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A Reciprocal Effects Model for Achieving and Maintaining Sobriety¹

A mechanism of behavior change that is strongly believed to help regulate the intake of alcohol and other drugs is the perceived costs and benefits of sobriety (Cunningham et al., 1997; Tate & Ellis, 1996), but it is not currently known whether thought precedes action or actions speak louder than words when it comes to sobriety. In the history of psychology, the connection between cognition and behavior formed the basis of many theoretical contests regarding whether thought led action or action led thought (e.g., Neisser, 1967; Skinner, 1953; Watson, 1913). In the therapeutic domain, many Behavior Therapists rejected the lengthy, somewhat scientifically suspect “talking therapies” (e.g., various forms of Psychoanalysis and Humanistic Therapy) and insisted that behavioral “conditioning” (both classical and operant) could more parsimoniously achieve the same or better outcomes. The position was later reversed with the advent of cognitive therapy; e.g., Aaron T. Beck’s cognitive theory of depression (Beck, 1967; Beck et al., 1979) that later multiplied into treatments for everything from schizophrenia (Kingdon & Turkington, 2004; Sensky, 2000) to substance abuse (Beck et al., 1993). Before the critical test regarding the precedence of cognition and/or behavior could be performed in the present study, care was taken to test aspects of the reliability of the psychometric measurement of the costs and benefits of sobriety (the Alcohol and Drugs Consequences Questionnaire: ADCQ) because even though it has proven to be internally consistent (α 's = 0.90+), the test is not normed with respect to any population and it is relatively untested within most populations (Donovan, 2004).

Reciprocal changes in thought and behavior have loomed large in our major theoretical explanations within psychology, but the discipline is now generating more integrative theoretical positions in which synchrony among mental and behavioral processes is postulated. Leon Festinger (1957) proposed a theory of cognitive dissonance to explain changes in attitude based on the incongruity of thoughts and actions - the easiest way to resolve the internal conflict is to simply adjust one’s attitudes to reflect what one has done. On the other hand, Albert Ellis (1957) in his formulation of Rational Emotive Therapy initially suggested that behavior change could be readily accomplished by simply acting “as if” one had accomplished a desired (esp., interpersonal) proficiency and claimed an individual

¹ Please note that there is an Internet version of this article containing additional tables and more detailed material on methodological issues: gestalttheory.net/gth/Lapp2011.html

would soon find themselves transformed; albeit, homework assignments are now a routine part of Rational Emotive *Behavior* Therapy. Taking the problem to a new level of complexity, Albert Bandura (1974, 1977, 1980, 1997) formulated a “unifying theory of behavior change” based on the notion of self-efficacy³ and self-referent thoughts that imply a reciprocal relationship between behavioral success, cognitions about one’s competence and the likelihood that an individual will persist long and hard enough in her/his efforts to succeed. The purpose of the present article is to examine the time-course of behavioral changes in substance use that are possibly the result of changes in motivated cognitions about continuing to drink alcohol/use drugs among a cohort of people who entered sober living houses.

Nowhere is the conflict between cognition and behavior as evident as in the observation of what actually happens after an individual engages in formal or informal efforts to remain sober or to otherwise control their intake of addictive substances. Lapses and relapses are common, so common in fact that they are an anticipated part of moving people toward a more sober existence (Denning, 2000, Marlatt & Gordon, 1985) and are most efficiently modeled by the nonlinear dynamic analyses of catastrophe theory (Witkiewitz & Marlatt, 2004, 2007) and other aspects of chaos theory (Lapp, 1996, 1998). When Litt et al. (2008) examined what transpires psychologically in three different kinds of treatment (Cognitive-Behavioral Therapy (CBT), Contingency Management (CM) and a combination of the two), they found changes in perceived self-efficacy for controlling substance use not just with CBT, but also with CM, a result that is “surprising” from a cognitive-behavioral perspective (Witkiewitz & Marlatt, 2008, p. 649). One way to account for the observed change in self-efficacy as a result of CM is to propose the existence of an intrinsic connection between cognition and behavior of the sort envisioned by Bandura in his unifying theory of behavior change.

Perceived Costs and Benefits and Behavior Change

Cognitive psychological research in the laboratory and applied settings has shown powerful effects of the manipulation of costs and benefits on the regulation of cognitively driven behavioral process for everything from moving the decision criterion for reporting the detection of faint signals (Swets, 1964; Green & Swets, 1966) to any decision involving potential risk, such as financial ones (Kahneman & Tversky, 1979). Utilitarian Decision Theory (Bernoulli, 1738; von Neumann & Morgenstern, 1944) and the more modern and psychological “Prospect Theory” (Kahneman & Tversky, 1979) suggests that individuals will try to minimize the perceived costs and maximize the perceived benefits whenever they must choose between response options under potentially risky circumstances. Prospect theory predicts that the selection of an option by individuals is not entirely rational and can potentially explain why the clustering of extreme fluctuations

in the stock market are highly correlated with extreme temperatures in New York City (Atanu, Maliel & Grecu, 2008). The present study looked at how changes in the perceived costs and benefits of remaining sober would influence alcohol and other drug use over time; then, turned the issue around to see whether or not there was anything additional to find with respect to behavior predicting changes in cognition over time.

Sober Living Houses

Sober Living Houses (SLHs) provide a physical, behavioral and social environment that is supportive of sobriety. Even though some residents may occasionally use addictive substances, it is against the rules at the house and residents who relapse are asked to leave for at least some period of time. In addition, most of the residents must work to maintain their share of the rent and all participate in shared activities, including making and consuming meals together – activities that are antithetical to prolonged bouts of substance use. Residents are also encouraged or required to participate in self-help groups such as Alcoholic or Narcotics Anonymous. From this perspective, it is a contingency management program replete with social modeling, vicarious and direct social reinforcement and the comforts and safety of a well maintained environment that could be negatively reinforcing by virtue of getting off the often dangerous streets (See: Polcin, In Press) and positively reinforcing by getting into a nurturing environment. Although SLHs are sometimes connected with therapeutic resources such as counseling, access to medical treatment and similar ancillary services, the unifying theme is simply living in a community of people who are also trying to attain and/or maintain sobriety.

Method

Programs

Three models of Sober Living Residences were studied, each with somewhat different levels of therapeutic intensity, available services and types of residents, but all seem to produce basically comparable outcomes for addiction severity and substance use (See: Polcin, Lapp, Korcha & Galloway, 2008). The *Clean and Sober Transitional Living* (CSTL) program operates outside of Sacramento, CA, and has two phases: (a) Curfews and mandatory 12 step meeting attendance for the first 30 to 90 days, and (b) a continued requirement to abide by house rules that are democratically established by the “Residents Congress” and abstain from alcohol and drugs ($n = 245$). The second program is operated by *Options Recovery Services* (ORS) in Berkeley, CA, and primarily serves indigent, homeless people who typically stay for 30 days in a nearby homeless shelter in preparation for the requirement that they have 30 days of abstinence before entering the house ($n = 55$). The third program was a more intensive *Residential Social Model* (RSM) recovery

program involving individual counseling, participation in a variety of groups as well as 12 step mutual support groups ($n = 23$). Although the latter program had more severe addiction indexes at baseline (probably due to the lack of a required 30 days of abstinence that was enforced for the other two programs), levels of addiction severity were comparable to other programs at 6, 12 and 18 months (See Polcin et al., 2008 for additional details).

Participants

The demographics of the participants are broken down by program type in Table 1. As can be seen, there was a significant age difference between ORS and the other two programs, $F(2, 320) = 7.22, p < 0.001$, though post hoc comparisons showed no difference between CSTL and RSM, both of which differed from ORS. The ethnic balance among the programs was also quite different with ORS being primarily White, while CSTL residents were mostly African American (non-White); virtually all (95%) residents of the RMS were White. Approximately half of the sample in each program were married or partnered and had at least a high school education. Most of the residents of ORS were men, while over 20% of the residents of the other two programs were women.

Characteristic	Program		
	ORS	CSTL	RSM
Age Mean (SD)	42.84 (8.97)	37.47 (10.09)	35.57 (12.49)
Education (% High School+)	45.5%	39.2%	43.5%
Race (%)*			
African American	61.8%	9.8%	0.0%
Asian	0.0%	2.0%	0.0%
Latino	1.8%	9.0%	0.0%
Native American	1.8%	3.3%	0.0%
Other/Mixed	5.5%	2.5%	4.3%
White	29.1%	73.4%	95.7%
Married/Partnered (%)	54.5%	49.8%	47.8%
Gender (% Men)*	94.5%	77.1%	78.3%

* $p < 0.01$

Table 1. Demographics of the Residents by Program

Psychometric Assessments and Instruments

Structured interviews were conducted at baseline, 6, 12 and 18 months to assess peak density of alcohol and other drug use during the preceding six months, as well as the perceived costs and benefits of sobriety which were measured by using the Alcohol and Drug Consequences Questionnaire (a standardized instrument developed by Gerstein et al., 1994), addiction severity for both alcohol and other drugs, confrontation about alcohol and other drug use, and drug and alcohol use by important people in the respondent's life. For our purposes, the analysis was limited to Costs and Benefits of sobriety and abstinence from alcohol and other drug use, so the written and quantitative descriptions of the psychometric instruments was confined to these two instruments.

The Alcohol and Drug Consequences Questionnaire (ADCQ; Cunningham et al., 1997) is a 29 item measure that assesses many of the motives that people have for continuing their alcohol and drug use (Costs; e.g., "I would be bored") and for alternatively, seeking sobriety (benefits; e.g., "I would be more active and alert"). Respondents rate each of these self-statements on a six point scale ranging from 0 ("Not Applicable") to 5 (Extremely Important"), a scale that is designed to capture varying degrees of importance.

Peak Density of alcohol and other drug use in the past 6 months was assessed using a measure described by Gerstein et al (1994) in which respondents report the highest number of days that they used substances during the month when they drank alcohol or used the highest amount of drugs. Thus, abstinence was defined as zero peak density and this was determined for both alcohol and other drug use.

Results

Technical details of the results are contained in the internet version of the present paper and contain an intricate discussion of how the mathematical properties of the measurements were incorporated into the analyses (See: gestalttheory.net/gth/Lapp2011.html).

Classical psychometric analyses, as well as unidimensional and multidimensional Item Response Theory (IRT) analyses supported the reliability of the ADCQ and the applicability of the cost and benefit scales for the sample (See Tables 2 & 3). Classical psychometric measurement of the internal consistency of the items with the rest of the items showed good overall consistency for benefits and costs at baseline. The corrected item-total correlation of each item with the sum of the other items showed that all but possibly one of the costs and all of the benefits belonged to their respective constructs (using a criterion of each item sharing at least 10% of its variance with the other items).

ADCQ Item	Corrected Item-Total Correlation	IRT Infit	Factor Loading	R ²
I will regain self-respect	0.72	0.69	0.89	0.79
I will feel better about myself	0.60	1.07	0.87	0.75
I will be more financially stable	0.66	0.93	0.86	0.75
I will accomplish more of the things I want to get done	0.59	0.95	0.81	0.66
I will live longer	0.62	0.87	0.79	0.63
I will be more active and alert	0.64	0.74	0.79	0.62
My health will improve	0.59	0.99	0.79	0.62
I will save more money	0.55		0.78	0.61
I will have more money to do other things with	0.64	0.96	0.77	0.60
I will have a better relationship with my family	0.46	1.45	0.74	0.55
I will be more in control of myself	0.48	1.39	0.73	0.53
I will have a better relationship with my friends	0.57	1.01	0.70	0.50
I will have fewer problems with my family	0.41	1.52	0.66	0.43
I will feel better physically	0.40	1.25	0.63	0.39
I will have fewer problems with friends	0.43	1.58	0.56	0.32

Table 2. Classical Psychometric Properties, IRT Infit and an *Ordered List of Benefits*

ADCQ Item	Corrected Item-Total Correlation	IRT Infit	Confirmatory Factor Loading or Ordered Categorical Item Responses	R ²
I will feel stressed out	0.71	0.69	0.84	0.70
I will feel bored	0.66	0.85	0.82	0.67
I will feel frustrated and anxious	0.65	0.87	0.81	0.66
I will be irritable	0.66	0.78	0.80	0.64
I will have difficulty having a good time	0.63	0.83	0.79	0.62
I will miss the taste	0.59	0.92	0.75	0.56
I will get depressed	0.60	1.03	0.75	0.56
I will have difficulty coping with my problems	0.59	1.14	0.74	0.55
I will feel withdrawal or craving	0.63	0.92	0.73	0.53
I will have too much time on my hands	0.57	1.07	0.73	0.53
I will miss the feeling of being high	0.58	0.93	0.70	0.49
I will have difficulty not drinking or using drugs	0.55	1.31	0.67	0.45
I will have difficulty relaxing	0.51	1.23	0.67	0.45
I will change a lifestyle I enjoy	0.34	1.53	0.49	0.24

Table 3. Ordered list of Costs

Item Response Theory analyses (See: gestalttheory.net/gth/Lapp2011.html) showed that the items of the ADCQ were highly reliable for the benefits and acceptable for the costs of being sober/cutting down on substance use. Furthermore, the person reliabilities were also adequate for the cost and benefit scales, though they were improved substantially by restricting the analysis to each of the groups individually, indicating that it was more group-related variability in the responses that lowered this measure of the applicability of the measures to the sample.

The Critical Test

To assess the potential causal influence of perceived costs and benefits on sobriety in relation to drugs and alcohol, the time-lagged paths from baseline to 6 months, from 6 months to 12 months and from 12 months to 18 months were estimated based on IRT derived scores (θ) for costs and benefits at each point in time. Although the model showed significant predictions of sobriety by costs and benefits from 6 months to 12 months, the overall fit of the model was not adequate. Once the time-lagged pathways from sobriety to costs and benefits were added to the model, the fit was excellent (See: gestalttheory.net/gth/Lapp2011.html).

Discussion

The reciprocal effects of cognition predicting behavior and behavior predicting cognition is important for theoretical and practical reasons that could potentially help clients strive more effectively to achieve and maintain the sober life. For example, if the client thinks s/he is going to be forever bored once s/he stops drinking alcohol and using drugs, it may not be very appealing to stop; however, if the individual knows that in all likelihood they will feel better about themselves over time and not suffer from withdrawal, boredom, depression and anxiety after somewhere between six and twelve months of living a comparatively sober life (attributable to a new way of life and the pursuit of new pleasurable activities), then it may make it easier to persevere long enough to win the battles with lapses and relapses (See: Maisto, Connors & Zywiak, 1996) that increase the client's "resilient sense of efficacy" (Bandura, 1993, p. 73) and help her/him bounce back from the challenges that are inherent in the nature of the addictions (e.g., heavy drinking in response to negative affective situations: Cunningham et al., 1995).

The present set of results support the idea that costs and benefits of sobriety, along with actual sobriety, met the temporal criterion for causal evidence regarding the proposed behavior change (See: Witkeiwitz & Marlatt, 2008). Sober living houses set the stage for these good changes to come about in an individual's life and can be understood from several theoretical positions as providing: (a) a predictable and safe environment, (b) camaraderie and friendship (Social Support) with other people who are also trying to limit or stop their use of substances (Social Modeling and Conformity), (c) unconditional positive regard that opens the door for personal exploration, (d) reduced exposure to cues that elicit urges and (e) responsibilities and activities that are incompatible with substance use.

Measurement Issues

Care was taken in the present study to look into the measurement properties of the ADCQ to contribute to the literature on the psychometrics of the instrument and to thereby obtain the best assessment of whether or not there is an interplay

of cognition and behavior in attaining and maintaining sobriety. As noted in previous research reports (e.g., Cunningham et al., 1997) and with respect to NIAAA recommendations on the potential usefulness of the scale, the classical psychometric property of using coefficient alpha as a measure of internal consistency has shown that the scale is highly reliable. One key issue that is relevant for most of the instruments we use is that responses collected using Likert-Style scales are not really continuous, as is implicitly assumed for most of the statistics traditionally used by the majority of psychologists. Rather, Likert-Style ratings are simply ordered-categorical raw data without the interval scale properties. This is a problem because most forms of factor analysis, Analysis of Variance, various forms of regression analysis and other techniques belonging to the general linear model (See: Bond & Fox, 2007; Embretson & Hershberger, 1999; Embretson & Reise, 2000; Jöreskog & Moustaki, 2001) make this assumption (See: Arnold, 1981).

Item-Response theory analysis showed that the scale was highly reliable with respect to items and it was appropriate for the sample. The test-retest analyses performed via structural equation modeling in which the ordered categorical nature of the responses was incorporated into the model also supported the reliability of the scale. Although there was some suggestion in the IRT analyses that a couple of items were on the border of acceptability, similar results have been considered to be adequate within the field of the addictions (e.g., Courvoisier & Etter, 2008) and so the items were retained in the present analysis for substantive reasons and for the sake of comparability of previously reported results. The IRT analyses employed by Courvoisier and Etter (2008) could be reasonably employed in further studies of the convergent and discriminant validity of the ADCQ; albeit, certainly the CFA approach employed by Napper et al (2008) might be even more appropriate as long as the ordered categorical properties of the ADCQ items and other scales (e.g., the Stages of Change Readiness and Treatment Eagerness Scale: SOCRATES; Miller & Toniga, 1996) are incorporated into the computations.

Decisional Balance and Prospect Theory: Potential Uses of Econometric Biases in Making Psychological Decisions

Psychological econometrics may provide a way of looking at costs and benefits of sobriety that is consonant with the Decisional Balance construct of the Transtheoretical (Stages of Change: Prochaska, 1994; Prochaska & DiClemente, 1983, 1984) Model of Substance Use Behavior Change (Migneault et al., 1999). The Decisional Balance notion was derived from Janis and Mann's (1968, 1977) conflict theory of rational decisions and it predicts the stages of change via four categories of losses and gains: (a) Utilitarian losses and gains for oneself, (b) Utilitarian losses and gains for others, (c) self-approval or self-disapproval and

(d) approval or disapproval from significant others (See: Guo et al., 2008, for an empirical account and evidence of the convergent and discriminant properties of the Decisional Balance Scale). The present results suggest that indeed the perceived importance of losses and gains for oneself predicts abstinence over time, but it appears to take somewhere of the order of 6 months to establish *new* patterns of thinking and behavior possibly due to the adjustment of psychological processes in conjunction with lifestyle.

Prospect theory (Kahneman & Tversky, 1979) is the next generation of psychological economic theory in which the notion that people do not act strictly in accordance with objective probabilities was introduced. For example the “Status Quo” bias regarding the tendency for people not to change unless the reasons are compelling might explain why the dramatic changes started to arise only after six months – it probably takes a few months to start to experience the compelling benefits of sobriety, to establish new relationships with other sober people and find new activities that become part of everyday life. The Prospect Theory prediction and empirically verifiable fact is that people tend to overweight low probability events when making critical decisions (Kahneman & Tversky, 1979) rather than strictly adhering to the predictions of Utility Decision Theory (Bernoulli, 1738; von Neumann & Morgenstern, 1944), which is purportedly why the United States and the World economies are now in a state of confusion and vulnerability (Bogle, 2008). This may be another reason why people did not change right away - they may have thought they would have to sacrifice the ability to control their emotional states when, in fact, they may have found themselves being less susceptible to negative mood states and more respectful of themselves as they experienced some success in remaining abstinent, due to the well documented decrease in negative affectivity that transpires when the real and ideal selves become more congruent (Higgins, 1987; Rogers, 1961; Rogers & Dymond, 1954).

It is interesting from this perspective that the sole predictor from an alternative coding of Marlatt’s taxonomy for time to heavy drinking detected by Stout, Longabaugh and Rubin (1996) was among clients who made an internal attribution for relapse. Such an attribution may: (a) reflect a discrepancy between the ideal of remaining abstinent and actually drinking a large amount, (b) thereby generate negative affect and serve as a high risk situation for continued drinking, and (c) consequently undermine perceived self-efficacy in controlling drinking (Marlatt & Gordon, 1985). In Stout et al.’s report, the survival curve looks like it begins to stabilize after somewhere between 120 and 180 days for people who tend not to attribute relapses to themselves, while it appears to keep dropping for clients who do have a depressogenic attributional style (Seligman et al., 1979) with respect to drinking (See: Collins & Lapp, 1991). Stout et al. also found that with the original coding that “testing personal control” was associated with the

highest frequency and level of drinking, so a decrease in perceived self-efficacy might be a potentially debilitating combination.

Another related possibility is that there is a delay in the resonant reciprocal influences between cognition and behavior due to the *Availability Heuristic* (Kahneman & Tversky, 1979) in which recent past experiences are weighted more heavily with respect to the full range of possibility. Econometric studies have shown that the so-called “Smart Money” effect in which investors are purportedly able to predict the *momentum of the return* on their investment is accounted for almost entirely by investors chasing funds that were recent winners (Handa & Tiwari, 2006; Sapp & Tiwari, 2004, 2006). It may take time to adjust one’s thinking, experiential and memory processes so that it is possible to think, remember and imagine things differently about oneself and one’s identity in relation to the world (See: Kihlstrom, Beer & Klein, 2002). On a more global theoretical note, Prospect Theory may be rooted in evolutionary processes which pressure organisms into making choices that optimize their ability to forage for precious resources (McDermott, Fowler, & Smirnov, 2008); a theoretical milestone that would thereby connect semi-rational (often biased) cognitive processes with behavioral mechanisms for survival to complete the gestalt of experience.

The Pleasure Principle

The current results make a lot of sense from the perspective of “Hedonic Psychology” (Kahneman, Diener & Schwarz, 1999) and can be applied in the therapeutic community by asking the question: “What constitutes ‘the good life?’” The definition of “the good life” may be something that evolved within the residents’ psychological experience during their stay in the sober living houses because the perceived costs of sobriety only undermined behavioral sobriety at baseline. However, substance use changed substantially from baseline to the six-month assessment and so did the perceived costs and benefits, but the psychological “turnabout” (Kirkpatrick, 1986) happened between 6 and 12 months. The cognitive mechanism behind this shift appears to manifest in the form of perceived costs and benefits of cutting back or stopping substance use, but the experience of success also appeared to have fed back into cognition to produce a continuing change in the perception of costs and benefits.

The Gestalt of Interplay Between the Individual and their Surroundings

Gestalt theory advances the idea that there is an interplay between the individual and the world, such that the individual perceives the world, thinks and acts in relation to his/her beliefs, achieves conscious insights as well as assembling a “silent organization” of preattentive processes, while at the same time his/her actions change the world which feeds back into perception (Koffka, 1935, pp.

383 -398). The present results could be explained as a resonance (Shepard, 1984) among perception, cognition and memory processes and between decisional and belief (e.g., self-efficacy), insight, experiential and executive processes that shape behavior and thereby alter the physical, social and economic surrounds along with possibly other dimensions of an individual's "life space" (See: Brackett & Mayer, 2006 – 2007; Lewin, 1943). In other words, the circumstances which define and are interpreted as "the good life" (See: Schwarz, Wänke, & Bless, 1994) may morph over time.

Metacognition and the Striving for Self-Actualization

It is worthwhile noticing that the benefits at the top of the ordered list (See Tables 1 & 2) refer to things like gaining self-respect and feeling better about oneself, something that is positive and self-actualizing in nature (See Maslow, 1967/1999; Seligman, 2002; Seligman, Parks, & Steen, T., 2006). At the bottom of the list were things like having fewer problems with friends and feeling better physically, items that tap the removal of something aversive rather than striving for something positive; i.e., the negatively reinforcing properties of substance use (Lapp, 1997). These positive motivations led people to change their alcohol and other drug consumption to lower levels. The primary costs, on the other hand, involved negative affective states of being stressed out, bored, frustrated, anxious and irritable, an observation that suggests issues involving mood and activity regulation – two important points of intervention - along with possible withdrawal symptoms that may dissipate over the course of months rather than days. One way to explain why decreased levels of use predicted an increase in perceived benefits is that people may have become more respectful of themselves and learned to regulate their moods and activities so that they experienced less negative affectivity and instead experienced a sense of inner peace, tranquility and balance.³

Summary and Conclusions

One of the great observations written by Ulrich Neisser (1967), the founder of Cognitive Psychology, is that even if we knew every detail of how a person solved a mental problem or all of the sequences of mental operations involved in performing a speeded test of skill, we would still need theories of motivation to explain why s/he did it, theories of personality to say why s/he liked or disliked the task, and theories of social interaction to understand competitive and cooperative processes that can boost or inhibit performance. The same idea applies to the present set of results in which both motivated cognitions regarding the perceived costs and benefits of sobriety and behavioral abstinence predicted each other over time in a way that implies causality. It is concluded that a reciprocal effects model best fits the observed covariance of cognitions and behaviors regarding cutting down or stopping substance use.

The present results suggest that there is an opportunity to start developing truly integrative theories of addiction and recovery that embrace the four psychological theories of relapse identified by Connors et al. (1996): (a) Cognitive-Behavioral, (b) Person-situation interaction, (c) Cognitive appraisal and (d) Self-efficacy and outcome expectations. Details on how these emergent perspectives come about through the interweaving of basic conditioning processes (e.g., classically condition cue reactivity and operant reinforcement schedules), automatic thinking, memory, attention, executive and insight process may give us a better understanding of how and why people change when they do.

A key observation is that something important appeared to have transpired between the 6th and 12th month of residing in a Sober Living House and future research that focuses on this time period could reveal if thought precedes action (Freud claimed that “Thought is action in rehearsal”), action precedes thought (ala Cognitive Dissonance Theory) or if they truly change simultaneously in a cascading resonance of co-occurring processes that form a gestalt. Perhaps all three patterns are present and may help to distinguish subtypes of residents in different stages of change (See: Carney & Kivlahan, 1995) and require different services and support to be maximally effective. Future studies could be conducted using the ADCQ in conjunction with the Stages Of Change Readiness and Treatment Eagerness Scale (SOCRATES: See Maisto et al., 1999, for the confirmation of its two factor structure) to test this hypothesis as part of the larger enterprise of building a integrative theories of addiction and recovery (e.g., the Relapse Prevention Model) that have practical implications for the progression of recovery over time.

Summary

One potential mechanism of change in drinking and drug use is the balance between the perceived costs and benefits of sobriety; though the ability to reliably measure these perceptions has been called into question and the direction of possible causality between cognition and behavior has not been determined. Item-Response Characteristics and test-retest reliability of the Alcohol and Drug Consequences Questionnaire (ADCQ) were examined to determine its reliability and applicability with a sample of people in recovery who resided in sober living houses. The temporal relationship between the proposed change mechanism and the hypothesized outcome was used as a criterion of possible causality in an attempt to: (a) determine if there is an association between perceived costs and benefits with abstinence for people in recovery and (b) ascertain the approximate timing and direction of the relationship. The results suggested that the ADCQ is reliable and applicable for assessing the perceived costs and benefits of sobriety for people in recovery. A reciprocal effects model was supported in which the state of cognitive-behavioral sobriety at 6 months predicted cognitive-behavioral sobriety at 12 months.

Keywords: Gestalt, sobriety, structural equation modeling, reciprocal effects, costs, benefits, cognitive, ADCQ, thought and action.

Zusammenfassung²

Ein möglicher Mechanismus für Änderungen im Alkohol- und Drogenkonsum ist das Gleichgewicht zwischen den wahrgenommenen Kosten und Nutzen der Nüchternheit. Die Fähigkeit der zuverlässigen Messung dieser Wahrnehmungen wurde jedoch in Frage gestellt und die Richtung der Kausalität zwischen Kognition und Verhalten wurde nicht ermittelt. Item-Response Merkmale und Test-Retest-Zuverlässigkeit der Alkohol- und Drogenkonsequenzen Umfrage (ADCQ) wurden untersucht, um deren Zuverlässigkeit und Anwendbarkeit bei einer Stichprobe von Menschen in der Rehabilitation, die in einem alkohol- und drogenfreien Umfeld wohnen, zu bestimmen. Der zeitliche Zusammenhang zwischen dem vorgeschlagenen Änderungsmechanismus und dem hypothetischen Ergebnis wurde als Kriterium der Kausalität verwendet: (a) um festzustellen, ob es einen Zusammenhang zwischen den wahrgenommenen Kosten und Nutzen mit Abstinenz für Menschen in der Rehabilitation gibt und (b) um sich des ungefähren Zeitpunktes und der Richtung der Beziehung zu vergewissern. Die Ergebnisse lassen vermuten, dass die ADCQ zuverlässig und zutreffend für die Beurteilung der wahrgenommenen Kosten und Nutzen der Nüchternheit für Menschen in der Rehabilitation ist. Ein gegenseitiges Beeinflussungsmodell wurde bestätigt, in dem die kognitiv-verhaltensmäßige Nüchternheit nach 6 Monaten die kognitiv-verhaltensmäßige Nüchternheit nach 12 Monaten vorraussagt.

Schlüsselwörter: Gestalt, Nüchternheit, strukturelles Gleichungsmodell, Wechselwirkung, Kosten, Nutzen, kognitiv, ADCQ, Gedanken und Handlungen.

Notes

1. Supported by NIAAA grant R01AA014030
2. Self-Efficacy is the belief that one can accomplish a goal that usually requires some amount of effort. The theory predicts that by accomplishing challenging goals, a resilient sense of self efficacy will be achieved that will make subsequent efforts more diligent and thereby increase the probability of future success.

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