Larsen et al. [1] report that implicit alcohol-related cognitions are unrelated to observed alcohol use. At first blush, one could be forgiven for thinking that implicit alcohol-related attitudes have no utility for the alcohol field, possibly discouraging further use and exploration of these measures by alcohol researchers. Several colleagues have raised such concerns upon sighting this study. We are more optimistic regarding the potential of implicit cognitions and associated measures and constructs (e.g. unconscious processes) in predicting drinking behaviour, and hope that the points we make here will leave readers similarly disposed. We offer some plausible reasons for Larsen et al.’s [1] lack of association between implicit alcohol measures and drinking behaviours that are not highlighted in their paper and provide some suggestions for future work in this domain.

Research on implicit attitudes and associated indirect measures began in earnest in the mid- to late 1990s [2,3]. The need for other ‘windows into the soul’ arose from the realization that self-reported (i.e. explicit) attitudes and behaviours often have little relation to actual behaviour [3,4]. Although poor associations between self-reported attitudes and behaviour and actual behaviour can arise for numerous reasons, impression management (socially desirable responding) for sensitive topics (e.g. prejudice, substance use, crime) and poor introspection and recall are among the most commonly cited [5]. Alcohol researchers will be aware that estimates from self-reported alcohol consumption are considerably less than recorded alcohol sales [6]. Additionally, there was a growing recognition that non-conscious (i.e. non-reportable) drives influence behaviour heavily. For example, brain imaging studies have revealed that measures of neural activity can predict actual behaviours up to 6 seconds before participants have made a conscious decision to act [7]. Similarly, subtle environmental cues that go unnoticed have been shown to bias behaviour routinely through implicit cognitions. For example, a study on the non-conscious effects of environmental cues on people’s behaviour [8] showed that the mere exposure (using subterfuge) to a background scent associated commonly with cleaning (i.e. citrus scent) enhanced decision times about cleaning-related concepts in a lexical decision task (implicit measure) and, more potently, led those participants exposed to the mild citrus scent to exhibit more non-conscious cleaning behaviours while eating a large crumbly biscuit than participants exposed to a neutral scent [8]. In this way, implicit measures can overcome many of the limitations of explicit and overt measurement mentioned above, and potentially capture unconscious attitudes and drivers of behaviour.

That implicit measures can predict behaviour is not really in doubt; the evidence suggests that they do [9,10], and in many cases they outperform comparable explicit measures [11]. What needs to be understood is what behaviours implicit measures predict, and under what conditions. As a generalization, implicit measures best predict spontaneous, automatic or unconscious behaviours, and behaviours where inhibitory control is depleted (e.g. after alcohol consumption) or absent [5,12].

Larsen et al. [1], and the laboratory from which this study comes, are to be applauded for their innovative efforts to create controlled contexts (i.e. laboratory bar) where drinking behaviour might be explored and, indeed, linked to explicit and implicit attitudes. However, there may be some limitations to such an approach in understanding links between implicit alcohol cognitions and drinking behaviour. First, despite the best efforts of the experimenter, anyone who is participating in a study is aware, implicitly or explicitly, that their responses and behaviours are being studied, and this will invariably affect their behaviour: the so-called Hawthorne effect [13]. Studies 1 and 2 of Larsen et al.’s study perhaps hint at this problem. Examining Table 1, observed alcohol consumption appears negligible in the laboratory bar setting, with only 0.48 and 0.58 drinks consumed in studies 1 and 2, respectively. It is possible that this reflects the true drinking patterns of these participants (means for weekly alcohol intake are not indicated in the results); alternatively, it may reflect the limited time-frame (30 minutes) given to participants to exhibit the behaviour of interest (i.e. ad libitum drinking). However, it is also plausible, given the very low levels of consumption, that participants may have consciously inhibited their natural drinking behaviour in the laboratory bar. Because implicit measures are more resistant than explicit measures to impression management effects, they may provide a truer reflection of underlying alcohol cognitions/attitudes and drives. However, one cannot expect to find relationships between implicit measure and explicit behaviour if the behavioural measure is distorted by participants’ desire to be viewed in a certain way, or is affected in some unspecified way by the study context.

Secondly, studies seeking to examine the relationship between implicit alcohol cognitions and actual drinking may benefit from a longer ad libitum drinking period than
the 30 and 45 minutes allowed by the present studies. Implicit measures are thought to be better predictors of behaviour where inhibitory control is lacking [14]. Thus, a longer drinking period may allow implicit drives to express themselves in drinking behaviour through the reduced inhibitory control that arises from increased alcohol consumption; indeed, we may gain insights into binge drinking behaviours in such a modified paradigm. In this way, the true relationships between implicit alcohol cognitions and actual drinking in a laboratory bar and other settings may be elucidated. Future studies may also benefit from a strict delineation between the collection of implicit and explicit measures. For example, collecting implicit measures in contexts that are divorced temporally and situationally from the ‘explicit’ task environment, either well before the explicit measures are taken or in a longitudinal fashion, would ensure that unwanted contextual cues do not bias participants’ implicit judgements.

Finally, notwithstanding the absence of a relationship between implicit measures and observed drinking behaviours, Larsen and colleagues [1] report significant relationships between implicit measures and other measures of consumption (e.g. binge drinking, weekly drinking). As such, we remain sanguine regarding the informativeness, predictive capacity and future development of implicit measures in alcohol-related studies and beyond. There is clearly a need for the field to further develop innovative methods for drinking assessment such as those described by Larsen et al. [1].

Declarations of interest

None.

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