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Explaining young adults' drinking behaviour within an augmented Theory of Planned Behaviour: Temporal stability of drinker prototypes.

Van Lettow, B., de Vries, H., Burdorf, A., Conner, M., & van Empelen, P. (2015).

Abstract

Objectives: Prototypes (i.e., social images) predict health-related behaviours and intentions within the context of the Theory of Planned Behaviour (TPB). The present study tested the moderating role of temporal stability of drinker prototype perceptions on prototype-intentions and prototype-behaviour relationships, within an augmented TPB. The study examined abstainer, moderate drinker, heavy drinker, tipsy, and drunk prototypes.

Design and Methods: An online prospective study with one month follow-up was conducted among 410 young adults (18–25 years old, M_{age} = 21.0, SD = 2.14, 21.7% male). Assessed were prototype perceptions (favourability and similarity, T1, T2), stability of prototype perceptions, TPB variables (T1), intentions (T2), and drinking behaviour (T2). Intention analyses were corrected for baseline behaviour; drinking behaviour analyses were corrected for intentions and baseline behaviour.

Results: Hierarchical regressions showed that prototype stability moderated the relationships of drunk and abstainer prototype similarity with intention. Similarity to the abstainer prototype explained intentions to drink sensibly more strongly among individuals with stable perceptions than among those with unstable perceptions. Conversely, intentions were stronger explained among individuals with stable perceptions of dissimilarity to the drunk prototype than among those with unstable perceptions. No moderation effects were found for stability of favourability or for relationships with behaviour.

Conclusions: Stable prototype similarity perceptions were more predictive of intentions than unstable perceptions. These perceptions were most relevant in enhancing the explanation of young adults' intended drinking behaviour. Specifically, young adults' health intentions seem to be guided by the dissociation from the drunk prototype and association with the abstainer prototype.

Key words: prototypes, temporal stability, favourability, similarity, drinking behaviour, intentions, young adults

Excessive drinking has been related to several negative health, social, and economic consequences (World Health Organisation, 2010). Examples are social and behavioural problems such as trouble with police, friends, or parents, injuries, unsafe sex and physical fights (Danielsson, Wennberg, Hibell, & Romelsjö, 2011). Excessive drinking is especially prevalent among young adults (Statistics Netherlands, 2010). Young adults can experience a number of problems due to their alcohol use such as overweight, high blood pressure, and unsafe driving practices (Oesterle et al., 2004). Alcohol is the world's third largest risk factor for disease burden, in Europe it is the second largest. Each year 2.5 million deaths worldwide are related to the harmful use of alcohol (World Health Organisation, 2010).

Theory of Planned Behaviour

Many risk behaviours, such as excessive drinking, have been studied in the context of the Theory of Planned Behaviour (Ajzen, 1991). The TPB proposes that behaviour results from deliberative reasoning. In other words, behaviour is regarded as intentional or goal-directed. Intentions are guided by attitudes, social norms, and perceived behavioural control (PBC). Attitude is defined as the overall evaluation of performing a behaviour (e.g., pleasant, healthy). Subjective norms refer to the social approval or disapproval to engage in behaviour, and the perception of what significant others do. PBC is defined as an individual's perception of control over or confidence in engaging in the behaviour. As Ajzen (1991, p. 185) stated: 'The relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention, is expected to vary across behaviours and situations'.

A previous meta-analysis found that across studies the TPB explained 27% and 39% of the variance in behaviours and intentions, respectively (Armitage & Conner, 2001). Thus, a significant proportion is left unexplained. Importantly, the type of health-related behaviour has been found to moderate the proportion of variance explained in both intentions and behaviour (McEachan, Conner, Taylor, & Lawton, 2011). Furthermore, research has found

intentions to not always be acted upon, even among individuals with strong intentions to engage in a behaviour (Sheeran, 2002). For these reasons, research has focused on extending the TPB in order to explain additional variance in intentions and behaviour (Ajzen, 1996).

Prototypes and the TPB

Various extensions to the TPB have been studied (Conner & Armitage, 1998). Recent approaches extend the TPB by including the factor 'prototypes' to the model (e.g., Norman, Armitage, & Quigley, 2007; Zimmermann & Sieverding, 2010). The present study examined the moderating role of stability of prototype perceptions. Prototypes (i.e., social images) refer to the mental image of a typical person engaging in (or abstaining from) a behaviour (Gibbons & Gerrard, 1995; Gibbons, Gerrard, & Lane, 2003), such as a typical drinker. The assumption is that prototypes exert their influence through social comparison processes (Gibbons & Gerrard, 1995). In other words, individuals compare prototypes to their self-identity. Individuals are thought to be aware that engagement in (or abstinence from) a behaviour might make other people evaluate them as having the prototypical characteristics associated with that behaviour (Gerrard, Gibbons, Stock, Vande Lune, & Cleveland, 2005). Characteristics found to describe heavy drinkers are, for instance, 'annoying', 'volatile', and 'uncontrolled'. Characteristics ascribed to a moderate drinker prototype are, for instance, 'spontaneous' and 'sociable' (van Lettow, Vermunt, de Vries, Burdorf, & van Empelen, 2013).

Prototypes perceptions can refer to prototype favourability and similarity, both of which are relevant in their relation to behaviour and intentions. Favourability refers to the positive or negative characterization or evaluation of the prototype; similarity refers to the perceived similarity of the self-image to the prototype (e.g., Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008; Norman et al., 2007). These prototype perceptions can guide behaviour through their impact on intentions. Indeed, these prototype perceptions have been

related to intentions to engage in various behaviours, including drinking behaviour (e.g., Andrews, Hampson, Barckley, Gerrard, & Gibbons, 2008; Norman et al., 2007). A more positive perception of prototypes associated with a behaviour is related to increased intention or engagement in that behaviour (Gerrard et al., 2002). In addition, engagement in (risk) behaviour can result in prototype perception change (Blanton, Gibbons, Gerrard, Conger, & Smith, 1997; Gibbons & Gerrard, 1995). Several studies on drinking alcohol have reported prototype perceptions to explain variance in intentions and behaviour over and above that explained by TPB variables and past behaviour (Norman et al., 2007; Rivis, Sheeran, & Armitage, 2006; Zimmermann & Sieverding, 2010).

Temporal Stability of Prototypes

Other research has suggested that the TPB can be usefully extended by focussing on the stability of cognitions (Conner, Sheeran, Norman, & Armitage, 2000; Cooke & Sheeran, 2004, 2013; Godin et al., 2010; Sheeran & Abraham, 2003). Temporal stability can be defined as the extent to which a construct remains unchanged over time, regardless of manipulations or challenges (Petty & Krosnick, 1995; Sheeran, Orbell, & Trafimow, 1999). It can be regarded as an operative measure of strength (Sheeran et al., 1999). For instance, temporal stability can help explain the consistency between intentions and behaviour (Conner et al., 2000; Cooke & Sheeran, 2004, 2013; Keer, Conner, Van den Putte, & Neijens, 2013; Sheeran et al., 1999). Temporally stable prototype perceptions might be expected to have stronger impacts on intentions and behaviour and help explain unique additional variance in intentions and behaviour compared to TPB variables and past behaviour.

The aim of the present study was to further our understanding of the determinants of a risky health behaviour, namely alcohol consumption in young adults. This was achieved by applying an augmented TPB to this behaviour in a sample of young Dutch adults. The

particular focus was on the importance of drinker prototype perceptions and the potential moderating effects of temporal stability of such perceptions. Two reasons support this focus on prototypes. First, for some, acquiring the characteristics attributed to certain prototypes is thought to represent a goal or a core self-value (Gerrard et al., 2002; Skalle & Rise, 2006). As a result, stability of prototype perceptions could be a reflection of variability of prototype perceptions that represent core self-values. Second, prototype perceptions are subject to natural change over time, due to accumulation of experience in the particular behaviour and observation of peers. This natural change in prototypes over time has been related to intentions and behaviour (Andrews et al., 2008; Hampson, Andrews, & Barckley, 2008) and stability may tap important aspects of this change.

Study Aims

In sum, the present study examined whether temporal stability of prototype perceptions moderates the relation of prototype perceptions with behaviour and intentions among young adults, in the context of an augmented TPB. In line with previous research, favourability of and perceived similarity to five prototypes are assessed (e.g., van Lettow, Vermunt et al., 2013): abstainer, moderate drinker, heavy drinker, tipsy and drunk person. These prototypes were chosen for two reasons. First, previous studies found that young adults distinguish between not only ‘drinkers’ and ‘abstainers’, but also a number of intermediate prototype as relevant to them (van Lettow, Vermunt et al., 2013). Second, these five prototypes have been found to differ in characterisation and evaluations of favourability and similarity, and to contribute to the explanation of young adults’ drinking behaviour and intentions in other studies (van Lettow, de Vries, Burdorf, Norman, & van Empelen, 2013; van Lettow, Vermunt, et al., 2013). It is because stability of prototypes has not been assessed

before that we examined the moderating impact of temporal stability on the relationship of prototype favourability and similarity with intentions and behaviour.

Methods

Design

Young adults (18–25 years of age, drinkers and abstainers) were recruited online through several Dutch forums and social networking websites by means of advertisements or forum posts, between September and November 2010. Participants first received the study information and signed the online informed consent form, guaranteeing their anonymity. The online prospective study included a one-month follow-up (T2). Participants were emailed a link to the second questionnaire and a reminder two weeks thereafter if needed. Twenty vouchers worth €50 were distributed among the 410 participants as incentive. The Ethical Committee of the research institution of the lead author approved the study (MEC-2010-112).

Participants

A total of 605 participants participated in the first measurement (T1, M_{age} = 21.0, SD = 2.2, 27.4% male). Of these 410 participants (attrition: 32.2%, M_{age} = 21.0, SD = 2.14, 21.7% male) also completed the measurements at one-month follow-up (T2). These 410 participants were included in all analyses. The majority were of Western origin[1] (92.7%), as defined by Statistics Netherlands (Statistics Netherlands, 2000). The majority of participants were either pursuing or had completed middle or high educational level (professional education and university or equivalent, respectively) according to Dutch rankings (92.9%). Men (OR = 2.33, $p < .05$), low educated participants (OR = 3.29, $p < .05$), and non-Western participants (OR = 3.08, $p < .05$) were more likely to drop out. Additionally, the total number of drinks consumed in the week at baseline was significantly higher among those that dropped out (M=13.04, SD=16.84; M=7.27, SD=9.79; $F(1, 603) = 28.16$, $p < .01$).

Measures

Questions were rated on 7-point scales (1: certainly not; 7: very certain) and variables consisted of the mean of items, unless otherwise specified. Table 1 presents the correlations between the variables (plus means and standard deviations at bottom of Table 1). The questionnaire items were based on the Dutch drinking norm of a maximum of five glasses per occasion (National Institute for Public Health and the Environment, 2005). Therefore, items are phrased such that the number of glasses always matches a maximum of five. 'Glasses' are a standard measure used by several Dutch studies. A standard glass contains 10 grams of alcohol, but the amount of liquid (cl) differs per type of drink.

Independent Variables

Attitude (T1) was measured using the statement: 'I find drinking a maximum of five alcoholic beverages per occasion…' with four semantic differentials ($\alpha = .86$; unhealthy–healthy, bad–good, boring–fun, unpleasant–pleasant), each rated on a 7-point scale (Cooke, Sniehotta, & Schüz, 2007). A higher mean represents a more positive attitude to drinking a maximum of five glasses of alcohol.

One item assessed descriptive norms[1] (T1): 'Most of my friends drink less than six glasses of alcohol per occasion' (Cooke et al., 2007). A higher score thus represents a perception of descriptive norms of sensible drinking.

Perceived behavioural control (PBC, T1) included nine items. The first four items were similar to self-efficacy. For example, 'I feel capable of drinking less than six glasses of alcohol per occasion' (Cooke et al., 2007). The last five items were similar to PBC (Armitage & Conner, 2001), using the statement: 'Image you wanted to limit the number of glasses of alcohol per occasion to 6. Would it be (1) very hard to (7) very easy to…' followed by e.g. 'succeed if you were offered another drink?' The mean of the nine items formed our measure

of PBC ($\alpha = .88$). A higher mean thus represents more perceived control over drinking behaviour.

Five drinker prototypes were assessed at baseline (T1) and at follow-up (T2): abstainer, moderate drinker, tipsy person, heavy drinker and drunk person. First, participants were provided with a general description of prototypes (Gerrits, de Ridder, de Wit, & Kuijer, 2009; Gibbons, Gerrard, & McCoy, 1995): 'When trying to describe someone, people generally use characteristics of that person. These characteristics can be positive, negative or neutral. For instance, a movie star could be described as rich, a striver, or handsome; a person that gets good grades could be smart, serious, or bookish. Five types of persons will follow. Think about the average (typical) person of your age, not one particular person that you know personally.' Additionally, an explicit definition stated that the abstainer prototype refers to someone who has refrained from alcohol during the past twelve months. Purposefully, no other definitions of drinking patterns per prototype were given, so as to avoid enforcing standard drinking patterns on the drinker prototypes. Instead, in a previous study (reference omitted for anonymity purposes) participants were asked to indicate the number of glasses of alcohol they expect the moderate and heavy drinker prototypes to drink per week and occasion, and the tipsy and drunk prototypes per occasion. The expected drinking patterns resembled the Dutch drinking norms.

Prototype favourability (T1, T2) is typically measured by rating prototypes on a list of (semantic) characteristics (Gerrard et al., 2008; Zimmermann & Sieverding, 2010). The present study used a list of 11 semantic pairs (7-point scales) of characteristics derived from a previous study on the five drinker prototypes (van Lettow, Vermunt et al., 2013). Participants were asked: 'Please indicate how much the following characteristics describe the typical person of your age who [abstains/drinks heavily/moderately/is tipsy/drunk]: unsociable-sociable, insecure-self-confident, loud-quiet, volatile-non-volatile, reserved-spontaneous, sad-

cheery, irresponsible-responsible, annoying-funny, boring-amiable, uncontrolled-controlled, unordered-determined.' A higher mean over the 11 items (i.e., adjective pairs) indicated a higher favourability of the prototype. Cronbach's alphas ranged from .71 (drunk prototype) to .85 (moderate drinker) at baseline and from .74 (drunk prototype) to .91 (moderate drinker) at follow-up.

Prototype similarity (T1, T2) was measured using two items per prototype—'How much are you like the typical person of your age who [prototype]?' (Gerrard et al., 2006), and 'What is the chance that you will be similar to the typical person of your age who [prototype] in the future?', with the latter rated on a scale from (1) very small to (7) very large (Ouellette, Hessling, Gibbons, Reis-Bergan, & Gerrard, 2005). Higher mean scores of the two items indicated a higher perceived similarity to the prototype. Correlations between the two similarity items ranged from .65 (heavy drinker) to .86 (abstainer prototype) at baseline and from .72 (drunk prototype) to .83 (moderate drinker) at follow-up.

Stability of prototype perceptions was operationalised by three measures of stability forming the stability index for favourability and similarity separately. These measures were based on previous studies (Conner et al., 2000; Sheeran & Abraham, 2003): (1) the sum of the absolute differences between prototype items (11 items for favourability, 2 for similarity) measured at T1 and T2; (2) the sum of the absolute differences between the sum of items at these time points; (3) the number of items that have changed. The stability index was composed of the mean of the three standardised measures (Conner et al., 2000; Sheeran et al., 1999). The scores were reversed in the analyses by subtracting the mean stability score for an individual from zero to ensure that high scores on the stability index represented higher levels of stability (Conner et al., 2000). Reliability of the stability indexes was generally high, with Cronbach's alphas ranging from .60 (moderate drinker) to .96 (drunk person) for favourability stability, and from .77 (drunk person) to .89 (moderate drinker) for similarity stability.

Importantly, the stability of similarity to the drunk was based on a median split, to minimise skewness[3] (i.e., participants generally felt dissimilar to the drunk prototype).

Drinking behaviour at baseline was assessed using a standardised Dutch questionnaire (NIPHE, 2005). Participants indicated by means of an open-ended question how many glasses of alcohol they had consumed each day in the past week. These items were used to calculate the total of consumed glasses of alcohol during the past week, further referred to as 'week total'.

Dependent Variables

Intentions (T2) were measured by means of five items ($\alpha = .94$), i.e., 'I intend to prevent myself from getting drunk during the next month,' 'I plan to prevent myself from getting drunk during the next month,' 'I intend to drink less than 6 glasses per occasion during the next month,' 'I plan to drink less than 6 glasses per occasion during the next month I plan to drink less than 6 glasses per occasion during the next month,' and 'I want to drink less than 6 glasses per occasion during the next month' (e.g., Cooke et al., 2007). A higher score represents a higher intention to drink sensibly.

Drinking behaviour at follow-up (T2) was assessed with the same items as at baseline (NIPHE, 2005).

[INSERT TABLE 1 AROUND HERE]

Statistical Analyses

All analyses were performed in SPSS version 20.0. Statistics are considered to be significant at $p < .05$. To minimise potential problems of multicollinearity in estimating regression coefficients, variables were mean-centred (Aiken & West, 1991; Yi, 1989). First, hierarchical regressions were performed with intention to drink sensibly at follow-up (T2) as dependent variable. One model was tested including prototype favourability and another including prototype similarity (for five prototypes simultaneously). In both models, baseline

drinking behaviour (week total T1) was entered in step 1 and all TPB variables (T1) in step 2. At step 3, either the prototypes' favourability or similarity (T1) was entered. At step 4, the corresponding stability of either the prototypes' favourability or similarity was entered. Finally, to test moderation by stability of prototype perceptions, step 5 added the interaction between prototypes at baseline and their stability value. The same procedure was followed to explain drinking behaviour (total of glasses of alcohol consumed in the past week) at follow-up, including intentions (T2) as an extra step between baseline behaviour and the TPB variables (T1). Thus, two models are presented in Table 2 for intentions (2a for favourability and 2b for similarity, 5 steps) and two models for drinking behaviour in Table 3 (3a for favourability and 3b for similarity, 6 steps). Simple slope analyses were performed to examine the direction of significant interactions (Aiken & West, 1991). Additionally, the Hayes and Matthes macro for SPSS was used for examination of plots (Hayes & Matthes, 2009).

Results

Descriptive Statistics

Participants reported having consumed a total of 7.27 glasses of alcohol per week at baseline (SD = 9.79) and 6.55 at follow-up (SD = 8.79). Table 1 presents the correlations and the means and deviations (bottom of table). Most participants reported high perceived control (PBC) and reasonably high intentions to drink sensibly. Participants generally felt most similar to the moderate drinker prototype and favoured it the most. The drunk prototype was generally evaluated least favourably and participants felt the least similar to it.

Explaining Intention

TPB and Prototypes

First, regression analyses were performed regarding the explanation of intentions to

drink sensibly (T2). Intentions were found to be significantly explained by baseline drinking behaviour, attitude, descriptive norms, PBC, favourability of or similarity to the abstainer and drunk prototypes and similarity to the tipsy prototype (step 3, Table 2). The explained variance was 36% for the prototype favourability model (Table 2a) and 41% for the similarity model (Table 2b).

Temporal Stability

Second, moderation of the relation between prototypes perceptions and intentions by prototype perception stability was tested. Stability did not moderate the relationship between prototype favourability and intentions. However, a main effect was found for the stable perception of similarity to the drunk prototype (step 5, $\beta = .11$, $p < .05$). This effect was qualified by a significant interaction effect (step 6) between similarity to the drunk prototype and its stability value ($\beta = -.13$, $p < .05$). Additionally, a significant interaction effect was found for similarity to the abstainer prototype and its stability value ($\beta = .12$, $p < .01$). The interactions significantly increased the explained variance by 2% (Table 2b). Table 2 presents the standardised betas for the model (2a for favourability, 2b for similarity). Posthoc power analyses produced a power of 1.00 for the favourability and similarity models.

Third, simple slope analyses were performed to examine the direction of the significant interactions (Aiken & West, 1991). The results showed that the more individuals felt similar to the drunk prototype, the lower the intention to drink sensibly. However, the effect was only marginally significant among those with a low stability of similarity to the drunk prototype ($B = -.20$, $p = .05$). This effect was stronger and significant for individuals with more stable similarity perceptions for the drunk prototype ($B = -.64$, $p < .001$, Figure 1a). Conversely, the more similar individuals felt to the abstainer prototype, the higher their intentions to drink sensibly[4]. This relationship was stronger among those individuals with more stable perceptions ($B = .29$, $p < .001$) than among those with unstable perceptions for

whom the relation was not significant (B = .09, p = .14, Figure 1b). In conclusion, stable perceptions of prototype similarity (for drunk or abstainer prototypes) had stronger effects in explaining intentions than unstable perceptions.

[INSERT TABLE 2A AND B]

[INSERT FIGURE 1A AND B]

Explaining Drinking Behaviour

TPB and Prototypes

Next we performed regression analyses for drinking behaviour (T2). Main effects were found for baseline drinking behaviour, intentions, PBC, and similarity to the abstainer (β = -.11, p < .01), tipsy (β = -.13, p < .01) and heavy drinker prototypes (β = .14, p < .001; step 4). Table 3 shows an explained variance of 64% regarding the favourability model (Table 3a) and 66% for the prototype similarity model (Table 3b). Again, posthoc power analyses produced a power of 1.00 for the favourability and similarity models.

Temporal Stability

Finally, the moderation effect of temporal stability was tested regarding the relationship between prototype perceptions and behaviour. No main effects were found for either stability of favourability or similarity (step 5). Additionally, no interaction effects were found (step 6) between prototype perceptions and their stability values. The interactions did not result in significant additional explained variance. Table 3 presents the models for prototype favourability (3a) and similarity (3b).

[INSERT TABLE 3A AND B]

Discussion

The present study examined whether prototype stability moderated the relationships between prototypes and young adults' intentions and drinking behaviour within an augmented

TPB. The results indicated that the prototype perception-intention relationship was moderated by stability. Prototype stability enhanced the prediction of intentions. No moderation effect was found for stability on the prototype-behaviour relationship.

Consistent with previous studies, the results suggest that temporal stability can improve the consistency of the relationship between cognition (i.e., prototype perceptions) and intention (Cooke & Sheeran, 2004). Stable prototype perceptions permit more accurate prediction of intentions than when they are unstable (Ajzen, 1985, 1991). A possible explanation for these relationships is the suggestion that more stable cognitions are more resistant to persuasion and can have larger impact on information procession than unstable cognitions (Cooke & Sheeran, 2004, 2013). Furthermore, important cognitions regarding the prototypes may be shielded from competing cognitions (Cooke & Sheeran, 2004).

Importantly, prototype stability only moderated the relationship with intentions but not with behaviour. This finding is in contrast to the suggestion that stability may moderate cognition–behaviour relations because it predicts changes in cognition prior to action (Cooke & Sheeran, 2004). An explanation is that drinking behaviour is complex and not always fully intentional (Gerrard et al., 2008). Previous studies have found that when behaviour is performed frequently, which is presently the case, stable intentions were not capable of breaking the link between previous and future behaviour (Conner et al., 2000). Plausibly, the predictive value of prototype perceptions' stability was not strong enough to break this habitual behaviour. Competing goals that influence behaviour irrespective of intentions could be at play and reduce the impact of even stable prototype perceptions. For example, an individual may intend to drink moderately or abstain because of an upcoming exam but simultaneously wanting to be sociable and liked by others. This competing goal might make it more difficult to refuse drinks.

Furthermore, only stable abstainer and drunk prototype perceptions were predictive of intentions. We suggest the following as potential explanations as to why these and not other (i.e., moderate drinker, heavy drinker, tipsy) prototypes were relevant. First, the abstainer and drunk prototypes were likely to be especially relevant due to their saliency (Ouellette et al., 2005). Their characterisation has been shown to be more profound than for the other prototypes while both the heavy drinker and tipsy prototype were each characterised by two types of characterisations instead of one clear characterisation (van Lettow, Vermunt, et al., 2013). Second, stable perceptions are thought to be less liable to contextual factors that could deviate from intentions (Cooke & Sheeran, 2013), however these other prototypes may be more liable to contextual factors. For instance, contextual factors may exert less impact on the drunk and abstainer prototypes because the drunk prototype is described with a more stable characterisation as an 'addicted' person and the abstainer as a 'determined' person, irrespective of the situation (van Lettow, Vermunt, et al., 2013).

Importantly, only prototype similarity and not favourability perceptions were moderated by stability. This finding is consistent with previous research that established that similarity was a stronger predictor of drinking behaviour than favourability (Hyde & White, 2009; Norman et al., 2007; Rivis et al., 2006). Additionally, prototype similarity has particularly been found to enhance the predictive validity of the TPB (Rivis et al., 2006). A possible explanation from possible selves theory is that similarity can present core-values of the self-image. Adults, and perhaps young adults, tend to have a consistent and stable sense of the self (Diehl, Jacobs, & Hastings, 2006). Individuals not only hold a view of the present self, but also conceptions of how they could be in the future (Markus & Nurius, 1986). Negatively evaluated possible selves are likely to be 'feared' and thus will be avoided, whereas positive evaluated selves will be 'desired' which will activate an approach system (Higgins, 1996; Quinlan, Jaccard, & Blanton, 2006).

Limitations

Some limitations of the present research should be acknowledged. First, the sample mainly consisted of higher educated, female participants of Western origin. Importantly, national data shows that individuals from Western and non-Western origin consume relatively similar amounts of alcohol (Statistics Netherlands, 2013). Given this finding, it is expected that ethnic origin would not have changed the influenced of prototype perceptions. Similarly, the study was performed within the Dutch drinking culture. Thus, conclusions as to whether other North American or EU countries would produce different result cannot be drawn. Furthermore, females and males generally differ in their alcohol consumption (Statistics Netherlands, 2013). An additional analysis showed that for females only, stability of abstainer prototype similarity moderated the prototype-behaviour relationship. This may be explained by the more feminine description of the abstainer prototype and the fact that females and males differ in their focus of characterisation (van Lettow, Vermunt, et al., 2013). As a result, it may be more acceptable for females to identify with the abstainer prototype by their (non-)drinking behaviour than for males. Future research could attempt to unravel such patterns and examine how stable such perceptions are. Second, the prototypes being assessed were relevant among young adult populations (van Lettow, Vermunt, et al., 2013). It may be that certain prototypes, such as drunk and tipsy prototypes, are less relevant for adolescents and children as they are likely to lack drinking experience. Third, the present study is based on a prospective correlational design. This design may prevent us from drawing causal conclusions. Future longitudinal and experimental studies are necessary to replicate the presented patterns.

Implications and further directions

The following implications can be drawn from this study. First, the finding that both the abstainer and drunk prototypes explained intentions confirms the suggestion that both healthy and risky prototypes constitute useful cognitive targets for interventions (Rivis et al., 2006) and can help explain behaviours. The results also suggest that the undesirable drunk prototype (generally a low favourability and similarity) can be an avoidance-goal, whereas the abstainer prototype may be an approach-goal for abstaining or moderate drinking individuals (van Lettow, de Vries, et al., 2013). It seems plausible that the abstainer and drunk prototypes can be contrasted with the self-image. More specifically, abstaining or moderately drinking individuals may aim to avoid negative characteristics of the drunk prototype and to achieve positive characterisation of the abstainer prototype. The reverse may be true for heavy drinking individuals.

Furthermore, prototype similarity especially enhanced the predictive validity when perceptions were stable. Therefore, the second implication is that in order to target intentions focusing on stability of similarity to prototypes is likely to be important. Similarity to the abstainer and more reachable moderate drinker could be enhanced, whereas distancing could be encouraged from the drunk, especially among individuals with unstable prototype perceptions. Two strategies are suggested by previous research. First, distancing from a prototype may help in changing behaviour or maintaining behavioural change (Dijkstra & Borland, 2003; Gerrard, Gibbons, Lane, & Stock, 2005; Lane, Gibbons, O'Hara, & Gerrard, 2011). This can be achieved by guiding drinkers in contemplating on characteristics and emphasising negative consequences of resembling the drunk prototype (Blanton et al., 1997). Additionally, providing normative feedback can show heavy drinking individuals that they are usually described with negative characteristics by their peers, whereas they would be valued

with more positive characteristics when they would resemble a moderate drinker (van Lettow, Vermunt, et al., 2013). A second strategy is guiding individuals in forming implementation intentions. The results of Godin et al. (2010) found that for a health behaviour, implementation intentions were only effective in explaining behaviour 6 months later among those with unstable intentions. Rivis and Sheeran (2013) found that implementation intentions can overcome the effect of binge drinker prototypes on behaviour because it fosters self-regulation by heightening people's self-focused attention. This strategy can overcome the influence of prototypes and unstable intentions (Godin et al., 2010; Rivis & Sheeran, 2013). The formulation of plans is thought to facilitate the stabilisation of intentions (Gollwitzer, 1999) and is likely to help overcome the prototypes' influence. Finally, the potentially moderating role of stability of prototypes corresponding with other behaviours should be investigated.

To conclude, the present study provides insights into the moderating role of stability of prototype perceptions in the relation of prototype perceptions to intentions and behaviour. In sum, stability regarding the abstainer and drunk prototypes' perceptions moderated the prototype-intentions relationship. Greater stability is associated with greater consistency of prototype-intentions relationships, but had no effect on direct relationships with behaviour. Although research needs to investigate what factors influence the stability of prototype perceptions, the results suggest targeting stable perceptions of prototypes' similarity that explain intentions in order to change intentional (drinking) behaviour.

References

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), Action control: From cognition to behavior (pp. 11-39). Berlin, Germany: Springer-Verlag.

Ajzen, I. (1991). The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211. doi: 10.1016/0749-5978(91)90020-T

Ajzen, I. (1996). The directive influence of attitudes on behavior. In P. Gollwitzer & J. A. Bargh (Eds.), Psychology of action (pp. 385-403). New York: Guilford.

Andrews, J. A., Hampson, S. E., Barckley, M., Gerrard, M., & Gibbons, F. X. (2008). The effect of early cognitions on cigarette and alcohol use during adolescence. Psychology of Addictive Behaviors, 22(1), 96-106. doi: 10.1037/0893-164x.22.1.96

Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. British Journal of Social Psychology, 40, 471-499. doi: 10.1348/014466601164939

Blanton, H., Gibbons, F. X., Gerrard, M., Conger, K. J., & Smith, G. E. (1997). Role of family and peers in the development of prototypes associated with substance use. Journal of Family Psychology, 11(3), 271-288. doi: 10.1037/0893-3200.11.3.271

Bullers, S., Cooper, M. L., & Russell, M. (2001). Social networks drinking and adult alcohol involvement: A longitudinal exploration of the direction of influence. Addictive Behaviors, 26(2), 181-199. doi: 10.1016/S0306-4603(00)00099-X

Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behavior: A review and avenues for further research. Journal of Applied Social Psychology, 28(15), 1429-1464. doi: 10.1111/j.1559-1816.1998.tb01685.x

Conner, M., Sheeran, P., Norman, P., & Armitage, C. J. (2000). Temporal stability as a moderator of relationships in the theory of planned behaviour. British Journal of Social Psychology, 39(4), 469-493. doi: 10.1348/014466600164598

Cooke, R., & Sheeran, P. (2004). Moderation of cognition-intention and cognition-behaviour relations: A meta-analysis of properties of variables from the theory of planned behaviour. British Journal of Social Psychology, 43(2), 159-186. doi: 10.1348/0144666041501688

Cooke, R., & Sheeran, P. (2013). Properties of intention: component structure and consequences for behavior, information processing, and resistance. Journal of Applied Social Psychology, 43(4), 749–760. doi: 10.1111/jasp.12003

Cooke, R., Sniehotta, F., & Schüz, B. (2007). Predicting binge-drinking behaviour using an extended TPB: Examining the impact of anticipated regret and descriptive norms. Alcohol & Alcoholism, 42(2), 84-91. doi: 10.1093/alcalc/agl115

Danielsson, A. K., Wennberg, P., Hibell, B., & Romelsjö, A. (2011). Alcohol use, heavy episodic drinking and subsequent problems among adolescents in 23 European countries: Does the prevention paradox apply? Addiction, 107(1), 71-80. doi: 10.1111/j.1360-0443.2011.03537.x

de Vries, H., Backbier, E., Kok, G., & Dijkstra, M. (1995). The impact of social influences in the context of attitude, self-efficacy, intention, and previous behavior as predictors of smoking onset. Journal of Applied Social Psychology, 25(3), 237-257. doi: 10.1111/j.1559-1816.1995.tb01593.x

Diehl, M., Jacobs, L. M., & Hastings, C. T. (2006). Temporal stability and authenticity of self-representations in adulthood. Journal of Adult Development, 13(1), 10-22. doi: 10.1007/s10804-006-9001-4

Dijkstra, A., & Borland, R. (2003). Residual outcome expectations and relapse in ex-smokers. Health Psychology, 22(4), 340-346. doi: 10.1037/0278-6133.22.4.340

Fishbein, M., & Ajzen, I. (2010). Predicting and changing behavior: The reasoned action approach. New York: Psychology Press.

Gerrard, M., Gibbons, F. X., Brody, G. H., Murry, V. M., Cleveland, M. J., & Wills, T. A. (2006). A theory-based dual-focus alcohol intervention for preadolescents: The strong African American families program. Psychology of Addictive Behaviors, 20(2), 185-195. doi: 10.1037/0893-164x.20.2.185

Gerrard, M., Gibbons, F. X., Houlihan, A. E., Stock, M. L., & Pomery, E. A. (2008). A dual-process approach to health risk decision making: The prototype willingness model. Developmental Review, 28(1), 29-61. doi: 10.1016/j.dr.2007.10.001

Gerrard, M., Gibbons, F. X., Lane, D. J., & Stock, M. L. (2005). Smoking cessation: Social comparison level predicts success for adult smokers. Health Psychology, 24(6), 623-629. doi: 10.1037/0278-6133.24.6.623

Gerrard, M., Gibbons, F. X., Reis-Bergan, M., Trudeau, L., Vande Lune, L. S., & Buunk, B. (2002). Inhibitory effects of drinker and nondrinker prototypes on adolescent alcohol consumption. Health Psychology, 21(6), 601-609. doi: 10.1037//0278-6133.21.6.601

Gerrard, M., Gibbons, F. X., Stock, M. L., Vande Lune, L. S., & Cleveland, M. J. (2005). Images of smokers and willingness to smoke among African American pre-adolescents: An application of the prototype/willingness model of adolescent health risk behavior to smoking initiation. Journal of Pediatric Psychology, 30(4), 305-318. doi: 10.1093/jpepsy/jsi026

Gerrits, J. H., de Ridder, D. T. D., de Wit, J. B. F., & Kuijer, R. G. (2009). Cool and independent or foolish and undisciplined? Adolescents' prototypes of (un)healthy eaters and their association with eating behaviour. Appetite, 53(3), 407-413. doi: 10.1016/j.appet.2009.08.008

Gibbons, F. X., & Gerrard, M. (1995). Predicting young adults' health risk behavior. Journal of Personality and Social Psychology, 69(3), 505-517. doi: 10.1037/0022-3514.69.3.505

Gibbons, F. X., Gerrard, M., & Lane, D. J. (2003). A social reaction model of adolescent health risk. In J. Suls & K. A. Wallston (Eds.), Social Psychological Foundations of Health and Illness (pp. 107–136). Malden, MA.: Blackwell Publishing.

Gibbons, F. X., Gerrard, M., & McCoy, S. B. (1995). Prototype perception predicts (lack of) pregnancy prevention. Personality and Social Psychology Bulletin, 21(1), 85-93. doi: 10.1177/0146167295211009

Godin, G., Belanger-Gravel, A., Amireault, S., Gallani, M. C. B. J., Vohl, M. C., & Peusse, L. (2010). Effect of implementation intentions to change behaviour moderation by intention stability. Psychological Reports, 106(1), 147-159. doi: 10.2466/PR0.106.1.147-159

Gollwitzer, P. (1999). Implementation intentions: strong effects of simple plans. American Psychologist, 54(7), 493-503. doi: 10.1037/0003-066X.54.7.493

Hampson, S. E., Andrews, J. A., & Barckley, M. (2008). Childhood predictors of adolescent marijuana use: Early sensation-seeking, deviant peer affiliation, and social images. Addictive Behaviors, 33(9), 1140-1147. doi: 10.1016/j.addbeh.2008.04.010

Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. Behavior Research Methods, 41(3), 924-936. doi: 10.3758/BRM.41.3.924

Higgins, E. T. (1996). Ideals, oughts, and regulatory focus. New York: Guilford.

Hyde, M. K., & White, K. M. (2009). Similarity not favourability. The role of donor prototypes in predicting willingness to donate organs while living. Journal of Health Psychology, 14(7), 888-898. doi: 10.1177/1359105309340990

Keer, M., Conner, M., Van den Putte, B., & Neijens, P. (2013). The temporal stability and predictive validity of affect-based and cognition-based intentions. British Journal of Social Psychology. doi: 10.1111/bjso.12034

Lane, D. J., Gibbons, F. X., O'Hara, R. E., & Gerrard, M. (2011). Standing out from the crowd: How comparison to prototypes can decrease health-risk behavior in young adults. Basic and Applied Social Psychology, 33(3), 228-238. doi: 10.1080/01973533.2011.589296

Markus, H. R., & Nurius, P. (1986). Possible selves. American Psychologist, 41(9), 954-969. doi: 10.1037/0003-066X.41.9.954

McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: a meta-analysis. Health Psychology Review, 5(2), 97-144. doi: 10.1080/17437199.2010.521684

National Institute for Public Health and the Environment. (2005). Indicatoren voor de Monitor Volksgezondheid. Alcoholgebruik-basis. [Indicators of Monitor Public Health. Alcohol use - basics] Retrieved April 10 2010, from https://www.monitorgezondheid.nl/volksindicatoren.aspx

Neighbors, C., Larimer, M. E., & Lewis, M. A. (2004). Targeting misperceptions of descriptive norms: Efficacy of a computer-delivered personalized normative feedback intervention. Journal of Consulting and Clinical Psychology, 72(3), 434-447. doi: 10.1037/0022-006X.72.3.434

Norman, P., Armitage, C. J., & Quigley, C. (2007). The theory of planned behavior and binge drinking: Assessing the impact of binge drinker prototypes. Addictive Behaviors, 32(9), 1753-1768. doi: 10.1016/j.addbeh.2006.12.009

Oesterle, S., Hill, K. G., Hawkins, J. D., Guo, J., Catalano, R. F., & Abbot, R. D. (2004). Adolescent heavy episodic drinking trajectories and health in young adulthood. Journal of Studies on Alcohol, 65(2), 204-212.

Oostveen, T., Knibbe, R., & de Vries, H. (1996). Social influences on young adults' alcohol consumption: Norms, modeling, pressure, socializing, and conformity. Addictive Behaviors, 21(2), 187–197. doi: 10.1016/0306-4603(95)00052-6

Ouellette, J. A., Hessling, R., Gibbons, F. X., Reis-Bergan, M., & Gerrard, M. (2005). Using images to increase exercise behavior: Prototypes versus possible selves. Personality and Social Psychology Bulletin, 31(5), 610-620. doi: 10.1177/0146167204271589

Petty, R. E., & Krosnick, J. A. (Eds.). (1995). Attitude strength: Antecedents and consequences. Hillsdale, NJ: Lawrence Erlbaum.

Quinlan, S. L., Jaccard, J., & Blanton, H. (2006). A decision theoretic and prototype conceptualization of possible selves: Implications for the prediction of risk behavior. Journal of Personality, 74(2), 599-630. doi: 10.1111/j.1467-6494.2006.00386.x

Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: a meta-analysis. Current Psychology, 22(3), 218-233. doi: 10.1007/s12144-003-1018-2

Rivis, A., & Sheeran, P. (2013). Automatic risk behavior: Direct effects of binge drinker stereotypes on drinking behavior. Health Psychology, 32(5), 571-580. doi: 10.1037/a0029859

Rivis, A., Sheeran, P., & Armitage, C. J. (2006). Augmenting the theory of planned behaviour with the prototype/willingness model: Predictive validity of actor versus abstainer prototypes for adolescents' health-protective and health-risk intentions. British Journal of Health Psychology, 11(3), 483-500. doi: DOI: 10.1348/135910705X70327

Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. European Review of Social Psychology, 12(1), 1-36. doi: 10.1080/14792772143000003

Sheeran, P., & Abraham, C. (2003). Mediator of moderators: Temporal stability of intention and the intention-behavior relation. Personality and Social Psychology Bulletin, 29(2), 205-215. doi: 10.1177/0146167202239046

Sheeran, P., Orbell, S., & Trafimow, D. (1999). Does the temporal stability of behavioral intentions moderate intention-behavior and past behavior-future behavior relations? Personality and Social Psychology Bulletin, 25(6), 724-730. doi: 10.1177/0146167299025006007

Skalle, S., & Rise, J. (2006). The relationship between smoker and nonsmoker prototypes and smoking status among 14-year-old Norwegians. Addictive Behaviors, 31(1), 57-68. doi: 10.1016/j.addbeh.2005.04.009

Statistics Netherlands. (2000). Hoe doet CBS dat nou? Standaarddefinitie allochtonen [How does statistics netherlands
do it? Standard definition immigrants] Retrieved April 30, 2010, from http://www.cbs.nl/NR/rdonlyres/26785779-AAFE-4B39-AD07-59F34DCD44C8/0/index1119.pdf

Statistics Netherlands. (2010). Gezondheid, leefstijl, gebruik van zorg [Health, lifestyle, use of health care]. Retrieved April 10 2010, from http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=03799&D1=210-214&D2=0-2,18-26,47-51&D3=a&D4=l&HDR=T,G2&STB=G1,G3&VW=T

Statistics Netherlands. (2013). Gezondheid, leefstijl, gebruik van zorg [Health, lifestyle, use of health care], from http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=81177NED&D1=9-13&D2=a&D3=0&D4=l&HDR=G3,G2&STB=G1,T&VW=T

van Lettow, B., de Vries, H., Burdorf, A., Norman, P., & van Empelen, P. (2013). Associations between abstainer, moderate and heavy drinker prototypes and drinking behavior in young adults. Psychology & Health, 28(12). doi: 10.1080/08870446.2013.821473

van Lettow, B., Vermunt, J. K., de Vries, H., Burdorf, A., & van Empelen, P. (2013). Clustering of drinker prototype characteristics: What characterizes the typical drinker? British Journal of Psychology, 104(3), 382–399. doi: 10.1111/bjop.12000

World Health Organisation. (2010). Alcohol Retrieved April 14 2010, from http://www.who.int/mediacentre/factsheets/fs349/en/index.html

Yi, Y. (1989). On the evaluation of main effects in multiplicative regression models. Journal of the Market Research Society, 31(1), 133-138.

Zimmermann, F., & Sieverding, M. (2010). Young adults' social drinking as explained by an augmented theory of planned behaviour: The roles of prototypes, willingness, and gender. British Journal of Health Psychology, 15(3), 561-581. doi: 10.1348/135910709X476558

Tables

Table 1

Means, Standard Deviations, and Correlations for the Augmented Theory of Planned Behaviour (N = 410)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Drinking behaviour T1	-															
2	Drinking behaviour T2	.78	-														
3	Intention T2	-.41	-.43	-													
4	Attitude T1	.26	.28	-.34	-												
5	Descriptive norms T1	-.41	-.40	.42	-.38	-											
6	PBC T1	-.43	-.46	.40	-.30	.33	-										
7	Abstainer Fav. T1	-.35	-.32	.34	-.29	.31	.35	-									
8	Moderate drinker Fav. T1	.02	.03	-.05	.16	-.02	-.03	.29	-								
9	Heavy drinker Fav. T1	.38	.37	-.35	.29	-.30	-.31	-.26	.25	-							
10	Tipsy Fav. T1	.27	.26	-.32	.42	-.27	-.26	-.18	.22	.45	-						
11	Drunk Fav. T1	.31	.27	-.42	.24	-.33	-.23	-.28	.01	.56	.52	-					
12	Abstainer Sim. T1	-.45	-.47	.51	-.41	.36	.48	.52	-.09	-.38	-.39	-.36	-				

13	Moderate drinker Sim. T1	.17	.15	-.23	.39	-.18	-.25	-.26	.37	.24	.25	.14	-.44	-		
14	Heavy drinker Sim. T1	.56	.56	-.38	.24	-.31	-.45	-.35	.04	.42	.27	.29	-.43	.25	-	
15	Tipsy Sim. T1	.37	.33	-.49	.42	-.33	-.43	-.36	.11	.32	.55	.36	-.61	.41	.45	-
16	Drunk Sim. T1	.42	.42	-.49	.23	-.35	-.36	-.36	-.05	.29	.29	.45	-.45	.20	.56	.56	-
	M	7.27	6.55	4.84	4.12	3.99	6.10	4.89	4.65	3.87	4.23	3.29	3.73	4.05	1.91	3.35	1.81
	SD	9.79	8.79	1.84	1.31	1.96	.93	.73	.61	.69	.67	.71	2.00	1.77	1.14	1.59	1.09

Note. Drinking behaviour was assessed at one-month follow-up. All other variables were assessed at baseline. ‘Fav.’ relates to prototype favourability and ‘Sim.’ relates to prototype similarity. Correlations of $r \geq .11$ are significant at $p \leq 0.05$ and those of $r \geq .15$ are significant at $p \leq .001$.

Table 2

Explaining Intention at Follow-Up, Including Interactions by Stability of Prototype Favourability (3a) and Similarity (3b) (N = 410)

2a	Intention T2	Step 1	Step 2	Step 3	Step 4	Step 5
		β	β	β	β	β
	Drinking behaviour T1	-.41***	-.19***	-.13**	-.14***	-.14**
	Attitude		-.14**	-.10*	-.10	-.09
	PBC		.20***	.17***	.16***	.16***
	Descriptive norms		.22***	.17***	.17***	.16***
	Favourability T1					
	Abstainer			.10*	.07	.09
	Moderate drinker			-.04	-.04	-.04
	Heavy drinker			-.01	-.03	-.03
	Tipsy			-.01	-.00	-.03
	Drunk			-.22***	-.20***	-.19***
	Favourability stability					
	Abstainer				.03	.01
	Moderate drinker				-.09	-.07
	Heavy drinker				-.00	-.01
	Tipsy				-.03	.27
	Drunk				-.01	-.01
	Favourability by stability					
	Abstainer					.06
	Moderate drinker					.01

	Heavy drinker					-.00
	Tipsy					-.31
	Drunk					.02
	R^2	.17	.30	.36	.37	.37
	R^2 change	-	.14***	.06***	.01	.01
	Model F	81.27	43.66	24.64	16.19	12.08
2b	Drinking behaviour T1	-.41***	-.19***	-.08	-.08	-.05
	Attitude		-.14**	-.07	-.07	-.04
	PBC		.20***	.09	.07	.06
	Descriptive norms		.22***	.16***	.16***	.15***
	Similarity T1					
	Abstainer			.20***	.19***	.21***
	Moderate drinker			.04	.00	.01
	Heavy drinker			.02	.02	-.00
	Tipsy			-.13*	-.10	-.05
	Drunk			-.21***	-.17**	-.12
	Similarity stability					
	Abstainer				-.02	.00
	Moderate drinker				-.08	-.08
	Heavy drinker				-.00	-.02
	Tipsy				.01	.00
	Drunk				.11*	.08
	Similarity by stability					

Abstainer					.12**
Moderate drinker					-.04
Heavy drinker					-.03
Tipsy					.04
Drunk					-.13*
R^2	.17	.30	.41	.42	.45
R^2 change	-	.14***	.11***	.01	.02**
Model F	81.27	43.66	30.83	20.61	16.50

Note. Paths are significant at the following levels: *p ≤ 0.05, **p ≤ 0.01, ***p ≤.001.

Presented are standardised betas. F-values were significant at p < .001.

Table 3

Explaining Drinking Behaviour (Week Total) at Follow-Up, Including Interactions by Stability of Prototype Favourability (3a) and Similarity (3b) (N = 410)

3a	Drinking behaviour T2	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
		β	β	β	β	β	β
	Drinking behaviour T1	.78***	.72***	.67***	.66***	.66***	.66***
	Intention T2		-.14***	-.09*	-.09*	-.09*	-.09*
	Attitude			.02	.02	.03	.03
	PBC			-.12***	-.12***	-.11**	-.11**
	Descriptive norms			-.04	-.04	-.05	-.05
	Favourability T1						
	Abstainer				.02	.01	.01
	Moderate drinker				-.02	-.02	-.02
	Heavy drinker				.06	.08	.07
	Tipsy				.02	.02	.02
	Drunk				-.05	-.08	-.08
	Favourability stability						
	Abstainer					-.04	-.04
	Moderate drinker					-.05	-.05
	Heavy drinker					.07	.08
	Tipsy					.03	.00
	Drunk					-.04	-.05
	Favourability by stability						
	Abstainer						-.02

	Moderate drinker						-.01
	Heavy drinker						-.00
	Tipsy						.03
	Drunk						.01
	R^2	.61	.62	.63	.64	.64	.64
	R^2 change	-	.02***	.01***	.00	.01	.00
	Model F	624.01	332.39	140.26	69.93	47.14	35.00
3b	Drinking behaviour T1	.78***	.72***	.67***	.60***	.60***	.60***
	Intention T2		-.14***	-.09*	-.07	-.07	-.07
	Attitude			.02	.04	.04	.03
	PBC			-.12***	-.09*	-.09*	-.09*
	Descriptive norms			-.04	-.04	-.04	-.04
	Similarity T1						
	Abstainer				-.11**	-.13**	-.13**
	Moderate drinker				-.05	-.06	-.06
	Heavy drinker				.14***	.13**	.10*
	Tipsy				-.13**	-.11**	-.09
	Drunk				.03	.03	.04
	Similarity stability						
	Abstainer					.06	.05
	Moderate drinker					-.05	-.04
	Heavy drinker					-.03	-.03
	Tipsy					.02	.03

Drunk					.01	.01
Similarity by stability						
Abstainer						-.05
Moderate drinker						-.01
Heavy drinker						-.03
Tipsy						.04
Drunk						-.03
R^2	.61	.62	.63	.66	.66	.67
R^2 change	-	.02***	.01***	.02***	.01	.00
Model F	624.01	332.39	140.26	76.67	51.67	38.94

Note. Paths are significant at the following levels: *p ≤ 0.05, **p ≤ 0.01, ***p ≤.001. Presented are standardised betas. F-values were significant at p < .001. ‘Fav.’ relates to prototype favourability and ‘Sim.’ relates to prototype similarity.

Figures

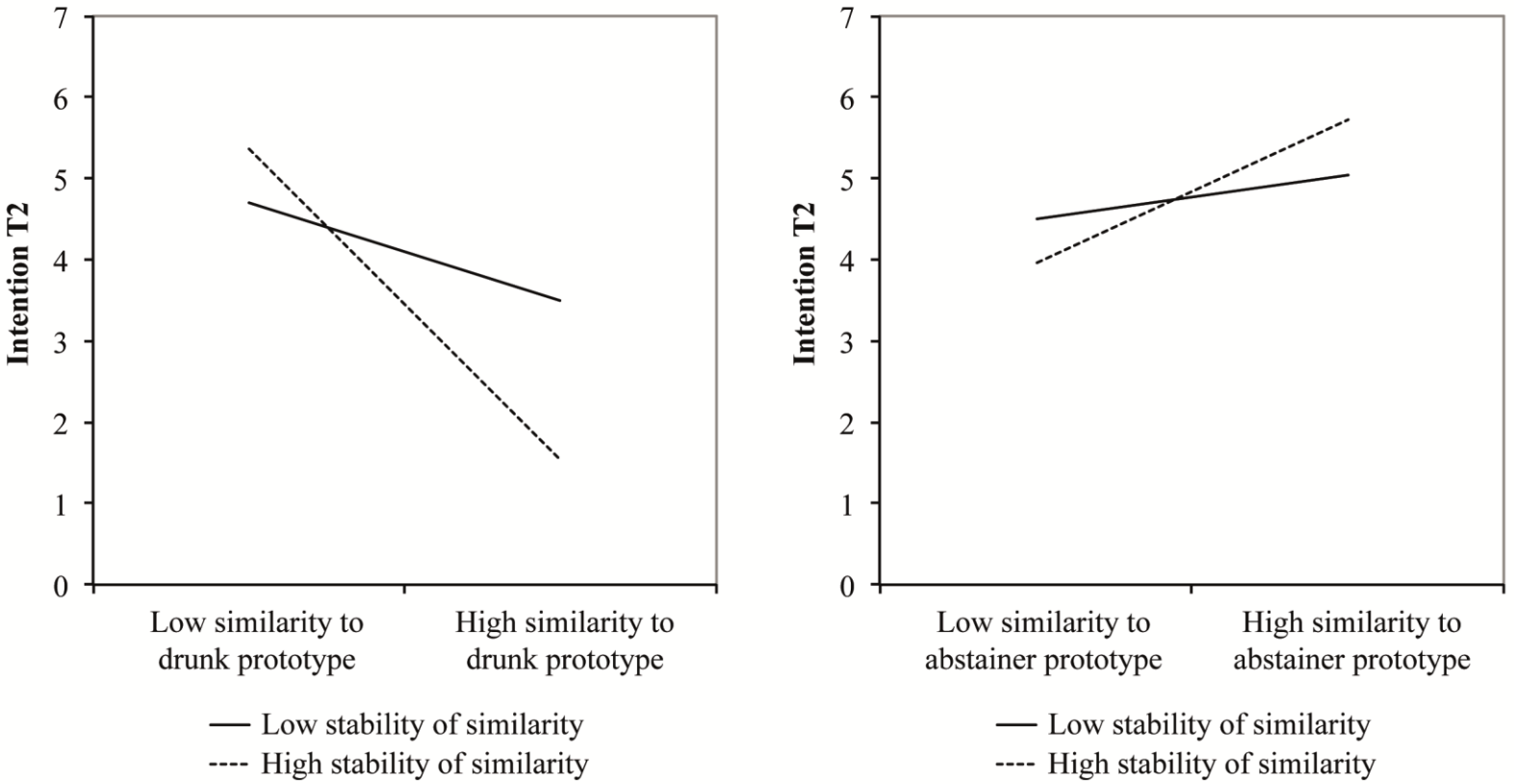

Figure 1. Intention (T2) explained by moderation of similarity to the drunk prototype (1a) and abstainer prototype (1b) by similarity stability

Footnotes

[1] According to Statistics Netherlands, 'Western origin' includes all countries in Europe (except for Turkey), North America, Oceania, Japan, and Indonesia (including the former Dutch East Indies). Non-Western origin includes Turkey and all countries in Africa, Latin-America, and Asia (Statistics Netherlands, 2000).

[2] The original TPB was adapted by combining a subjective and descriptive norm (also referred to social modelling by some scholars, e.g., de Vries, Backbier, Kok, & Dijkstra, 1995) to better capture social norms (Fishbein & Ajzen, 2010). However, the constructs are found to be distinct (de Vries et al., 1995; Oostveen, Knibbe, & de Vries, 1996; Rivis & Sheeran, 2003). At present, only descriptive norms were assessed for three reasons. First, young people are especially susceptible to descriptive norms (Rivis & Sheeran, 2003) as they tend to select peer groups based on the group members' drinking behaviour and are likely to conform to peers' behaviour (Bullers, Cooper, & Russell, 2001; Oostveen et al., 1996). Second, Dutch studies (de Vries et al., 1995; Oostveen et al., 1996) and a meta-analysis (Rivis & Sheeran, 2003) found that descriptive norms have a larger effect in explaining intention than subjective norms, especially in the case of health-risk behaviour. Interventions targeting descriptive norms by normative feedback have effectively changed alcohol consumption among young adults (e.g., Neighbors, Larimer, & Lewis, 2004).

[3] Additional analyses were performed based on the split median of stability of each prototype. Similar results were found: only the stability of similarity to the abstainer and drunk prototypes moderated the prototype-intention relationship.

[4] The only minor difference found in additional analyses including all variables that significantly explained intentions was that the main effect of abstainer favourability was no longer significant at step 3. As a result, prototype similarity seems to be a stronger predictor than favourability when the constructs are assessed simultaneously. For all other significant variables similar standardised betas were found as for the presented models (Table 2 and 3).