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Deception in Human Experimental and Public Health Research on Alcohol Problems

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McCambridge and colleagues review ethical considerations about the use of deception in online alcohol intervention trials (McCambridge et al. 2013). At issue in particular is the idea of exposing participants to alcohol assessments and experimental manipulations while withholding or altering information, so as to limit participants' awareness of the study and/or its aims. These approaches can enable relatively more rigorous designs and clearer inferences about intervention effects, but conflict with ethical principles related to autonomy and respect. In the absence of clear guidelines from the public health field they present a thorough discussion of their own experiences, consulting broader ethics frameworks as applicable. Their conclusion (with which we agree) is that, considering the potential benefits and harms, deception is often justified as a means of facilitating accurate inferences about intervention efficacy and processes of behavior change.

Some of these dilemmas mirror those faced historically in human experimental research on alcohol use disorders, particularly studies involving alcohol administration in laboratory settings. Human laboratory studies of alcohol-related behavior emerged in the 1960s and have relied heavily on deception since. Although laboratory and public health research paradigms can be viewed as divergent, the fundamental rationale for deception is analogous across these contexts. Likewise, the phenomena (i.e., changes in alcohol-related behavior) and populations (drinkers or problem drinkers) under study are often analogous, despite being considered from a macroscopic vantage point in public health studies and a microscopic view in experiments. It is worth noting parallels in the dilemmas described by McCambridge et al. and those faced by experimental researchers, because precedents from small-scale experiments could inform debates about deception in large-scale experiments (i.e., intervention trials). We also note that deception in experimental alcohol research enabled methodological and theoretical advances that proved critical for enhancing scientific understanding of alcohol problems.

The objectives of public health alcohol intervention studies share similarities with those of laboratory-based studies. Both seek to characterize changes in alcohol-related behavior free from experimenter influence and other systematic biases, and to isolate experimental effects

to the extent possible—thereby facilitating accurate inferences about determinants of behavior. Deception is commonly used in experimental alcohol research to achieve these aims (as the authors note, this is true of many studies in social and experimental psychology). Common methods of deception in human laboratory studies include providing misleading information about study aims; measuring alcohol consumption surreptitiously or under false pretenses; providing misleading information about a recent or impending pharmacological manipulation; manipulating psychological states to be consistent or inconsistent with a pharmacological manipulation; and providing false information about participants' intoxication level. These manipulations in many ways parallel those described by McCambridge and colleagues—although in their studies no drug is administered and the laboratory comprises participants' natural environments.

Should the means of deception described by McCambridge and colleagues be viewed as fundamentally different from those used over the last half-century in laboratory studies of alcohol-related behavior? There are obvious and important contextual differences between laboratory and public health experiments, some of which have implications for the rationale, applications and consequences of deception. Some of the authors' trials are conducted without participants' awareness of the research—a difficult scenario for lab studies involving pharmacological manipulations. Withholding information about potential experimental assignments is common in the authors' studies, but not always possible in pharmacological studies. Public health trials seek to effect and evaluate ongoing changes in naturalistic behavior, whereas laboratory studies focus largely on analogues or discrete samples of behavior. Opportunities for comprehensive debriefing are diminished in internet-based trials. Despite these contextual differences, the fundamental rationale for deception is equivalent across contexts—involving the decision to forego full disclosure to preserve integrity of the experimental design and enable accurate inferences about causal determinants—thus maximizing scientific value of the study. The costs relate to infringement on participants' autonomy due to lack of disclosure, and potential harms of these infringements need to be weighed against the potential scientific and public health value of the research.

Advances enabled by the use of deception in experimental research can be illustrated by a single study involving the balanced placebo design (BPD). Popularized by Marlatt and colleagues in the 1970s, the BPD introduced a means of dissociating psychological versus pharmacological influences on alcohol consumption and post-consumption behavior. Briefly, the BPD involves a 2×2 design that crosses alcohol expectancy set (participants are told to expect an alcoholic beverage or to expect a nonalcoholic beverage) with drink content (participants receive an alcoholic or non-alcoholic beverage). In a classic experiment, Marlatt applied the BPD to study ad libitum alcohol consumption in drinkers with or without diagnoses of alcohol dependence (Marlatt et al. 1973). Participants were subjected to both forms of deception emphasized by McCambridge and colleagues: information about true study aims was withheld (participants were informed the procedure was a taste test) and researchers gave false information about experimental assignment (half of participants received misleading information about beverage content). The results—which demonstrated the primacy of psychological over pharmacological determinants of alcohol consumption and refuted the “loss of control” phenomenon in alcohol dependence—had lasting methodological and theoretical implications (George et al. 2012). The study also presaged the development of alcohol expectancy theory, ultimately leading to new cognitive-behavioral theories and interventions. For instance, expectancy challenge paradigms—which were directly informed by this work and often utilize deception—are efficacious as alcohol interventions (Scott-Sheldon et al. 2012). This pivotal study (and countless studies following from it) led to significant advances in the scientific

understanding and treatment of alcohol use disorders (George et al. 2012). Many of these developments could not have occurred without experimental applications of deception.

Ethical concerns about deception in Marlatt's and subsequent studies were further amplified by exposing participants with diagnosed alcohol dependence to free access alcohol consumption paradigms. Not surprisingly, this approach has generated objection and ethical debate over the years (Dolinsky and Babor 1997; Enoch et al. 2009; Goldman 2000; Koocher 1991). A common concern is that these procedures condone problematic drinking and could trigger uncontrolled drinking in alcohol-dependent participants following the experiment. Although the manipulations reviewed by McCambridge and colleagues undoubtedly raise ethical issues, it could be questioned whether these methods would prove as contentious to lay audiences as giving alcohol to dependent participants in the context of deception—an approach with a long history in alcohol research.

Ultimately, ethical debate about experimental procedures with alcohol-dependent participants proved constructive for the field. First, it provoked discussion in the academic community, allowing a forum in which the benefits and costs of these methods could be articulated (e.g., Dolinsky and Babor 1997; Enoch et al. 2009; Goldman 2000). Second, it prompted empirical studies to evaluate the legitimacy of ethical concerns—with some results showing that naturalistic alcohol consumption *decreases* following alcohol administration in the lab (Drobes and Anton 2000). Third, ideas generated from the debate could be considered when formalizing ethical guidelines. The U.S. National Advisory Council on Alcohol Abuse and Alcoholism, in collaboration with the National Institute on Alcohol Abuse and Alcoholism (NIAAA), developed methodological guidelines for human alcohol administration studies (NIAAA, 2005) that are informed largely by ethical considerations and include recommendations about deception. One possibility is that the discussion initiated by McCambridge and colleagues will prompt a similar sequence of events in the public health intervention field. Recommended guidelines for public health trials would be a valuable resource for scientists, research ethics boards, and funding agencies. This process would likely require collaboration among scientists and public health or funding agencies.

From a cost-benefit perspective we agree that the deception described by McCambridge and colleagues does not carry obvious risk for net harms, despite infringing on participants' autonomy and right to disclosure (though we also agree that research is needed to identify and quantify harms associated with deception). On the other hand, advancing candidate interventions based on trials that were not optimized for causal inference (one potential consequence of decreased experimental control in randomized trials) could come at significant cost, especially considering the enormous resources committed to sustaining behavioral health research and interventions. Given no precise ethical guidelines in public health research to inform the use of deception currently, referring to analogous dilemmas and events in the history of human experimental research could be useful in navigating these decisions.

Translational implications of this issue should also be considered. One question is whether the authors' studies will lead to the conclusion that deception enhances the real-world effectiveness of these interventions. That is, would health benefits be maximized when the public receives the interventions en masse, but unknowingly? On one hand this approach would require broad endorsement and generate additional debate. However, this approach could also be viewed as similar to other public health interventions that forgo full disclosure or consent, limiting individual autonomy in the interest of overall health (e.g., adding fluoride to drinking water). Assuming the delivery of many public health interventions involves deferring individual autonomy to promote population health, studying candidate

interventions under similar conditions is justified—and possibly necessary for maximizing the public health yield of intervention research.

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