The Language of Intoxication: Preliminary Investigations

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Background: The extensive vocabulary individuals use to describe alcohol's subjective effects has largely gone unexamined in contemporary alcohol research. The present study examined the language drinkers use to describe their own intoxication. It is argued that this language can provide a more complete characterization of alcohol's subjective effects than is available from existing objective and subjective measures of alcohol use and can inform future self-report research.

Method: Toward this goal, a preliminary, cross-sectional, web-based study of the familiarity and usage of current intoxication-related words was conducted in 2 different samples ($n = 290$ and 146, respectively) of university undergraduates.

Results: Exploratory factor analyses using data from the first sample and confirmatory factor analyses using data from the second sample similarly showed that commonly used terms loaded onto 2 factors, which directly reflected the number of drinks required to be considered moderately or heavily intoxicated, respectively. Gender differences were also found in the familiarity and self-use of some terms across both samples.

Conclusions: The findings suggest that alcohol researchers include multiple intoxication-related terms in future self-report research, and to periodically assess current intoxication-related vocabulary considering demographic, generational, and socio-cultural differences.

Key Words: Subjective Effects, Intoxication, Language, Self-Report, Alcohol.

THE NUMBER OF unique synonyms for intoxication in the English language is exceedingly large. However, alcohol researchers often use only 1 or 2 items to assess subjective effects of heavy alcohol consumption (e.g., "To what extent were you drunk?"). We argue that the language drinkers use to describe subjective alcohol effects is important to self-report research, denotes a range of intoxication levels, and is not adequately represented by a single item or term (e.g., "drunk"). If sufficiently resolved, the language drinkers use could prove beneficial in providing a summary index of the "effective" dose of alcohol experienced (i.e., how intoxicated individuals feel), which can vary dramatically from the actual dose administered (i.e., number of standard drinks).

DRINKING VOCABULARY

In 1737, Benjamin Franklin compiled "The Drinker's Dictionary" (as cited in Levine, 1981; p. 1038), stating that drunkenness "is therefore reduc'd to the wretched Necessity of being express'd by distant round-about Phrases, and of perpetually varying those Phrases, as often as they come to be well understood to signify plainly that A MAN IS DRUNK."

In a historical analysis, Levine (1981) corroborated this notion finding that the then current American Dictionary of Slang (1975) offered more synonyms (~350 words) for "drunk" than for any other word in the English language. Levine also noted that many of Franklin's terms (e.g., "wamble crop'd") had become outdated, highlighting that intoxication-related terms are ever-changing. In fact, some of the terms Levine offered as current in 1981 (e.g., "bagged" and "twisted") are anachronistic today.

Since Levine's (1981) work, however, there has been only 1 empirical assessment of intoxication-related vocabulary. Cameron and colleagues (2000) conducted a pilot study to examine the meaning and possible categorization methods of intoxication-related terms across languages and cultures. English, Scottish, Dutch, Swedish, and Greek alcohol researchers compiled the 10 most commonly used intoxication-related terms in their respective region. Each group of researchers compiled unique term lists, indicating cultural and regional differences in intoxication vocabulary. Results also showed significant differences among regions in psychological and behavioral ratings of terms, indicating conceptual differences among terms.

Cameron and colleagues' (2000) work is a positive step in empirically demonstrating differences in intoxication-related vocabulary. However, it is limited in its approach for a number of reasons. First, the sample was comprised of alcohol researchers and not individuals from the general population of drinkers. Second, a number of other important factors concerning the nature and usage of the terms was left unexamined. For instance, it is unknown how these terms reflect actual amounts of alcohol consumption. Furthermore, it is unknown whether the use of particular terms differs across gender or other individual difference factors. Thus,

additional empirical research examining the current state of intoxication-related vocabulary is clearly needed.

SELF-REPORT IN ALCOHOL RESEARCH AND THE SUBJECTIVITY OF INTOXICATION

Discrepancies might arise among various subjective (e.g., "To what extent were you drunk?") and objective (e.g., number of standard drinks) measures of intoxication for several reasons. The potential for inaccurate reporting in self-report research is widely acknowledged despite the fact that self-report measures produce valid data in alcohol research (see Del Boca and Darkes, 2003; Del Boca and Noll, 2000; Sher and Epler, 2004, for reviews). Inaccurate reporting likely occurs because individuals' drinking styles often do not correspond to standard drink sizes used by alcohol researchers (e.g., 0.6 oz. of ethanol per drink – one 12 oz. beer, one 5 oz. glass of wine, one 1.5 oz. shot of liquor; Kaskutas and Graves, 2000). Individuals therefore have difficulty in accurately estimating the amount of alcohol in the drinks they report. In fact, Kerr and colleagues (2005) recently showed that adults' drinks contained 11.7% more alcohol on average compared with a standard drink (43% more for liquor, 10% more for wine; alcohol content for beer was under-reported). In studies of college students, White and colleagues (2003, 2005) similarly showed that students not only did not know the definition of a standard drink, but also they overestimated the amount of alcohol as much as 3-fold in a free pour test of drinks of different sizes.

Beyond issues of drink size, there are large individual differences in both the pharmacokinetics (i.e., how alcohol is processed in the body) and pharmacodynamics (i.e., how one responds to a given blood alcohol level; see Sher and Wood, 2005; Sher et al., 2005, for reviews) of alcohol, which can be attributed to genetic, acquired, and situational factors. Moreover, there are practical constraints on recording sufficient information about a drinking episode to characterize dosing (e.g., stomach content, volume and concentration of alcohol in the beverage, duration and pacing of a drinking episode).

These individual differences, at least in part, likely contribute to variability in the criteria that individuals apply to themselves in defining drunkenness. Midanik (2003) showed that some individuals primarily used indicators of impaired ability (e.g., problems walking or driving) to determine intoxication, whereas others reported physiological indicators (e.g., getting sick or dizzy), cognitive indicators (e.g., not being able to think clearly), or simply a general feeling of losing control. Additionally, perceptions of intoxication have been shown to change over time. Kerr and colleagues (2006; see also Midanik, 1999) compared survey data from 3 samples over the course of 2 decades and found that the number of drinks required to feel the effects of alcohol and to be considered "drunk" have decreased over time.

The extant literature indicates that individuals vary dramatically in their reports of subjective intoxication even when various aspects of dosing are held constant. Hence, the current

usage of single self-report items (e.g., "To what extent were you drunk?") in assessing subjective intoxication levels is not adequate because different individuals do not define, perceive, or experience being "drunk" in the same way. There is a distinct need for supplementary measures of the subjective effects of alcohol, regardless of why these individual differences exist. Additionally, supplemental measures could have important implications for future research, particularly in examining problematic drinking outcomes. For example, Jackson and colleagues (2001) found in their longitudinal analysis of effect-drinking (i.e., drinking to get "high" or "drunk"; see also Midanik, 1999) that subjective measures of alcohol use effects were more strongly related to alcohol problems and alcohol dependence than more objective measures.

The current state of intoxication-related vocabulary needs to be assessed as it represents a useful supplement to self-report research that could potentially address some of the issues noted above. Therefore, we conducted an exploratory study of the vocabulary that college students currently use to describe various levels of intoxication. We wanted to identify a commonly used set of intoxication-related terms, determine how familiar individuals were with these terms, how much individuals use these terms to describe themselves, and how these terms reflect different levels of intoxication. Despite the lack of empirical work on intoxication-related vocabulary, we generally expected terms to differ in their reflection of intoxication levels considering that, at least at face value, certain terms (e.g., "wasted") seem to denote a more severe level of intoxication than others (e.g., "buzzed"). We also expected men to use more severe and less euphemistic intoxication-related terms than women, based on findings from previous work examining gender differences in slang usage (see Haas, 1979, for a review).

METHOD

Participants

Sample 1. A convenience sample of 290 undergraduate students of a large midwestern university participated in the study in exchange for partial course credit during the fall semester of 2006. Participants (140 men, 150 women) ranged in age from 17 to 24 years (M = 18.5 years). Most were Caucasian (87%), and 28% were in a Greek fraternity or sorority. Most participants (44%) considered themselves to be "moderate" drinkers.[1] Participants reported an average alcohol quantity/frequency (Q/F; created by multiplying weekly usage estimates based on past year and past month, respectively, and weekly frequency estimates) of 6.44 (SD = 11.39) drinks per week over the past year and 7.71 (SD = 10.11) drinks per week over the past month, and reported drinking heavily 2–3 times on average over the past month.

Sample 2. The following spring semester, a second convenience sample of 145 undergraduate students at the same university

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[1]Participants chose which descriptor best suited the type of drinker they were, with possible choices of "Abstainer," "Abstainer—former problem drinker in recovery," "Infrequent drinker," "Light drinker," "Moderate drinker," "Heavy drinker," and "Problem drinker." "Moderate drinker" was the modal response.

participated in the study in exchange for partial course credit. Participants (73 men, 72 women) ranged in age from 17 to 22 years (M = 19.1 years). Most were Caucasian (90%), and 29% were in a Greek fraternity or sorority. Most participants (47%) considered themselves to be "moderate" drinkers. Participants reported an average Q/F of 10.07 (SD = 11.17) drinks per week over the past year and 1.43 (SD = 3.65) drinks per week over the past month, and reported drinking heavily about 2 times on average over the past month.

Measures

Intoxication-Related Terms. The researchers compiled a list of commonly used intoxication synonyms. Recent dictionaries, thesauruses, and personal discussions among the researchers and other lab members[2] were used to identify all possible intoxication-related synonyms available from these sources. For each synonym, the lab group discussed its commonality and potential usage among college-aged drinkers, and agreed by consensus whether it should be included in the study. Terms that were agreed by consensus to be uncommon or outdated, particularly among college-aged students, such as "tight," were excluded. This process identified 26 unique intoxication-related terms thought to encompass the college-aged drinking vocabulary (see Table 1). Questions were administered assessing whether participants were familiar with each term in relation to drinking (yes/no), whether they personally use each term to describe themselves while intoxicated (yes/no), and how many standard drinks it would take over the course of 2 hours to be described with each term.[3] Participants were instructed in the survey that a standard drink was defined as a 12 oz. beer, a 5 oz. glass of wine, or a shot or mixed drink containing 1.5 oz. of liquor.

Additional Alcohol Use Items. To characterize the typical drinking patterns of our samples, participants were asked to estimate their quantity (in standard drink sizes) and frequency of alcohol use over the past year and month, respectively. Additionally, heavy alcohol use was assessed with a composite of 3 items asking participants the frequency in which they became "buzzed or light-headed" from alcohol, "drunk (e.g., speech was slurred or unsteady on your feet)" from alcohol, or had 5 or more drinks in 1 sitting over the past 30 days.[4]

Procedure

Participants were recruited through introductory psychology courses and interested participants were sent a web link via email to access the survey. Informed consent was obtained online through a confidential survey hosting website (http://www.surveymonkey.com) where participants completed the survey, which took no longer than an hour to complete. The survey site notified the researchers once the participants had completed the survey, at which time participant compensation (course credit) was distributed.

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[2]Lab members, comprised of 5 faculty and staff and 7 students, were equally represented in gender (50% male) and ranged in age from 24 to 55 years.

[3]In the second sample, additional terms ("blitzed," "cut," "face-slammed," "high," "in your cups," "pickled," "soused," "three sheets to the wind," and "wrecked") were included based on suggestions from lab members. None of these words were operationally familiar to participants in Sample 2 (i.e., > 50% of participants being familiar with the word) or were endorsed as being used by participants. Thus, they are not presented here. Of note, however, is that participants did not use the word "high," which continues to appear in some self-report alcohol research, to describe their own intoxication. The current usage of "high" is expanded in the discussion.

[4]Q/F and heavy drinking indices were included strictly to illustrate the general drinking patterns of our sample and were not included in other analyses.

Table 1. Familiarity of Intoxication-Related Terms

Intoxication terms	Percentages of familiarity			
	Sample 1 men	Sample 1 women	Sample 2 men	Sample 2 women
Blind	18.6*	7.3	15.3	7.1
Juiced	37.1	25.3	33.3*	18.6
Shot	42.1	40.7	38.9	35.7
Loopy	42.1	44.7	40.8	50.0
Ripped	50.0***	31.3	54.8**	30.0
Sloppy	54.3	46.0	64.4*	44.3
Plowed	56.4***	34.0	55.6**	31.9
Lit	57.1*	43.3	57.5	44.3
Bombed	62.9***	33.3	64.4*	44.3
Obliterated	66.4**	50.0	82.2***	50.0
Light-headed	67.1	64.0	54.2	71.4*
Loaded	68.6*	55.3	64.4**	38.6
Inebriated	69.3*	56.0	77.5*	60.0
Sloshed	70.0***	50.7	76.4*	58.6
Tanked	88.6*	79.3	90.3	82.6
Gone	92.1	92.0	91.7	81.4
Plastered	94.3	92.7	91.7	88.4
Tipsy	95.0	96.7	98.6	97.1
Smashed	95.7	90.0	93.2	88.6
Hammered	95.7	93.3	93.2	90.0
Trashed	95.7	94.7	93.1	92.9
Wasted	95.7	95.3	97.3	95.7
Shit-faced	96.4	92.0	94.4	91.4
Buzzed	96.4	93.3	95.9	95.7
Fucked up	97.1	94.7	97.3	90.0
Drunk	97.9	96.0	98.6	97.1

Words are listed from least to most familiar based on Sample 1 men's ratings. Asterisks indicate that chi-square tests of differences in word familiarity between men and women within a sample are statistically significant.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

RESULTS

Participants' Familiarity and Self-Use of Intoxication-Related Terms

First, we examined the extent to which participants were familiar with each of the intoxication-related terms as they relate to drinking. As shown in Table 1, some terms were relatively unfamiliar to participants (e.g., "blind"), whereas others (e.g., "drunk," "wasted," "trashed") were familiar to over 95% of participants. This general pattern was similar across both samples. Results from chi-square tests of association also showed similar gender differences in the familiarity of some terms across both samples. For example, men were significantly more familiar with words such as "obliterated" and "ripped" in reference to intoxication than were women. Only "light-headed" was found to be more familiar among women than men in the second sample.

Next, we examined the extent to which participants used each term to describe themselves when intoxicated. As shown in Table 2, percentages of self-use roughly paralleled those of familiarity across both samples. For example, "blind" and "juiced" were endorsed by less than 10% of the sample, whereas the vast majority used "tipsy," "wasted," and "drunk." Interestingly, when the focus switched to self-description, gender differences became more apparent. Men

Table 2. Self-Use of Intoxication-Related Terms

| | Percentages of self-use | | | |
	Sample 1 men	Sample 1 women	Sample 2 men	Sample 2 women
Intoxication terms				
Blind	1.4	2.0	8.3*	0.0
Juiced	6.4	4.7	8.3	3.0
Shot	7.1	4.0	18.3***	0.0
Loopy	7.1	18.7**	15.3	15.2
Plowed	12.9*	4.7	21.1**	4.5
Bombed	15.0	8.7	30.6*	13.4
Lit	15.7*	6.7	16.7	9.0
Ripped	17.1***	2.7	19.4***	1.5
Sloppy	17.1	12.7	38.9**	16.4
Sloshed	17.9	10.0	36.1***	11.9
Loaded	20.0**	8.7	31.9**	11.9
Obliterated	21.4*	12.0	36.1***	11.9
Light-headed	22.9	29.3	30.6	31.3
Inebriated	23.6	18.7	43.1**	21.2
Tanked	38.6*	24.7	50.7**	26.9
Plastered	46.4	40.0	56.3*	38.8
Gone	52.1	46.7	62.5	47.8
Smashed	56.4*	42.0	67.1**	40.3
Hammered	57.1**	38.0	76.7**	56.7
Shit-faced	60.0*	46.0	68.1	58.2
Buzzed	64.3	65.3	68.1	77.6
Tipsy	65.0	82.0***	66.2	83.6*
Fucked up	67.1	54.0	74.0*	56.7
Trashed	68.6	59.3	68.1	67.2
Wasted	72.9	69.3	80.8	74.6
Drunk	81.4	78.0	88.9	83.6

Words are listed from least to most self-use based on Sample 1 men's ratings. Asterisks indicate that chi-square tests of differences in word self-use between men and women within a sample are statistically significant.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

were significantly more likely than women to self-use most of the terms. This trend was especially strong for words that have a violent or forceful connotation (e.g., "ripped" and "hammered"). In contrast, women were significantly more likely than men to self-use terms that arguably are more subtle and euphemistic in nature (e.g., "loopy" and "tipsy"). These findings are in line with previous evidence of gender differences in slang usage (Haas, 1979).

Factor Analysis of Intoxication-Related Terms

Factor analyses were conducted in both samples using data from the survey item asking participants how many standard drinks it would take over the course of 2 hours to be described with each term. Descriptive information concerning the number of drinks associated with each term (i.e., mean, SE, minimum, maximum) can be found in the second and third columns of Table 3.

Sample 1. We used exploratory factor analytic techniques to determine whether certain terms loaded onto common factors. Factor analyses were conducted in MPlus (Muthen and Muthen, 1998–2004) using maximum likelihood estimation with promax rotation. We initially extracted 4 factors with eigenvalues greater than 1, though a scree plot suggested

2 factors. After eliminating terms (e.g., "blind") that had a low base rate of familiarity (i.e., less than 50% of individuals were familiar with the term) or that evenly cross-loaded onto multiple factors (e.g., "drunk"), a 2-factor structure cleanly emerged (see the middle 2 columns of Table 3), $\chi^2(76) = 195.45$, $p < 0.001$; root mean square error of approximation (RMSEA; Steiger, 1989) = 0.08; root mean square residual = 0.03. Because terms associated with Factor 1 were rated as requiring significantly fewer drinks over 2 hours (M = 3.94, SD = 1.40) compared to terms associated with Factor 2 (M = 7.96, SD = 1.54), $t(281) = 39.32$, $p < 0.001$, we considered Factor 1 to reflect "Moderate Intoxication" and Factor 2 to reflect "Heavy Intoxication." Thus, not only can current intoxication-related vocabulary be separated into at least 2 general levels of intoxication (moderate and heavy), but also these levels directly reflect the amount of alcohol required to be described by each term.

Sample 2. We used confirmatory factor analytic (CFA) techniques to determine how the data from Sample 2 conformed to the factor structure found in Sample 1 (see Table 3). Data were analyzed in Mplus (Muthen and Muthen, 1998–2004) using maximum likelihood estimation. For each factor in the model, one factor loading was fixed to 1 for identification purposes and a covariance was estimated between the 2 factors. Overall model fit was assessed using the chi-square test statistic, the RMSEA (Steiger, 1989), the comparative fit index (CFI; Bentler, 1990), the Tucker–Lewis index (TLI; Tucker and Lewis, 1973), and the standardized root mean square residual (SRMR; Bentler, 1995). Nonsignificant chi-square values, CFI and TLI values above 0.90 (Bentler and Bonett, 1980; Tucker and Lewis, 1973), RMSEA values below 0.08 (Browne and Cudeck, 1993), and SRMR values below 0.06 (Bentler, 1995) indicate adequate model fit. Multiple indices were used to assess consistency of goodness of fit because each index has unique limitations (e.g., sensitivity in sample size variation with the chi-square statistic; Cliff, 1983).

The last 2 columns of Table 3 show CFA factor loadings for Sample 2. Tests of model fit in Sample 2 indicate that the data fit a 2-factor structure reasonably well [χ^2 (89) = 182.67, $p < 0.001$; RMSEA = 0.088; CFI = 0.95; TLI = 0.94; SRMR = 0.05] and significantly better than a single factor model [χ^2 (89) = 351.26, $p < 0.001$; RMSEA = 0.15; CFI = 0.85; TLI = 0.83; SRMR = 0.12; $\chi^2_{diff}(1) = 170.10$, $p < 0.001$].[5] Furthermore, participants in Sample 2 again considered terms on the Moderate Intoxication factor to reflect fewer drinks (M = 4.20, SD = 1.75) over 2 hours than terms on the Heavy Intoxication factor (M = 7.77, SD = 1.77), $t(137) = 51.50$, $p < 0.001$. Taken together,

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[5]Additional exploratory models were conducted in which gender was entered as a predictor of each indicator, as well as models in which error terms between certain words (e.g., "shit-faced" and "fucked up") were correlated as suggested by modification indices. While tests of chi-square differences between each model were significant, subsequent model alterations did not substantially improve model fit indices.

Table 3. Number of Drinks Associated with Intoxication-Related Terms and Corresponding Factor Loadings

Intoxication words	Number of drinks[a]		Sample 1 EFA		Sample 2 CFA[b]	
	Sample 1 mean∕SE (min∕max)	Sample 2 mean∕SE (min∕max)	Factor 1: moderate	Factor 2: heavy	Factor 1: moderate	Factor 2: heavy
Buzzed	3.81∕0.100 (1∕10)	4.00∕0.176 (1∕10)	**0.67**	0.03	**0.84**	0.00
Light-headed	3.76∕0.104 (1∕10)	3.73∕0.156 (1∕8)	**0.82**	−0.08	**0.80**	0.00
Loopy	4.45∕0.109 (1∕10)	4.59∕0.215 (1∕10)	**0.75**	0.02	**0.77**	0.00
Tipsy	3.80∕0.100 (1∕10)	4.18∕0.179 (1∕10)	**0.74**	0.03	**0.81**	0.00
Fucked up	8.43∕0.104 (3∕10)	8.01∕0.172 (1∕10)	−0.02	**0.73**	0.00	**0.80**
Gone	8.08∕0.105 (3∕10)	7.73∕0.197 (2∕10)	0.12	**0.65**	0.00	**0.78**
Hammered	7.75∕0.106 (3∕10)	7.61∕0.164 (1∕10)	0.09	**0.72**	0.00	**0.86**
Obliterated	8.07∕0.132 (1∕10)	8.17∕0.186 (1∕10)	−0.09	**0.75**	0.00	**0.82**
Plastered	8.06∕0.112 (1∕10)	8.07∕0.165 (2∕10)	−0.05	**0.87**	0.00	**0.90**
Plowed	7.28∕0.124 (1∕10)	7.46∕0.225 (2∕10)	0.10	**0.75**	0.00	**0.87**
Shit-faced	8.48∕0.106 (1∕10)	8.14∕0.174 (1∕10)	−0.08	**0.91**	0.00	**0.90**
Smashed	7.74∕0.111 (1∕10)	7.73∕0.165 (4∕10)	0.03	**0.87**	0.00	**0.92**
Tanked	7.64∕0.116 (1∕10)	7.94∕0.167 (3∕10)	0.00	**0.85**	0.00	**0.86**
Trashed	7.94∕0.111 (1∕10)	7.78∕0.166 (1∕10)	0.01	**0.86**	0.00	**0.91**
Wasted	8.01∕0.111 (1∕10)	7.81∕0.163 (2∕10)	0.02	**0.87**	0.00	**0.91**

Bold values are primary factor loadings.
[a]Data were taken from the survey item asking, "How many drinks over the course of 2 hours would it take to be described with each word?"
[b]Model fit indices for sample 2 CFA: χ^2 (89) = 182.67, p < 0.001; RMSEA = 0.088; CFI = 0.95; TLI = 0.94; SRMR = 0.05.

these findings reinforce those from the first sample, such that intoxication-related terms should be split into Moderate and Heavy Intoxication factors, and that these factors directly reflect the amount of alcohol required to be described with each term.

Finally, analyses of the number of drinks participants associated with the term "drunk," specifically, provided further evidence that intoxication-related terms should be subfactored. Across both samples, participants reported that "drunk" is associated with a little over 6 drinks on average over 2 hours (Sample 1: M = 6.45, SE = 0.103, min = 2, max = 10; Sample 2: M = 6.34, SE = 0.158, min = 1, max = 10). This amount falls almost evenly between the Moderate Intoxication factor (i.e., about 4 drinks across samples) and the Heavy Intoxication factor (i.e., about 8 drinks across samples). Thus, this finding underscores the generality with which "drunk" can be used and the need to use more intoxication-level-specific terms in self-report research.

DISCUSSION

This study demonstrates the rich vocabulary used by college-aged drinkers to describe alcohol's subjective effects. Two important findings regarding the nature of this language emerged. First, and most importantly, intoxication-related terms appear to be differentially understood as reflecting moderate or heavy levels of intoxication. This finding suggests the importance of using multiple terms in self-report intoxication inventories. Additionally, the commonly used term "drunk" was shown to be factorially complex in that it reflected a general level of intoxication between moderate and heavy. Therefore, "drunk" should not be used alone in self-report measures because it can be limited in its resolution. Additionally, as previously mentioned (see footnote 3), the

majority of participants in Sample 2 were not familiar with another commonly used term in alcohol research—"high"—in relation to intoxication from alcohol, and even fewer used it to describe their own intoxication. This is likely because "high" now primarily denotes intoxication from marijuana or other illicit drugs (*Oxford English Dictionary*, 1989), whereas it was once commonly used in a drinking context. Careful selection and inclusion of multiple terms in future self-report inventories could provide researchers with a more sensitive assessment of participants' intoxication levels.

Specifically, we recommend that researchers include terms that (1) represent both factors of moderate and heavy intoxication, (2) are highly familiar to drinkers, (3) are often used by drinkers as self-descriptors, and (4) load cleanly on their respective intoxication factor. While the inclusion of many terms in future self-report research would be ideal for obtaining sensitive data, we recommend that researchers include at least 3 words from each factor, which would permit estimation of latent variables. For example, words that meet all of the criteria just listed would be "buzzed," "tipsy," and "light-headed" from the moderate intoxication factor and "trashed," "wasted," and "hammered" from the heavy intoxication factor.

Second, men and women tended to differ in both their familiarity with particular intoxication-related terms and, more importantly, in the application of terms to themselves. Men might use heavy intoxication-related terms more than women because men drink more and drink more heavily on average and have higher tolerances to alcohol than women, particularly in college-aged samples (Chen et al., 2004∕2005). On the other hand, women might use moderate intoxication-related terms more than men, because women, regardless of their typical drinking and tolerance levels, prefer more euphemistic slang than men (Haas, 1979).

Nevertheless, these findings could have important implications for understanding gender differences in alcohol research. For instance, women in our study reported using "tipsy" self-descriptively more than men. "Tipsy" also loaded onto the Moderate Intoxication factor, reflecting about 4 drinks on average over 2 hours, which meets binge drinking criteria for women but not men (NIAAA, 2004). Thus, women might be drinking at binge levels while psychologically perceiving the intoxication as being relatively moderate. Potential misperceptions such as this could have dangerous implications for postdrinking decision-making and related behaviors. For example, research has shown that binge drinking is associated with hazardous driving behaviors (Valencia-Martin et al., 2008). If women binge drink and consider themselves to be "only tipsy" versus "drunk," then they might be likely to drive while substantially impaired.

These findings also have implications for gender-specific alcohol interventions, particularly among college students. For instance, it is known that college students use gender-speific norms of typical drinking behavior (Lewis and Neighbors, 2004), and that gender-specific personalized normative feedback (PNF) of drinking behaviors in college freshmen is thought to be preferable to gender-neutral PNF in reducing heavy drinking (Lewis et al., 2007). Clinicians could improve gender-specific alcohol interventions by using multiple intoxication-related terms that are tailored to the gender of the client. Furthermore, considering that identification of subjective alcohol use patterns has implications for the prevention and intervention of alcohol-related problems across stages of development (Jackson et al., 2001), clinicians could use this information to improve gender-specific interventions beyond college-aged populations.

Limitations and Future Directions

While the current study has a number of important strengths, it is not without limitations. Some potential limitations concern the homogeneity of our samples. First, although college students are commonly studied in alcohol research (Dowdall and Wechsler, 2002), and therefore our findings have immediate implications for research using college-aged participants, our samples represented a limited age range. Future research should include samples with wider variation in age because generational cohorts likely use different terms to describe alcohol's intoxicating effects, and because self-labeling of intoxication has been shown to change over time (e.g., Kerr et al., 2006). Second, our samples were limited in regional and cultural variation. It is possible that regional variation in intoxication-related vocabulary exists across the United States, which we could not detect in our predominantly midwestern sample. More broadly, there are international differences in the language used to describe intoxication, even among English-speaking countries (Cameron et al., 2000). For example, in England, it is common for drinkers to use terms such as "pissed" (*Oxford English Dictionary*, 1989) when describing intoxication, yet this term has a very different connotation (i.e., angry) to most Americans. More cross-cultural research is needed, and thus, researchers across the United States, and internationally, should replicate this procedure in local samples using regionally and culturally relevant words.

Another potential limitation of the current study concerns the method used to obtain data for factor analyses. Considering our argument that participants are often confused at the presentation of standard drink sizes relative to drink sizes with which they have experience, asking participants how many standard drinks over 2 hours it would take to be described with each term might seem somewhat troublesome. Although this approach arguably was not optimal, nevertheless our analyses are relevant to what the vast majority of researchers typically use in terms of standard drink size estimates. Future research should attempt to replicate these findings without relying on the presentation of standard drink sizes alone (e.g., by matching participants' blood alcohol levels to subjective descriptors in a controlled laboratory setting).

Future research also should focus on taking this information and assimilating it so that a more sensitive self-report measure of intoxication can be implemented in various lines of work. This information would be valuable to alcohol researchers as well as to clinicians. As mentioned previously, these findings can be incorporated into college-aged heavy drinking research, drunk-driving research, and gender-specific clinical interventions. However, to do so, researchers and clinicians must move beyond single item assessments such as drinking to get "drunk" or "high," especially when college-aged participants might view "drunk" as an overly broad term and might not understand "high" in a drinking context. Measures incorporating a broader vocabulary that reflect differing levels of intoxication and that are sensitive to gender differences could more accurately assess effects of interest.

In conclusion, by assessing current intoxication-related vocabulary, this research has taken an important step in improving subjective measures of alcohol use. Adequately assessing this vocabulary across regions, cultures, and generations might prove to be a daunting task; however, for the benefit of future research, we believe that it is crucial for alcohol researchers to take on this task. Moreover, it is not enough to only identify this language and then let it rest for another quarter of a century. Alcohol researchers and clinicians should periodically reassess the current state of slang and everyday language that individuals use relative to their research. Through this, researchers will keep in closer contact with their populations of interest, and the resultant research will yield richer data that are more easily interpretable.

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