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Addictive Behaviors



Does “craving” carve nature at the joints? Absence of a synonym for craving in many languages

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ABSTRACT

Introduction: Craving is a term commonly used by North American lay people, and is also used as an important category in psychological and addiction research. However, difficulties in defining craving suggest that it may not be a natural category.

Methods: Assuming that lexicalization of a concept is an indicator of its importance and/or universality, the presence of synonyms for craving is examined in a range of natural languages, using both dictionaries and native speaker informants. Related words, such as “love,” “like,” “urge,” “desire,” “adore” and “addiction” are also explored in 20 languages, in terms of meaning and the domains of life to which these words are applied. **Results:** Based on automated translations, 64% of 25 languages have a craving synonym, and based on native speaker, only 17% of 20 languages lexicalize craving; when there is a synonym, it seems to mean a desire for a potential ingestant or a drug, that is, it is a desire restricted to certain domains of activity.

Discussion: The concept of “craving” appears to be limited in its importance and relevance in languages and cultures outside of English and North America. This finding has important implications for the understanding of “craving” as a natural category in the study of drug and other addictions. A similar though less extensive lack of synonyms for “addiction” is also reported.

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1. Introduction

A craving is an “urgent desire, longing, [or] yearning.”¹ To crave is to want something with such a strong sense of urgency that it is difficult to keep thoughts focused on anything other than the object of the craving. An individual in the midst of a craving episode will go out of his or her way to obtain that which is craved.

The use of the word “craving” in the English language dates back to at least the 1300s. Its original meaning was an “accusation [or] persecution,” or an “earnest or urgent asking, begging,” but the word has been used more specifically to refer to intense desires or urges since the early 1600s (Simpson & Weiner, 1989). The etymology of “craving” is not clear, though it is generally assumed that it is derived from the Old Icelandic or Norse word “krefja,” and in turn the Old English word “craflan” and Middle English term “craven,” meaning “to beg” or “to demand” (Various, 2000, 2007).

The word “craving” is relatively common, ranked at 21,998 in the list of 86,800 most frequently used words in British English.² Related words, such as “want” (rank 151), “need” (158), “like/liking” (67 and 9584), “love” (384), “desire” (1869), “urge” (5720), “addiction”

(10,307), and “compulsion” (12,627) tend to be used somewhat more frequently. “Craving” is also a rather specific term, now used almost exclusively in reference to strong urges. Virtually all targets of craving are potential ingestants, with the exception of drugs administered by injection (which could of course be considered just another way of “ingesting”). In spite of a narrowing of the use of the word over time, as of now there is still no clear, agreed-upon definition of “craving” in English (Drummond, 2001), and the use of the word in English-language scholarly papers varies widely. In the context of drug addiction, “craving” has been described as “intensely wanting” (Robinson & Berridge, 1993), as a “profound desire” (Childress et al., 1999), or simply as “a subjective state associated with drug addiction,” with poorly understood characteristics and determinants (Killen & Fortman, 1997). Of note, many definitions of food and drug cravings are quite similar linguistically; in addition, there is evidence for common neural pathways (Pelchat, 2002).

Craving is a term of major importance in research on addiction, which by some definitions includes tolerance, withdrawal, craving, and lack of control (Rozin & Stoess, 1993). Interestingly, if one weighs each of these attributes equally, cigarettes and chocolate emerge as the most common addictions among Americans (Rozin & Stoess, 1993). Much like cravings for drugs, a food craving has been described as “a desire so strong that an individual will go out of his or her way to satisfy it” (Rozin, Levine, & Stoess, 1991), or “an intense, periodic motivation aimed at gaining the craved substance” (Bruinsma & Taren, 1999). Very common and largely benign, cravings for specific

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¹ The Oxford English Dictionary/OED online, 2nd ed., <http://proxy.library.upenn.edu:2192/cgi/entry/50053387>, retrieved 01-15-08.

² WordCount, <http://wordcount.org/>, retrieved 08-02-08.

foods are generally not considered instances of true addictive behaviors (Rogers & Smit, 2000). According to one estimate, in the United States (U.S.) food cravings occur in 94% of female and 75% of male undergraduate students (Zellner, Garriga-Trillo, Rohm, Centeno & Parker, 1999). Prevalence of food cravings in Canada has been shown to parallel that in the U.S., with 97% of women and 68% of men in a sample of Canadian undergraduate students reporting having experienced any food cravings (Weingarten & Elston, 1990). A survey of 18 to 45 year-old women in New Zealand, on the other hand, found only 58% had experienced any food cravings (Gendall, Joyce & Sullivan, 1997). This suggests varying actual prevalence rates of food cravings, and/or variations in how they are defined, in Anglophone countries, with the highest incidence occurring in North America.

Chocolate is the most commonly craved food in the U.S. (Rozin et al., 1991), and has been studied in some detail. Amongst American undergraduates 91% of women have experienced any chocolate craving, compared to only 59% of men (Osman & Sobal, 2006). Regular chocolate cravings were reported by 45% of U.S. undergraduate women and 17% of American undergraduate men (Zellner et al., 1999). These figures suggest high prevalence among women, and significant gender differences in the occurrence of chocolate craving in the U.S.

Research on food cravings in non-English speaking countries has been minimal. A survey of Spanish college students found that 89% of women and 86% of men experience food cravings (Zellner et al., 1999), pointing to a high overall incidence, but a striking absence of the gender differences in craving prevalence commonly observed in North American countries. Chocolate and sweet cravings, while very common in the U.S., appear to be essentially absent in non-English speaking countries. Egyptian respondents, queried in Egyptian, were much less likely to indicate cravings for sweet as opposed to savory foods, even though both are equally readily available; only 1% of young Egyptian men and 6% of young Egyptian women reported cravings for chocolate (Parker, Kamel & Zellner, 2003). On the other hand, in Spain 29% of undergraduate women reported regular chocolate cravings, but 22% of Spanish undergraduate men did the same (Zellner et al., 1999). In Japan, women indicated rice as their most craved food (Komatsu, 2008), exemplifying the influence of culinary tradition on the perceived desirability of foods.

Differences in the types of food cravings reported, overall chocolate craving prevalence, and the absence in other countries of the gender differences in craving that are characteristic of the U.S. are findings that have yet to be addressed in models of food cravings. Currently, these models frequently attribute craving to physiological mechanisms and cannot explain the wide variation in chocolate and other food cravings found in cross-cultural studies. Furthermore, in many instances authors of these cross-cultural studies cite difficulties translating the term “craving” from English to the language of interest (Parker et al., 2003). In the apparent absence of precise synonyms they often have to resort to the use of a phrase to try and describe the phenomenon of craving to subjects in non-English speaking countries (Parker et al., 2003; Cepeda-Benito et al., 2000).

Based on the puzzling findings of varying prevalence rates of craving, and the methodological difficulties in studies involving translated materials one can entertain the possibility that craving does not describe a natural category. The implications of the hypothesized absence of lexicalization of a common English term in other languages – including its effects on research findings – so far has received little attention, even though it has clear influences on determining in how far “craving” is a natural, important and universal category of life within and outside of the U.S.

The idea that one feature of important and legitimate concepts is that they are widely lexicalized has been proposed previously, for example in Wierzbicka's (Wierzbicka, 1999) writing on “emotions” versus “feelings,” and the way in which terms from each category are

expressed in different languages. Her analysis casts some doubt on the validity of the category suggested by the word “emotion” (Wierzbicka, 1999). Of course there are other criteria besides lexicalization to establish validity, but clearly one should be skeptical about the universality and naturalness of a category that is lexicalized in relatively few languages.

According to Wierzbicka (Gendall et al., 1997), many common psychologically relevant words, such as “want” or “feeling” are likely to be universally lexicalized. However, there are legitimate categories of life or in psychology that do not lexicalize in many languages, including English. For example, unlike Hindi (“samdhi/samdhan”) or Yiddish (“mekhutanim”), English does not lexicalize the relationship between a person and his or her daughter- or son-in-law's parents. Similarly, English does not lexicalize one's pride in the success of one's children or other close individuals (unlike Yiddish “naches”). Also, while we know in psychology that there is a fundamental difference between “flavor” (the mixture of oral and of olfactory sensations) and “taste” (the output of oral taste buds only), many languages do not make this distinction (Rozin, 1982). So exceptions to the widespread lexicalization of universal and/or natural concepts exist, though they may be quite rare.

The degree of lexicalization of any term probably provides an indication about important aspects of life in a given culture. Hindi and Jewish families traditionally have complex relationships with their children's in-laws, which encourages descriptive words that may not be “culturally relevant” in other countries. Thus, the extent of their lexicalization in various languages should correlate highly with the importance of certain ideas.

It is our sense that the English word “craving” refers to periodic strong desires, but more specifically than that, is restricted in its use to potential ingestants or injected drugs. In other words, it singles out a set of substances or activities subject to strong desires, and lexicalizes this subset. It is not at all clear that this subset has any unique psychological or physiological properties.

We here postulate that craving is a culture-specific and culture-bound phenomenon, principally characteristic of the U.S. or North America. We test this hypothesis by assessing the degree of lexicalization of “craving” in a wide range of languages in two ways. First, we look up dictionary synonyms for the English word “craving” and note if the back translation of these words refers back to “craving.” Second, we discuss the existence of a synonym for “craving” with native speakers of non-English languages.

2. Study 1

2.1. Methods

We selected 28 different languages to represent a range of linguistic origins, most of the major groups of languages in the world, and languages spoken by the great majority of human beings (Table 1), in part based on languages considered in a previous study employing similar methods (Rozin, Berman & Royzman, 2009).

There were no English-target-language dictionaries available online for three of the languages selected (Malayam, Oriya, and Sinhalese). For each of the remaining 25 languages we located an online dictionary (via a Google search for “English Amharic Dictionary,” etc.) in which we could look up target words in English, and find their equivalent in the language in question. In cases where the first dictionary generated by the search did not provide the opportunity for back-translation into English we then went to the next dictionary and so on. We always took the first word offered as a translation, unless there were two or more words of equal status, in which case we considered several translations for that language. We then back-translated all the words suggested as initial synonyms into English, using the reverse search mechanism in the same dictionary.

Table 1
List of languages used in studies 1 and 2.

Study 1 (Dictionaries)	Study 2 (Native Speakers)
Amharic	Albanian
Bulgarian	Bulgarian
Cantonese	Bengali
Czech	Cantonese
Danish	French (×3)
Dutch	German
Finnish	Greek
French	Hindi
German	Japanese
Greek	Korean (×3)
Gujarati	Mandarin
Hebrew	Nepali
Italian	Tagalog/Filipino
Japanese	Polish
Latin	Portuguese (×2)
Mandarin	Romanian
Polish	Russian (×2)
Portuguese	Spanish (×2)
Russian	Tamil
Spanish	Vietnamese
Tagalog/Filipino	
Thai	
Turkish	
Uzbek	
Vietnamese	

The target word for translation was “craving.” In addition we translated three “control” words, including “addiction,” chosen because of the similarity of context with craving, “desire,” chosen because of the similarity of meaning with “craving,” and “hope” as a control word comparable in type (i.e. designating an internal, affective state), but unrelated in meaning. The percent of languages which offered translations of the English terms that in turn yielded the original word anywhere in the back-translation was calculated. For example, entering “craving” into an English–French online dictionary yielded one word – “soif” – as a translation. Back-translating “soif” generated “appetite (for something),” which indicates an unsuccessful back-translation (because “craving” was not part of the back-translation). The English–Spanish Dictionary yielded three equivalent translations: “antojo” (back-translation “whim, craving”), “anhelo” (“longing, desire”), and “ansias” (“yearning, longing”), or a successful back-translation.

2.2. Results

Six dictionaries did not generate any translation for “craving” (Amharic, Danish, Latin, Tagalog, Turkish, and Uzbek) and “addiction” (Danish, Finnish, Latin, Tagalog, Thai, and Uzbek); three did not yield translations for the term “hope” (Cantonese, Latin and Tagalog). All offered translations for “desire.” The absence of some or all of these translations could of course be a function of a limitation of the particular online dictionary and should be interpreted cautiously. We are less interested in absolute findings in regards to the existence of translations of these words than we are in relative differences between the four words assessed.

Across the 25 languages, 64% of the dictionaries included the term “craving” in the back-translations generated. In the case of “addiction” the rate was 68%. “Hope” and “desire” generated rates of 88% and 96%, respectively (Fig. 1). A chi-square comparing the four groups was significant ($\chi^2 = 10.79$, $p = 0.01$), as was a chi-square test comparing the rates of back-translations for “craving” versus the three control words combined into one group of “non-craving” terms ($\chi^2 = 4.52$, $p = 0.05$).

2.3. Discussion

Back-translation rates generated by online dictionaries were taken as an indicator of the degree to which initial translations offered truly

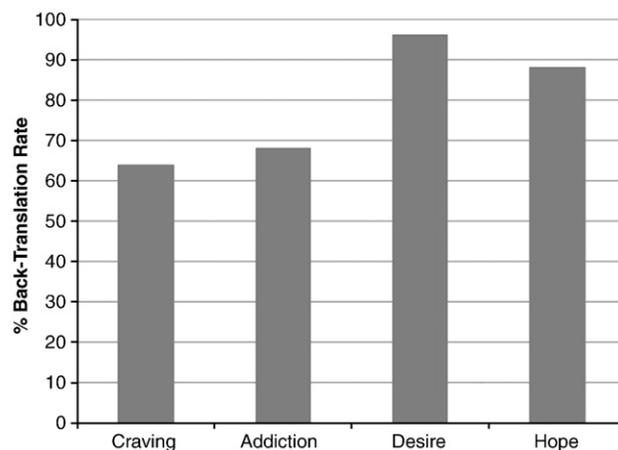


Fig. 1. % back-translation rate obtained for each of four words using electronic dictionaries (Study 1).

corresponded to the meaning of the target words. It was assumed that the more equivalent in meaning the initial translation, the more likely it would be that the original term would be generated through back-translation. It is demonstrated here that “craving” yielded a notably lower (by 24 to 32%) back-translation rate than two of the control terms, “desire” and “hope.” This then suggests that the translations of “craving” offered initially were somehow inadequate at capturing the true meaning of the word in the other language. The estimate of lexicalization of craving in back translations is no doubt inflated, because multiple words are offered in the back translations, and forward–back translation checks are likely applied when composing two-language dictionaries. Of note, “addiction” yielded similarly low back-translation rates as “craving,” which is consistent with the use of the two terms in very similar contexts.

3. Study 2

In assessing the lexicalization of “craving” we felt it was important to not only rely on automated translations, but to also interview native speakers of a range of foreign languages who are familiar with their native language and culture, as well as with the English language and – to varying degrees – with American culture. These native speakers’ intuitions give valuable insight into the extent to which the notion of “craving” is considered a relevant concept in other languages and cultures.

3.1. Methods

Twenty-seven native speakers of 20 languages other than English (Table 1) were recruited for 30 minute semi-structured interviews (conducted by JMH) via announcements in a large introductory psychology class. Though single informant reports are commonly used in linguistic studies, we sought to gauge consistency in responses across several informants by interviewing three native speakers each of French and Korean, and two native speakers each of Portuguese, Russian and Spanish. For the main analyses only one native speaker of each of the 20 languages was included; in the case of multiple informants the first person interviewed for each language was selected.

Participants were screened for native speaker status (as defined by having learned and primarily spoken the foreign language before adolescence), and with sufficient fluency in English to conduct the interview. Only participants familiar with the word “craving” in English and able to provide an adequate definition were included in the analyses. We asked how the native speakers of foreign languages would translate “craving” into their native language, and the degree to which they would consider the translation offered truly synonymous with what they know about the meaning of the term “craving” in

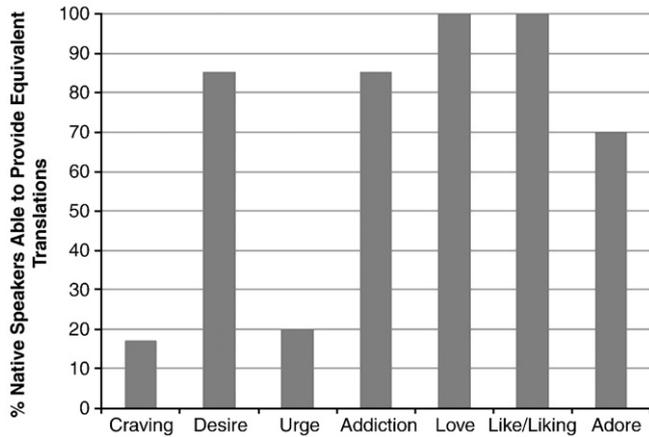


Fig. 2. % of native speakers of 20 foreign languages indicating the presence of an equivalent translation for each of seven words (Study 2).

English. We also asked about synonyms for related words, including “desire,” “urge,” “addiction,” “love,” “like,” and “adore.” For each, we queried about translations and level of equivalence of that translation in capturing the meaning of the English term.

Finally, we asked about appropriate uses of the different terms in the native language across 16 domains, including drug, tobacco and alcohol use, in reference to food and non-alcoholic beverages, food in pregnant women, when speaking about romantic partners, good friends or family members, and with respect to domains such as clothing, hobbies, art, music, literature, locations, buildings, or a field of study.

3.2. Results

Of the 20 native speakers all but one (95%, $n = 19$) had been born outside of the U.S. Respondents born outside the U.S. had lived there

on average four years ($M = 4.2$ years, $S.D. = 4.7$, range: 1 month–19 years). Respondents indicated on average having spoken English for 14 years ($M = 13.7$, $S.D. = 5.3$, range: 3–24 years). They reported a high mean fluency in speaking English ($M = 87.4$, $S.D. = 11.3$, range: 58–100, on a scale of 0 = “no English at all” to 100 = “perfect native speaker fluency”).

Of the 20 respondents two were unable to provide a proper definition or translation of the word “craving” in English and were excluded from the analyses. Of the remaining 18 respondents all gave a definition of the term in English that correctly captured the meaning of “craving.” When asked for their best effort at translating the term “craving” into their native language seven respondents (39%) provided a descriptive phrase, while 11 respondents (61%) generated a single word. When asked about the appropriateness of the translation they had provided, 83% ($n = 15$) of the respondents felt that their translation was not equivalent to the meaning of “craving” in English, and only three (17%) believed the translation provided appropriately captured the concept of “craving” in English (Albanian, Vietnamese and Spanish). By comparison, 100% ($n = 20$) of respondents were able to provide what they considered equivalent translations of the terms “like” and “love,” 85% ($n = 17$) of the words “desire” and “addiction,” and 70% ($n = 14$) of the term “adore.” The only other word queried that proved difficult for respondents was “urge,” with only 20% ($n = 4$) able to generate what they considered to be a proper translation in their native language (Bengali, Hindi, Greek, and Spanish) (Fig. 2).

Most respondents reported that the equivalent (or approximate) translation of “craving” (if there was one) refers primarily to consummatory behaviors, including the “ingestion” of drugs and alcohol, tobacco, food, and sex. A similar pattern emerged in the reported uses of “addiction” and “urge.” “Love” was said by most respondents to be used in an equally constrained context, and to be applicable almost exclusively in reference to people, including romantic partners, family members and good friends. “Desire” and

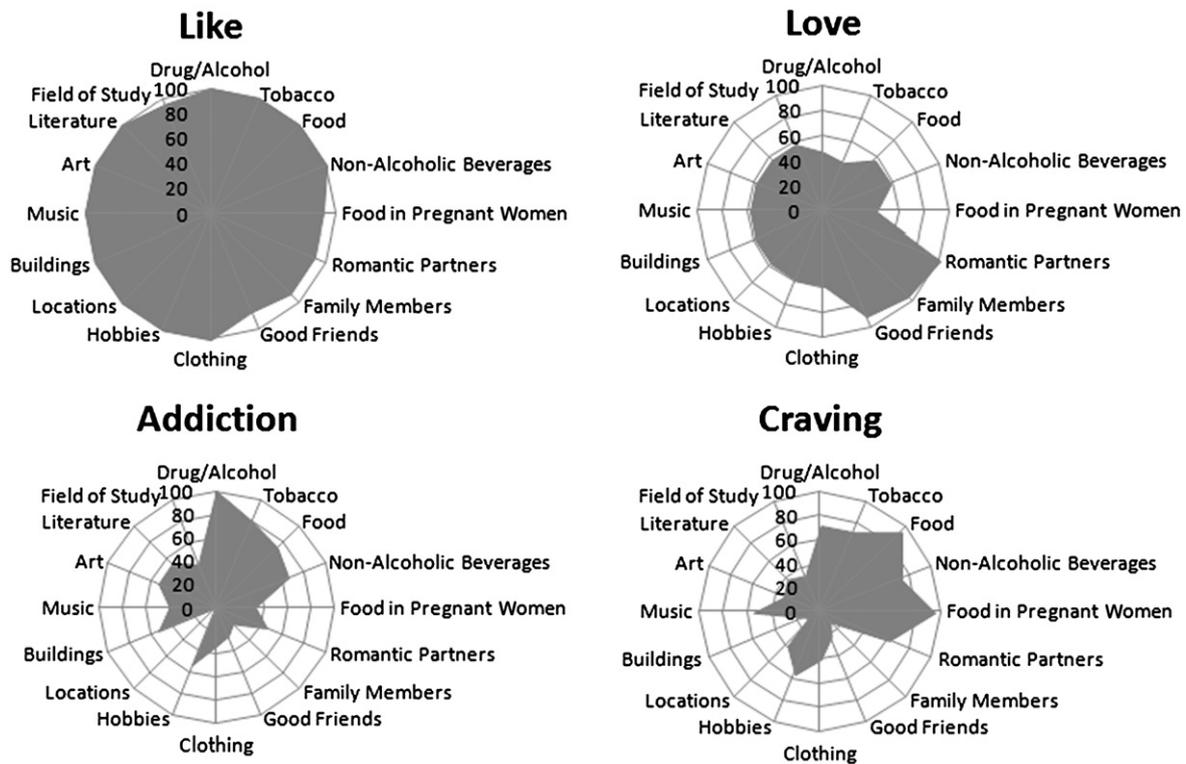


Fig. 3. % of respondents indicating appropriate use of the word “like,” “love,” “addiction,” and “craving” across domains (Values for each word and context are calculated as follows: the denominator is the number of languages that have a synonym for the word in question, and the numerator is the number of these languages for which the word applies to the context indicated. This ratio is multiplied by 100 to form a percentage.)

“adore” had reported uses that were much broader in scope, while “like” emerged as the most widely applicable term, essentially spanning all contexts queried during the interview. Fig. 3 represents the reported domains of use of four of the words assessed in those languages that provided any translation, illustrating the wide applicability of “like,” in contrast to the specificity of the words “love,” “addiction,” and “craving.” The similarities in reported use of “craving” and “addiction” across domains is noteworthy, as it suggests that “craving” enters language in connection with the concept of addiction. Of the twenty languages queried, only three (15.0%) had equivalent translations for both “craving” and “addiction.” Another three (15.0%) had translations for neither word, 14 languages (70.0%) only had translations for “addiction,” and none had translations only for “craving.”

In terms of consistency of reports between several native speakers of the same language, agreement between the two Portuguese, Russian and Spanish respondents was perfect (with the exception of one Russian informant who was unable to translate either “desire” or “urge”). In the case of the three French and three Korean native speakers there was some level of disagreement in self-reports. Again, this was in large part due to some of the respondents not generating any translations for some of the words. Of note, however, two of the French and all three Korean respondents agreed that there was no equivalent translation of the word “craving.”

3.3. Discussion

Findings are consistent with results of study 1 in pointing to marked difficulties in translating “craving” into a range of languages, compared to several control words. These difficulties were clearly recognized by the respondents who found the translation task challenging, and generally agreed that whatever translation they provided did not feel adequate in capturing the meaning of the English word. The translations – equivalent or merely approximate – that were offered suggest that respondents appropriately attempted to capture the sense that “craving” in English refers almost exclusively to strong desires related to consummatory or ingestive behaviors.

Of note, the word “urge” also proved difficult for study participants. The most likely reason for this is the fact that in spite of its dual meaning (as a verb and noun) it is used relatively rarely in the English language (as noted above), and non-native speakers may have very little to no experience with the word. In addition, “urge” and “craving” are quite similar in meaning.

4. General discussion

In two studies we demonstrate a striking absence of truly equivalent translations of “craving” in a wide range of languages, representing a diverse set of cultures. Study 1 illustrates this fact using electronic dictionaries; study 2 corroborates the finding using native speaker reports. Prior research suggests that the absence of a synonym for a specific word in a particular language is evidence that this word does not correspond to what would be considered a natural or universal category. Our results thus suggest that “craving” does not in fact carve nature at its joints, but instead designates a subcategory of strong periodic desires that appears to be a culture-specific notion, prevalent primarily in English-speaking countries. Of note, it includes some but not all ingestants (e.g. individuals would

rarely or never report craving water). While individuals outside of English-speaking countries may well experience what native English speakers would designate as a “craving,” this experience appears to not merit a specific word. This finding has important implications for the way in which we view major psychological processes, including food choice and addiction. That is, we might expect craving to be a periodic strong desire for foods or drugs, but not otherwise different from other strong periodic strong desires (e.g., thirst).

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Contributors

JMH and PR designed the study, JMH collected and analyzed the data, JMH and PR interpreted data and wrote the manuscript.

Conflict of Interest

Both authors declare no conflict of interest.

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