Craving Notes

From G. Alan Marlatt (University of Washington, Seattle)

Craving is a desirable term. I agree with Kozlowski & Wilkinson[1] that craving is an emotionally charged word. It seems to capture the essence of addiction in terms of its irresistible, compulsive, and anticipatory qualities. Craving packs more of a punch than its milder linguistic counterparts such as preference, need, want, or desire. Craving has a strong appetitive quality, and is often used to describe intense appetities such as hunger, thirst, or lust. The sense here is that craving denotes longing or a desire for gratification of an intense appetite. The association of craving with specific appetites is reflected in the use of such phrases as craving for sweets, craving for sexual gratification, etc. It is often assumed on this basis that craving arises from an endogenous physiological need or 'appetite' (e.g. craving for salt), deriving from some biochemical deficiency or imbalance. It is but a short leap to conclude that an alcoholic who 'craves' alcohol is suffering from a metabolic disease associated with an underlying 'tissue need' for alcohol.[2] From the disease perspective, craving has a somatic source, and is often defined both as a symptom of an endogenous 'addictive disease' and as a physiological precursor of relapse.

The identification of craving with powerful biological appetities is consistent with the notion held by many in the addictions field that craving is synonymous with physical withdrawal. As noted in Kozlowski & Wilkinson's review, many investigators define craving as similar or identical to the symptoms of withdrawal, a concept that dates back to the concept of 'physical craving' outlined by the 1955 WHO Expert Committee report.[3] Extensions of this view have been proposed by other investigators (e.g. Seigel, 1979; Solomon, 1977; Ludwig & Wikler, 1974),[4-6] who have suggested that craving may be elicited by exposure to conditioned stimuli or cues that previously were associated with withdrawal or 'abstinence agony'. Craving in the form of conditioned withdrawal has been posited as a determinant of relapse by these theorists. From this perspective, craving is associated with a state of unpleasant physical symptoms, the dysphoric pain of withdrawal. My earlier writings[7] reflected this consensus: "... it would be more accurate to speak of craving as a strong desire for the alleviation of unpleasant withdrawal symptoms" (Marlatt, 1978, p. 289).

There are problems with equating craving with the dysphoria of withdrawal. Not all craving experiences are associated with physical withdrawal. The pregnant mother who craves dill pickles and ice cream is not suffering from withdrawal. Users of cocaine or marijuana may report craving for these substances even when physical withdrawal symptoms are minimal or absent. Some cravings, especially those in the sexual domain, have been described as pleasurable (as in the 'eager anticipation' of sexual foreplay). To paraphrase Kozlowski & Wilkinson: "Although all withdrawal elicits craving, not all craving is based on withdrawal." Since it seems clear that it is possible to experience craving *without* withdrawal, the two terms cannot be used interchangeably. The experience of pain is not the same as craving for something to relieve the pain, even though withdrawal often gives rise to craving.

In common usage, craving is often assumed to be the opposite of aversion. Whereas craving refers to an appetitive motivational state associated with a strong desire for an expected positive outcome, aversion usually refers to a dysphoric state associated with a desire to escape from or avoid an ongoing or expected negative outcome. The fact that craving increases with aversive withdrawal does not mean that they are the same entity. The *anticipation of pleasurable relief*, the subjective heart of craving, is increased by the experience of withdrawal (the more dysphoric the withdrawal, the greater the craving for pleasurable relief), but withdrawal is not a necessary condition for craving to occur. Craving is anticipatory. In addition to an affective-motivational component, there also is a cognitive-informational component, in that the individual 'knows' what target activity or substance will yield satisfaction. The positive-affect component of craving ('desire') may be elicited by classically conditioned stimuli that have been paired with pleasurable consequences in the past. Elicited by such conditioned stimuli, craving could be considered a conditioned appetitive response, much like the conditioned salivary response in anticipation of food observed in Pavlov's dogs.[8] For the addicted user, drug-related cues probably elicit both craving for the euphoric effects and aversion for the dysphoric effects—a 'mixed-signal' that may elicit an approach-avoidance con flict in response to the same drug cues.

In more recent writings,[9] I defined craving as "a subjective state that is mediated by the incentive properties of positive outcome expectancies. In other words, craving is a motivational state associated with a strong desire for an expected positive outcome" (Marlatt & Gordon, 1985, p. 138). Along

these lines, I attempted to make a distinction between craving and urges. Although the two terms are often used interchangeably, it is possible to conceptualize *craving* as a motivational state (often in response to external CS cues), and to define an *urge* as a behavioral intention. "Craving is equated with the subjective desire for the effects of a drug, whereas urges represent behavioral intentions to engage in a specific consummatory behavior (e.g. a sudden urge to smoke in response to craving)" (Marlatt & Gordon, 1985, p. 138). By making this distinction, we are able to break down the sequence of events leading to the consummatory response into a series of stimulus-response connections: an external CS (e.g. sight of a pack of cigarettes for a deprived smoker) elicits a craving response (CR), that then gives rise to an urge (stimulus or intention to smoke), that may or may not be followed by the consummatory response (smoking) and its attendant reinforcing stimuli. By breaking down the links in the chain, clients can be taught that (a) Craving and urges typically arise in response to external cues and not from an endogenous disease state; and (b) Although cravings and urges arise automatically as conditioned responses to certain cues, it is not necessary to 'give in' to the urge by engaging in the consummatory response. The craving response will diminish in intensity if it is not reinforced by stimuli associated with the consummatory response. Behavioral treatment programs for addiction problems that utilize cue exposure and response prevention (e.g. Hodgson & Rankin, 1982; Cooney *et al.*, 1983) are based on the premise that craving can be extinguished by exposing the client to drug cues while simultaneously preventing the consummatory response.

By emphasizing the anticipatory, expectant quality of craving, we are moving the definition away from its physiological or somatic roots. To carry this to its extreme would be to redefine craving purely as a psychological phenomenon, more an addiction of the mind than of the body. Craving, based on this perspective, could be considered as a form of psychological attachment, based on the individual's cognitive capacities to anticipate, expect, and desire the effects of a given activity or substance that has yet to occur. According to Eastern schools of thought, particularly Buddhism, craving and aversion are the opposite sides of the same mental coin—the ego's desire for pleasure and/or the avoidance of pain. Craving is the 'grasping' quality of the mind as it attempts to pursue its attachments. Craving, for the Buddhist, is at the root of all human suffering, an ego-based attachment that fuels the unquenchable thirst for pleasure. Only by first recognizing this 'Noble Truth' can we begin to enlighten ourselves from the burdens and fetters of addiction. Since Eastern traditions such as Buddhism have defined craving as a key concept in the psychology of attachment for over 2500 years, it seems presumptuous for contemporary theorists to reject this desirable term from the lexicon of addiction.

Acknowledgements

This work was supported in part by grant AA0559104 from the National Institute on Alcohol Abuse and Alcoholism to G. Alan Marlatt.

G. Alan Marlatt,
Department of Psychology, NI-25,
University of Washington,
Seattle,
Washington 98195, U.S.A.

1. Kozlowski, L. T. & Wilkinson, D. A. (1987) Use and misuse of the concept of craving by alcohol, tobacco, and drug researchers, *British Journal of Addiction*, 82, pp. 31–36 (this issue).
2. Jellinek, E. M. (1960) *The Disease Concept of Alcoholism* (New Haven, Hillhouse Press).
3. WHO Expert Committees on Mental Health and on Alcohol. (1955) The 'craving' for alcohol, *Quarterly Journal of Studies on Alcohol*, 16, pp. 33–66.
4. Siegel, S. (1979) The role of conditioning in drug tolerance and addiction, in: J. D. Keehen (Ed.) *Psychopathology in Animals: Research and Treatment Implications* (New York, Academic Press).
5. Solomon, R. L. (1977) An opponent-process theory of acquired motivation: IV. The affective dynamics of addiction, in: J. Maseer & M. E. P. Seligman (Eds) *Psychopathology: Experimental Models* (W. H. Freeman, San Francisco).
6. Ludwig, A. M. & Wikler, A. (1974) 'Craving' and relapse to drink, *Quarterly Journal of Studies on Alcohol*, 35, pp. 108–130.
7. Marlatt, G. A. (1978) Craving for alcohol, loss of control, and relapse: A cognitive-behavioral analysis, in: P. E. Nathan, G. A. Marlatt & T. Loberg (Eds) *Alcoholism: New Directions in Behavioral Research and Treatment* (New York, Plenum).
8. Ludwig, A. M. (1986) Pavlov's 'bells' and alcohol craving, *Addictive Behaviors*, 11, pp. 87–91.
9. Marlatt, G. A. & Gordon, J. R. (Eds) (1985) *Relapse Prevention* (New York, Guilford Press).
10. Hodgson, R. J. & Rankin, H. (1982) Cue exposure and relapse prevention, in: W. M. Hay & P. E. Nathan (Eds) *Clinical Case Studies in the Behavioral Treatment of Alcoholism* (New York, Plenum).

11. COONEY, N. L., BAKER, L. & POMERLEAU, O. F. (1983) Cue exposure for relapse prevention in alcohol treatment, in: R. J. MCMAHON & K. D. CRAIG (Eds) *Advances in Clinical Behavior Therapy* (New York, Brunner/Mazel).

Is there a Better Word than 'Craving'?

From Tim Stockwell (Community Alcohol Team, Exeter)

Those readers of the *BJA* familiar with the principles of assertiveness training have doubtless encountered the word 'fogging'.[1] Yes, 'fogging' is a technique for coping with criticism and involves accepting there is some truth in your opponent's argument while still maintaining the validity of your original position. It is a useful ploy to fall back on when, for example, talking to policemen.

After reading and re-reading Kozlowski & Wilkinson's brilliantly clear and entertaining essay on the concept of craving in alcohol, tobacco and drug research, I am unsure whether to merely 'fog'—or just capitulate! These authors set their sights on the Humpty-Dumpty's of addiction research who attempt to make words behave themselves and mean what they want them to. The word they are concerned with is 'craving' itself which they complain has been applied loosely to mild and moderate urges for drug use—instead of being reserved only for the severest of such urges.

The first offenders to be lined up, alas were Howard Rankin, Ray Hodgson and myself who are accused of trying to make 'craving' behave like the word 'fear' in a paper entitled 'The concept of craving and its measurement'.[2] Well, I suppose we did! Just as 'fear' can range in degree from slight to out-and-out terror in its normal usage so we insisted that it is meaningful to talk of 'low craving' and 'high craving'. Similarly, just as behavioural, physiological and subjective indicators of fearfulness have been shown to be highly concordant in extreme clinical manifestations of fearfulness[3] so we attempted to show do measures of 'craving' in the severely alcohol dependent drinker. We found particularly strong correlations between subjective ratings of 'desire to drink' and a behavioural measure 'speed of drinking' in three situations:

(i) Three hours after a large priming dose of alcohol following a period of abstinence.[4]

(ii) One hour after a small priming dose of alcohol—whether disguised or otherwise.[5]

(iii) Following 3 h of abstention interrupting an otherwise heavy and dependent drinking pattern.[2]

There were also some significant correlations involving such physiological measures as pulse-rate and hand tremor.[2,4,5] We chose to label the whole lot—the subjective desire, the tremors, the rapid drinking—as 'craving'. Flying, apparently, in the face of the world's best English dictionaries, we also required that this construct 'craving' could vary in intensity. I think it is at this point Kozlowski & Wilkinson pull the trigger on us and, to my only regret, overlook the potentially useful implications of these experiments.

At the end of their paper, Kozlowski & Wilkinson ponder whether they are merely discussing a 'semantic quibble' or an urgent matter for 'consumer protection'. Are we, and other researchers they cite, guilty of "luring the consumer into an article on the promise of some news about 'craving', but, alas, having in stock only small effects on weak desires to use a drug"?

Leaving aside the semantic quibble, in our defence I would like to cite an example of the strength of the phenomenon we were able to produce in these studies. One of our subjects, after consuming a priming dose of whisky, experienced such a strong urge to continue drinking that not only did his whole body shake, but his pulse-rate increased from 100 to 180 in about 2 minutes and he was unable to resist drinking further available alcohol. As with obsessional hand-washers who are undergoing response-prevention and cue exposure treatment,[6] the severely dependent drinker attempting to resist further drinking after a priming dose may experience physical and psychological distress. Initially, this may last for several hours following a treatment session. As with obsessionals, however, this distress or 'craving' habituates with repeated success in resisting the urge to drink.[7,8] Thus, rather than giving news only of 'negligible clinical or scientific interest', the clinical applications of our experimental work arguably offer a potent therapeutic technique for reversing or unlearning dependence upon alcohol.

The semantic issue at stake is similar to the question of whether the alcohol dependence 'syndrome' concept of Edwards[9] is, despite all protestations, really just a disease model of alcoholism.[10] Edwards describes a *qualitative* change in the cues triggering drinking behaviour as dependence upon alcohol increases in severity—namely cues to do with the psychophysiological signs of an incipient alcohol withdrawal state.[9] Similarly, we have described a qualitative change in 'urges' or 'desires' for alcohol as they increase in intensity and are