Driving construals: Personal Construct Theory in a reckless driving context

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Brenton McNally *, Graham L. Bradley

School of Applied Psychology, Griffith University, Gold Coast, Australia
Behavioural Basis of Health Program, Griffith Health Institute, Australia

ABSTRACT

With research revealing low road safety campaign efficacy and links between reckless driving behaviors and crash frequency, further investigation into the foundations and composition of driver education and training is required. Through two studies, the current research aimed to develop a measure that utilized the principles of Kelly's (1955) Personal Construct Theory to (a) elicit constructs, or construals, specific to selected elements of reckless driving behaviors, (b) pilot a method in which the elicited constructs could be measured by asking participants to choose those they deemed most important, (c) group participants based on their constructs, and (d) assess between-group differences in self-reported reckless driving behavior. Results suggest that drivers can be categorized based on the constructs they use, and that rates of self-reported past engagement in reckless driving behavior, and willingness to do so in the future, vary systematically between these construal-based driver categories. Continuing research is required to develop and test applications of these findings.

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1. Introduction

There have been numerous approaches to reducing the incidence of vehicle crashes over the last few decades, including stricter traffic regulation, increased education, and engineering improvements to the safety of cars and roads (Lund & Rundmo, 2009). Despite evidence of successful attempts in certain domains (Elder et al., 2004), research frequently reveals that the efficacy of road safety campaigns, including traditional and school-based driver education programs, is low (Atkin, 2001; Delaney, Lough, Whelan, & Cameron, 2004; Hirsch, 2003; Lund & Aaro, 2004; Mayhew, 2007; Senserrick et al., 2009; Strecher et al., 2006; Vernick et al., 1999). In a recent meta-analysis, Phillips, Ulleberg, and Vaa (2011) found that, on average, road safety campaigns provided a 9% reduction in traffic crashes between 1975 and 2007. Previous meta-analyses (Delhomme et al., 1999; Vaa, Assum, Ulleberg, & Veisten, 2004) report similar results.

A growing body of research provides evidence of a link between reckless driving behaviors and crash-rates, especially among young drivers (Blows, Ameratunga, Ivers, Lo, & Norton, 2005; Fergusson, Swain-Campbell, & Horwood, 2003; Ivers et al., 2009; Jelalian, Alday, Spirito, Raslie, & Nobile, 2000; Jonah, 1986; Laapotti, Keskinen, Hatakka, & Katila, 2001; Stevenson & Palamara, 2001; Stevenson et al., 2001; Ulleberg & Rundmo, 2002; West & Hall, 1997). Researchers such as Lund and Rundmo (2009) argue that interventions utilizing psychological principles in safety campaigns, if appropriately executed,

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* Corresponding author at: School of Applied Psychology, Griffith University, Gold Coast, Australia. Tel.: +61 0756788119.
E-mail address: brenton.mcnally@griffithuni.edu.au (B. McNally).

might be effective in reducing reckless driving and vehicle crashes. However, as others have noted, prevention programs designed to modify driver behavior are relatively rare, are too broad, and often fail to address the antecedents of specific reckless behaviors (Schwebel, Severson, Ball, & Rizzo, 2006; Sheehan, Siskind, & Schonfeld, 2004). Clearly, the composition of driver education and training programs requires further theory-based research and development (Mayhew & Simpson, 1995). The current studies represent a new, potentially valuable approach to thinking about reckless driving and improving the design of driver education programs.

1.1. Personal Construct Theory (PCT) and driving behavior

Explanations of risky and reckless behavior vary in their emphases on biological, psychological, social, and broader cultural, political, and economic factors (Igra & Irwin, 1996; Porter, 2011). Among theories considered to represent the psychological domain are those that differentially emphasize cognitive, affective, motivational, personality, and other variables. Cognitive theories (e.g., Elkind, 1967; Fischoff, 2008; Kahnemann, Slovic, & Tversky, 1982; Mischel & Shoda, 1995) seek to understand reckless behaviors in terms of how individuals view their world, process information, and/or make decisions. Specific theories emphasize abilities, beliefs, cognitive styles, attribution processes, and decision-making heuristics. The current research is founded on Kelly's (1955) Personal Construct Theory (PCT), a general cognitive theory of personality that has seldom been applied to the field of risk and reckless behavior.

Adopting a constructivist position, Kelly's (1955) theory is a framework for knowledge acquisition and representation. The fundamental postulate of the theory is that "a person's processes are psychologically channelized by the way in which he anticipates events" (Kelly, 1955, p. 46). Kelly proposes that all people seek their own subjective understandings of their world, and they do so through developing and using their own distinctive set of personal constructs. A construct is a way of seeing, categorizing, and discriminating between aspects of reality. All constructs are bipolar, based on the concurrent perception of similarity and difference among objects in a particular context (Kelly, 1977). Constructs act as templates for construing situations, are domain specific, and finite in number (Kelly, 1970). Importantly from an interventionist perspective, Kelly argues that constructs are subject to continual revision.

Within PCT, behaviors are considered anticipatory as opposed to reactive, and reflect the application of constructs (Walker & Winter, 2007). As such, constructs can be considered the basis for decision-making (Shaw & Gaines, 1992). Although the theory is not focused on predicting behavior, clear links exist between constructs and behavior (Fransella, 1972; Fransella, Bell, & Bannister, 2004; McGuire, 1984). In this sense, Kelly's ideas are not dissimilar from those of other theorists, such as Mischel and Shoda (1995), who argue that construals (referred to as *encodings*) influence the subsequent involvement of other cognitive and affective variables in the process of generating behaviors.

Whilst acknowledging that individuals differ from each other in their construction of events, Kelly (1977) maintained that, for many reasons, people can share similarities in their constructs, and that these similarities then extend to other psychological processes. Research shows that individuals actively search for others with compatible constructs to validate their own worldview (Adams-Webber, 2001; Duck, 1979; Procter, 1981). Thus, in an application of Kelly's theory, and building on studies of within-group similarities in constructs, the current research sought to identify individuals who use similar constructs in relation to reckless driving, and to apply this information in the development of road safety interventions.

Although a substantial amount of research exists to support Kelly's (1955) theory, rarely has this been embraced in a reckless driving context (Roysamb, 1997). One application of the theory, the repertory grid technique (Bannister, 1968; Burr, 1999), has long been used to elicit constructs by which people categorize the objects and situations in the world around them. This technique involves a "triadic method of elicitation", in which groups of three 'elements' are presented and participants are asked to describe important ways in which two are similar and thereby different from a third. The ways in which participants differentiate between elements are considered to be the constructs by which they perceive and categorize the elements.

The repertory grid technique has seldom been applied when assessing driver behavior, with the rare instances of its use employing inconsistent methods. In one of the few studies of its kind, Armsby, Boyle, and Wright (1989) set out to assess driver hazard perception so as to differentiate between younger and older drivers. The researchers examined techniques for measuring the perception of specific hazards, comparing interview techniques with q-sort and repertory grid techniques. The repertory grid technique was found to provide greater differentiation between younger and older drivers than did the other techniques. One variation of this approach, the fixed repertory grid, in which participants rated a set of predetermined elements, proved to be particularly successful.

In a second study, Roysamb (1997) measured the influence of constructs in predicting self-reported risk behavior, specifically speeding in a car. However, the constructs that participants could choose to categorize the elements provided were drawn from prior research relevant to risk and health behaviors, rather than being elicited from the study participants. Even though this method differed from that used in previous research (e.g., Armsby et al., 1989), the constructs predicted a large proportion of the variance in risk behavior. Third, Calisir and Lehto (2002) elicited 18 constructs based on elements consisting of accident scenarios and found some to predict perceived usefulness of seat-belts and self-reported seat-belt use. Together, these studies suggest the value of further research using the triadic method to identify constructs related to driving behaviors.