which itself becomes the basis for further drinking (e.g., to cope with the trauma of the accident). Indeed, among emergency room assault victims, two thirds have been found positive for substance use on the basis of urinalysis (Zatzick et al., 2004). Substance abuse is also associated with increased rates of domestic violence (Fazzone, Holton, & Reed, 1997). Such data have indicated that substance use is associated with trauma, which in turn is associated with increased rates of substance use (Najavits, Weiss, & Shaw, 1997). Addictive behavior can also result in positive proximal antecedents for subsequent addictive behavior, such as when a gambler experiences a win, feels excitement (a proximal antecedent), and thus gambles more. Moreover, mere exposure to potentially addictive activities can increase subsequent use. For example, as gambling became legal in more states, more people gambled and ultimately, in sheer numbers (although not necessarily per capita or prevalence), more people experienced gambling addiction (Korn & Shaffer, 1999).

Valence of Proximal Antecedents Can Be Positive, Negative, or Both

It is tempting to try to categorize proximal antecedents as exclusively positive or negative. For example, a job promotion would generally be perceived as positive, whereas a trauma would generally be perceived as negative. However, no event is inherently and orthogonally positive or negative. A job promotion can be negative for a person who becomes very stressed or overwhelmed by the changes associated with new responsibilities, and conversely, a trauma can result in posttraumatic growth (i.e., positive meanings that develop, such as greater sense of purpose in life). Thus, as the syndrome model develops, it will be necessary to take a

sophisticated view toward proximal antecedents and the manifold influences they could have on the development of subsequent addictive behavior.

Impact of Proximal Antecedents Will Vary Depending on the Individual

As mentioned earlier, the syndrome model cogently clarifies that a substance or activity, in and of itself, cannot cause addiction or be addictive. Rather, the relationship of the individual to these objects or activities is what results in addiction. This truth also holds for proximal antecedents. The same event—such as a trauma—can be a proximal antecedent for addiction for one person yet not influence the emergence of addiction for another. Indeed, in community-wide disasters, many people experience the same event, yet there are innumerable different types and intensities of reaction to it. Some people develop posttraumatic stress disorder and addiction, whereas others escape unscathed or even become ennobled by the trauma. Thus, clinicians and researchers cannot focus solely on proximal antecedents; rather, they must examine the whole constellation of responses a person has in relation to these antecedents to best evaluate their influence. Studying people's differential responses to the same proximal event is essential and informative.

Treatment and Prevention Implications of Proximal Antecedents Are Unclear

One of the major challenges of public health and clinical work is that, even if one can determine that certain proximal antecedents heighten the tendency toward addiction for the aggregate, it is notoriously difficult to determine the likelihood of addiction emerging for an individual. This is a well-known problem in other areas in which prediction is the goal, such as the prediction of suicidal or violent behavior. There are known risk factors for these types of events on a population basis, but for any given individual, even a large number of risk factors might not permit the accurate prediction of dangerous behaviors. This also occurs with addiction: Some individuals whose profile would suggest a strong tendency toward addiction do not develop it, whereas others with low likelihood do. Thus, for the treatment provider, it can be difficult to interpret the

impact of proximal antecedents. If a patient experiences major stressors, should the provider simply assume increased vulnerability to addiction and thus increase the level of care or number of treatment sessions? Patients might be highly resilient and not need an increasing level of care; from a public health perspective, more and unnecessary care can waste resources and increase treatment costs. Alternatively, a high-functioning, seemingly happy person can appear to have no proximal antecedents likely to lead to addiction yet nonetheless be highly vulnerable to it. For example, a well-known phenomenon is the upper-middle-class woman who seemingly has it all yet secretly drinks alone at home, and no one, including health care professionals, notices her vulnerability (Gomberg & Nirenberg, 1993). From a prevention standpoint, it is even more difficult to determine how to assign limited resources when the goal is to prevent rather than treat addiction. Given that most people do not develop addictive disorders, new research is necessary to help researchers and clinicians learn how to identify proximal antecedents that effectively increase the targeted focus on those who are most in need of prevention efforts.

Number and Type of Proximal Antecedents Is Seemingly Limitless

Given the myriad number and type of proximal antecedents that can occur, the question arises as to what extent a formal theoretical model can accurately account for these in a meaningful way. There are ways to cluster different types of events and determine their relative impact on the development of addiction, but such categorizations require empirical study to determine their validity, efficacy, and impact. The breadth of proximal antecedents can be, in the end, both a strength and a weakness: on one hand, spurring researchers and clinicians to think broadly about the full range of potential influences that can affect an individual's addiction potential, and on the other hand, so broad as perhaps to become confusing or ill defined. Close and careful evaluation of proximal antecedents is an important goal for clinicians and researchers, and ultimately, greater exploration can help to refine the syndrome model in this area.

Sophisticated Modeling Is Needed

The relationship among proximal antecedents, distal events, and addictive behavior is likely to require both large datasets and sophisticated statistical modeling that can account for their complex, multilayered, interactive, and recursive pathways. There will also be a need to replicate such analyses with various populations because proximal antecedents can differentially affect different groups, such as criminal justice, people who are homeless, military or veterans, community-based treatment, and adolescents.

CONCLUSION

In sum, the syndrome model holds great promise to illuminate how addiction takes root and also how it can be overcome. As scientists advance this model and refine its conceptual base with more empirical evidence, additional research will be necessary to evaluate important questions about proximal antecedents. The syndrome model provides an important statement about what addiction is and, equally as important, what it is not. It is a timely contribution now that addiction has, more than ever before, entered the mainstream of the mental health field and public consciousness. A spotlight shines on the addiction field more now than in any prior era. Even the term *addiction* is relatively new and continues to evolve in meaning over time—a reminder of how far the field has come and how far it still needs to go. Proximal antecedents are just one part of this larger picture, and as the field of addiction studies progresses, researchers will attain greater understanding of these important influences. Thus far, proximal antecedents are among the least studied risk factors for addiction, but they hold much promise in their power as tipping points, both positive and negative.

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