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## 'I quit' versus 'I'm sorry I used': A preliminary investigation of variations in narrative ending and transportation

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A narrative experience can partly depend on how a narrative ends or concludes. This study examined prevention effects of personal drug use narratives varying by type of ending and gender of protagonist. Additionally, the role of transportation in the persuasion process, particularly the association between transportation and cocaine use intentions, both directly and indirectly, through the mediation of anti-drug and pro-drug expectancies was assessed. A total of 500 undergraduate students at a large northern university in the UK participated in the experiment which was a  $2 \times 2 \times 2$  mixed design with ending (progressive *vs.* regressive) and gender of protagonist (male *vs.* female) as within-participants factors and participant gender (male *vs.* female) as between-participants factors. The results demonstrated significant main effects for ending, gender of protagonist in the narrative and participant gender, but no interaction effects. Finally, greater transportation was associated with stronger anti-cocaine expectancies, which were further associated with lower cocaine use intentions. Important theoretical and empirical implications are discussed.

**Keywords:** cocaine use; progressive ending; regressive ending; transportation

### Introduction

There has been a recent momentum in research investigating efficacy of personal narratives or stories in conveying health-related information in varied contexts, such as alcohol use, smoking, tanning bed use and sexually transmitted infection (e.g. Braverman, 2008; Dunlop, Wakefield, & Kashima, 2010; Greene, Campo, & Banerjee, 2010; Mevissen, Ruiter, Meertens, & Schaalma, 2010). Personal narratives can influence healthy lifestyle behaviours (or health promotion efforts) because narrative health messages provide a subtle form of persuasion (Dal Cin, Zanna, & Fong, 2004) and make it difficult for readers to discount them as these are the lived experiences of others (Slater, 2002). The experience of transportation into the narrative world or immersion into a story (Green & Brock, 2000) may overcome

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resistance (e.g. counter attitudes and beliefs) to adopt or maintain specific behaviours (Kreuter et al., 2007).

Whereas there have been reviews and meta-analyses reported on the effectiveness of narrative *versus* non-narrative health messages (Allen & Preiss, 1997; Hinyard & Kreuter, 2007), research comparing one form or narrative to another are limited. Hinyard and Kreuter (2007) suggest that more research is warranted that examines the efficacy of health narratives varying on different dimensions such as, fact *versus* fiction, first- *versus* third-person and presented in different narrative forms (e.g. conversations, dramas). Understanding the effects of these variations in narratives may influence the process of selecting or developing narratives for health-behaviour interventions. However, efficacy of narrative variations may be better understood as interplay between the narrative message and some message receiver characteristic (such as self-efficacy, see Mevissen et al., 2010).

Past research on examining persuasiveness of narratives or testimonials (in varied health behaviour contexts) has focused either on message content (e.g. Feeley, Marshall, & Reinhart, 2006; Slater, Buller, Waters, Archibeque, & LeBlanc, 2003) or has integrated both narrative and audience characteristics (e.g. Braverman, 2008; Kopfman, Smith, Ah Yun, & Hodges, 1998). Our objective in this study was to explore factors related to both narrative framing and receiver characteristics that will help expand our knowledge about the process of persuasion.

Specifically, in this study, we examine effects of variations in narrative framing (specifically, differences in ending and gender of protagonist) and receiver characteristics (participant gender) on a persuasive outcome (i.e. narrative transportation). Transportation is the experience of being lost or absorbed in a narrative and is one of the primary mechanisms that lead to belief or attitude change (Green & Brock, 2000). Typically, a personal narrative involves a character who tells a story of his or her personal experience (Braverman, 2008). We chose personal narratives about cocaine use because cocaine use is a significant health issue among young adults in the UK (The Information Center, 2007). Results from the 2005/2006 British Crime Survey reveal that 16–24 year olds reported the highest levels of drug use compared to all other age-groups (Roe & Man, 2006). Prior research has also indicated that young adults are frequent visitors to anti-drug websites and are exposed to personal testimonials about drug experiences posted voluntarily on these sites (Hornik et al., 2002). Understanding how variations in narrative framing affect transportation, and subsequently drug use intention, will aid in expanding our understanding about the utility of narratives for prevention purposes.

### *Theoretical foundations*

This research is guided by transportation theory (Green & Brock, 2000). Transportation theory (Green, 2004; Green & Brock, 2000) defines transportation as a process characterised by the experience of losing track of time, failure to observe events going on around the reader, and the feeling of complete immersion into the world of the narrative. The theory contends that transportation may be the primary mechanism that underlies the effect of a narrative message (or stories). Transportation may further influence beliefs and attitudes in response to a story (Green & Brock, 2000) and overall persuasion (conceptualised as a composite of message evaluation, message agreement and behavioural intention) in response to

health messages (Braverman, 2008). As well, Dunlop et al. (2010) examined the role of transportation in eliciting affective and cognitive responses (affective responses operationalised as a composite of fearful, anxious, disgusted and guilty; and cognitive responses operationalised as number of negative cognitions subtracted from the number of positive cognitions) to a narrative health message. Negative cognitions were defined as responses that expressed disagreement with the message of the advertisement, negative intention to comply with the recommendations, or derogations of the advertisement, the source or the message. Positive thoughts were responses that expressed agreement with the message of the advertisement or positive thoughts towards the advertisement, the source or the message. They concluded that transportation led to more positive cognitive thoughts, self-referencing and emotions (Dunlop et al., 2010).

### *Ending variations in narratives and transportation*

One dimension that helps contextualise narratives into different forms is the ending. The way in which a story ends has been framed in two ways: (a) progressive endings, or 'success' stories that directly or indirectly encourage the audience to follow the proffered example and (b) regressive endings, or 'failure' stories that directly or indirectly encourage the audience to learn from the example and not engage in similar behaviours (Gergen & Gergen, 1986; Smorti, 2004). Smorti (2004) elaborates on this difference, '...whereas the events in progressive stories advance towards a more positive goal (the well-being and success of a protagonist), in regressive stories there is a course of deterioration towards a more negative conclusion, ending with a protagonist's failure' (pp. 146–147). Such differences in framing of narratives based on ending may lead to differences in audience perceptions (Sonenshein, 2010).

When applied to anti-drug personal narratives, the progressive endings may be framed in a way where the protagonist realises the mistake made using drugs, takes some action to redeem the behaviour, and comes out 'clean' or moving forward at the end. Similarly, regressive endings may be framed in a way where the protagonist repents over the choices and ends the narrative with a description of how he or she was ruined or failed due to drugs. This form of framing can also be compared to gain *versus* loss framing in health message design (Rothman, Bartels, Wlaschin, & Salovey, 2006; Werrij, Ruiters, Riet, & De Vries, 2012). Loss-framed messages typically emphasise the costs of failing to take action (e.g. 'If you do not floss your teeth daily, particles of food remain in the mouth, collecting bacteria, which causes bad breath'), and gain-framed messages specify the benefits of taking action ('Flossing your teeth daily removes particles of food in the mouth, avoiding bacteria, which promotes great breath'; example from Mann, Sherman, & Updegraff, 2004).

Similarity between loss *versus* gain framing and regressive *versus* progressive framing arises due to the focus on costs *versus* benefits. Whereas progressive ending narratives emphasise attainment of a positive goal (similarity to gain-framing), regressive ending narratives signify consequence and failure (similarity to loss-framing). However, use of progressive or regressive narrative endings in a narrative context is not contextualised in a summary statement, which is typically used in most empirical research on gain *versus* loss framing (e.g. gain-framed appeal – 'If you perform the advocated action, desirable outcome X will be obtained'; loss-framed

appeal – ‘If you do not perform the advocated action, undesirable outcome Y will be obtained’; O’Keefe & Jensen, 2007).

Given a paucity of research on progressive *versus* regressive ending stories, we borrow from the vast literature on loss and gain frame messages. A meta-analytic review of 93 studies ( $n=21,656$ ) reported that in health prevention messages, gain-framed appeals, which emphasise the advantages of compliance with the communicator’s recommendation, are statistically significantly more persuasive than loss-framed appeals, which emphasise the disadvantages of non-compliance (O’Keefe & Jensen, 2007). Using the same corollary, it seems that progressive ending narratives will be more persuasive than regressive ending narratives. As well, current research informs us that in case of narratives, transportation is a precursor to persuasive outcomes (Dunlop et al., 2010; Wang & Calder, 2006), and a focus of this study.

We do acknowledge that although we are drawing similarities from message framing literature, but there is currently no empirical evidence for how message framing affects transportation. We can assume that narratives with progressive endings are a better fit with classic story structures (e.g. Campbell’s (1949) hero’s journey; McAdams’ (2006) study of redemptive life narratives), and therefore may be more transporting than narratives with regressive endings; but lack of empirical evidence precludes us from forwarding a hypothesis. Therefore, we ask:

*RQ1:* How will narratives with progressive ending *versus* narratives with regressive endings differ in terms of transportation?

### ***Gender-matching and transportation***

Prior research has indicated that when participant and message characteristics (on varied dimensions) are matched, there are stronger effects on persuasion (e.g. Ivanov, Pfau, & Parker, 2009; Uskul & Oyserman, 2010). Although prior research on matching has been conceptualised based on participants’ attitudes or values and messages’ attitudes or values, we were interested in basic gender matching for utility of narratives. Narratives begin with a protagonist, and therefore matching of protagonist and reader (or participant) gender may result in greater transportation and immersion into story from the very onset of the narrative reading experience. Therefore, we hypothesised:

*H1:* Gender-matched narratives (i.e. male participants reading male protagonist narratives and female participants reading female protagonist narratives) will result in greater transportation than gender-unmatched narratives (i.e. male participants reading female protagonist narratives and female participants reading male protagonist narratives).

Function of transportation in the persuasion process has been investigated in prior research (e.g. Braverman, 2008; Dunlop et al., 2010; Green & Brock, 2000), and we wanted to extend this line of evidence regarding the role of transportation in affecting drug use intentions.

### ***Role of transportation***

There seems to be a consensus among researchers that increased transportation is associated with story-related beliefs/expectancies (e.g. Green, 2004; Green &

Brock, 2000), and greater overall persuasive outcomes (e.g. Dunlop et al., 2010; Wang & Calder, 2006). Therefore, we hypothesised that transportation would lead to increased anti-cocaine and decreased pro-cocaine expectancies (story/narrative congruent beliefs), further leading to lessened cocaine use intentions. In particular, we wanted to examine if the relation between transportation and cocaine use intentions (the persuasive outcome in the study) is direct, or indirect, mediated by anti- and pro-cocaine expectancies. So, we forwarded the following hypothesis:

*H2:* Anti- and pro-cocaine expectancies will mediate the relationship between transportation and intention to use cocaine.

## Method

This experiment was a  $2 \times 2 \times 2$  full-factorial mixed design with ending (regressive *vs.* progressive) and protagonist gender (male *vs.* female) as within-participants factors and participant gender (male *vs.* female) as between-participants factors. The participants read four personal narratives each, presented in three different orders to assess order effects.<sup>1</sup>

### *Participants and procedure*

A total of 500 students from undergraduate and graduate courses at a large northern university in the UK participated in the study after receiving approval from the research ethics committee. About 57% of the participants ( $n = 281$ ) were female and 14% had previously used cocaine.<sup>2</sup> Because we were interested in examining the prevention potential of anti-cocaine narratives, we excluded participants ( $n = 69$ ) who had ever used cocaine from our analyses. The mean age of remaining 431 participants was 22.20 years ( $SD = 4.99$ , range = 19–59 years; around 10% participants were non-traditional students, over the age of 25 years), 59% participants were female and 93% participants identified themselves as Caucasian, 3.5% Black and 2.5% Asian (other groups <1% each). Data collection took place outside of class and was anonymous.

Participants were seated in rooms designed for experimental data collection. Due to the sensitive nature of the questions, no two individuals were seated next to or directly behind each other. Participants were informed that the study was about college students, drug use, and they would be reading and responding to real-life stories about cocaine use. The experimental procedure consisted of three segments. In the first segment, the participants filled out a baseline questionnaire about personal cocaine use. The second section included exposure to the four personal narratives. We chose four narratives instead of one to account for (a) effects due to single message exposure only and (b) real-life testimonial reading experience because research informs us that individuals typically read numerous anti-drug testimonials at one time (Hersh, Barrett, Cappella, Appleyard, & Fishbein, 2004). After reading each narrative, participants completed the transportation scale. The third segment consisted of measures that tapped participants' reported expectancies related to cocaine use and intention to use cocaine, and demographic questions. The entire process was completed in about 30 min.



### ***Stimulus material***

The four narratives used in the study were personal stories collected from public searchable anti-drug websites that describe the negative consequences of cocaine use. The narratives appeared almost exactly as they had on the original websites, with minimum editing. Editing was done in order to make sure the narratives matched in terms of length (number of words, ranging from 311 to 317 words). Personal narratives that focused primarily on drug use other than cocaine (e.g. marijuana, amphetamines and inhalants), emphasised only the positive consequences of cocaine use, and those that were positively framed to emphasise alternatives to drug use were dropped from consideration. The selected narratives (total number: four) focused on cocaine use, and varied in terms of ending (two progressive and two regressive) and gender of protagonist (two male and two female). While all narratives presented consequences, progressive ending stated clearly that the person writing the narrative stopped using cocaine and changed his/her life for the better (thereby, reaping benefits), while the regressive narratives ended with the protagonist repenting over cocaine use and consequences of use (thereby focusing on costs). The narratives are available from Smita Banerjee.

### ***Measurement instruments***

Dependent variables included transportation, expectancies about cocaine use (positive and negative) and cocaine use intentions.

#### *Transportation*

Transportation was measured by adapting the transportation scale from Green and Brock (2000), and using 12 of the 15 items, with responses ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).<sup>3</sup> Items were altered to reflect the content of the narratives that the participants read. Sample items included, 'While I was reading the story, I could easily picture the events in it taking place', and 'I was mentally involved in the story while reading it'. Four factor analyses (principal component with varimax rotation) were performed for each of the four stories and a single-factor solution emerged each time.<sup>4</sup> A composite transportation index was created by averaging the four transportation scales ( $\alpha = 0.77$ ,  $M = 2.97$ ,  $SD = 0.42$ ) with a higher score indicating greater transportation.

#### *Expectancies about cocaine use*

The measure for expectancies about cocaine use was a modified version of the expectancies about marijuana use, created by Hersh et al. (2004), and consisted on positive and negative expectancies. Negative expectancies included nine negative outcomes of using cocaine regularly. Likelihood of each belief was measured using the stem 'How likely is it that the following would happen to you if you used cocaine nearly every month for the next 12 months?' and a five-point scale ranging from 1 (*very unlikely*) to 5 (*very likely*). Sample items were 'damage my brain,' 'become depressed,' and 'destroy relationships.' Exploratory factor analyses (principal component with varimax rotation) showed a single-factor solution, eigenvalue = 5.26, 58.42% variance, loadings above 0.6. The nine items were averaged

with a higher score indicating greater anti-cocaine expectancies ( $\alpha = 0.91$ ,  $M = 4.46$ ,  $SD = 0.70$ ).

Positive cocaine expectancies were measured by three items, 'fit in with a group I like', 'have a good time with friends', and 'get away from my problems'. Exploratory factor analyses (principal component with varimax rotation) showed a single-factor solution, eigenvalue = 1.97, 65.75% variance, loadings above 0.7. The three items were averaged with a higher score indicating greater pro-cocaine expectancies ( $\alpha = 0.74$ ,  $M = 3.61$ ,  $SD = 1.09$ ).

#### *Intention to use cocaine*

Intention to use cocaine was measured using the common question stem 'How likely is it that you will use cocaine...' with three different items: 'even once or twice, in the next 12 months' (trial use intention), 'occasionally during the next 12 months' (occasional use intention), and 'nearly every month for the next 12 months' (regular use intention). Responses were measured on five-point Likert scales ranging from 1 (*I definitely will not*) to 5 (*I definitely will*). Mean intention for trial use was 1.42 ( $SD = 0.95$ ,  $n = 492$ ), occasional use was 1.24 ( $SD = 0.73$ ,  $n = 485$ ), and regular use was 1.10 ( $SD = .46$ ,  $n = 486$ ). Overall, these were very low intentions for any type of cocaine use, and are consistent with prior studies on drug use (e.g. Hersh et al., 2004). Reliability analysis indicated a high alpha ( $\alpha = 0.84$ ), and the three items were averaged with a high score indicating higher intention to use cocaine ( $M = 1.24$ ,  $SD = 0.62$ ).

#### *Data analysis*

A 2 (ending)  $\times$  2 (protagonist gender)  $\times$  2 (participant gender) repeated-measures generalised linear model analysis was conducted to analyse the *RQ1* and *H1*. *Post hoc* tests were performed using a Bonferroni correction. For *H2*, we examined mediation hypotheses by testing two parts (Preacher & Hayes, 2008): (a) investigating the total indirect effect of transportation on intention to use cocaine through anti- and pro-cocaine expectancies and (b) testing hypotheses regarding individual mediators in the context of a multiple mediator model. In particular, the specific indirect effect associated with each putative mediator (anti- and pro-cocaine expectancies) was examined.

#### *Bootstrapping procedure*

We used bootstrapping procedures (Preacher & Hayes, 2008) to obtain estimates of total and specific indirect effects and to test their significance using confidence intervals (CIs). McKinnon, Krull, and Lockwood (2000) reason that it is possible for several mediators and suppressors to coexist in models involving multiple intervening variables, and therefore, Preacher and Hayes' (2008) tests of specific indirect effects would help explain the separate roles played by individual intervening variables. We used an SPSS macro (downloaded from [quantpsy.org](http://quantpsy.org)) on testing multiple mediation models to conduct the mediation analyses.

The total indirect effect associated with the two proposed mediators was tested by summing the specific indirect effects, i.e. using the formula  $a_1b_1 + a_2b_2$ , where the two terms represent the indirect effect of transportation through anti- and



Table 1. Zero-order correlation matrix for all variables.

	1	2	3	4	5	6
1. Transportation	1.00					
2. Anti-cocaine expectancy	0.10	1.00				
3. Pro-cocaine expectancy	-0.01	-0.15*	1.00			
4. Cocaine use intention	-0.00	-0.28**	0.16**	1.00		
5. Gender <sup>a</sup>	0.14*	0.12	0.00	-0.08	1.00	
6. Age	0.04	0.00	-0.04	-0.07	0.12	1.00

Notes: <sup>a</sup>Gender 0 = male, 1 = female. \* $p < 0.01$  and \*\* $p < 0.001$ .

pro-cocaine expectancies, respectively. Calculation of the specific indirect effects involved four steps (Preacher & Hayes, 2008): (a) from our original dataset of 500 cases, a bootstrap sample of 437 cases was generated using random sampling with replacement; (b) the regression coefficients ( $a$  and  $b$ ) and the indirect effect estimates ( $ab$ ) were calculated based on this bootstrap sample; (c) by repeating this process 5000 times, 5000 estimates of the total and specific indirect effects of transportation on intention to use cocaine were obtained; and (d) the bootstrap CI for the population-specific indirect effect was derived. If a zero was not included in the 95% CI of the estimate, we concluded that the indirect effect was statistically significant (Preacher & Hayes, 2008). The investigation of multiple mediation models also allowed us to test the significance of the specific indirect effects associated with each mediator.

## Results

A zero-order correlation matrix is presented in Table 1.

### Transportation hypotheses

The results showed a significant main effect for ending,  $F(1, 420) = 11.45$ ,  $p < 0.001$ ,  $\eta^2_{\text{part}} = 0.03$ , such that progressive ending ( $M = 3.00$ ,  $SD = 0.47$ ) was more transporting than regressive ending ( $M = 2.93$ ,  $SD = 0.47$ ). There was also a significant main effect for protagonist gender,  $F(1, 420) = 18.39$ ,  $p < 0.001$ ,  $\eta^2_{\text{part}} = 0.04$ , such that narratives with a female protagonist ( $M = 3.02$ ,  $SD = 0.48$ ) were more transporting than narratives with a male protagonist ( $M = 2.93$ ,  $SD = 0.47$ ). Similarly, there was a significant main effect for participant gender,  $F(1, 420) = 8.63$ ,  $p < 0.01$ ,  $\eta^2_{\text{part}} = 0.02$ , such that female participants ( $M = 3.02$ ,  $SD = 0.43$ ) were more transported than male participants ( $M = 2.90$ ,  $SD = 0.41$ ). None of the interaction effects were significant (Table 2).<sup>5</sup>

Therefore, for *RQ1*, results suggested that progressive ending narratives were more transporting than regressive ending narratives. *H1* was not supported and we did not find any difference for gender-matched *versus* gender-unmatched narratives on transportation.

Table 2. ANOVA results for transportation ( $n = 422$ ).

Variables	df	$F$	$\eta^2_{\text{part}}$
<i>Between-participants</i>			
Participant gender (PG)	1	8.63*	0.02
Error	420		
<i>Within-participants</i>			
Ending (E)	1	11.45**	0.03
Gender of protagonist (G)	1	18.39**	0.04
E $\times$ G	1	5.14	0.01
E $\times$ PG	1	3.12	0.01
G $\times$ PG	1	1.90	0.00
E $\times$ G $\times$ PG	1	0.02	0.00
Error	420		

Note: \* $p < 0.01$  and \*\* $p < 0.001$ .

Table 3. Indirect effects of transportation on intention to use cocaine through anti-cocaine and pro-cocaine expectancies controlling for effects of age and gender.

Mediator	Bootstrap estimate	SE	BCa 95% CI (Lower)	BCa 95% CI (Upper)
<i>Overall cocaine use intention</i>				
Anti-cocaine expectancies	-0.03	0.02	-0.0726	-0.0018
Pro-cocaine expectancies	0.00	0.01	-0.0072	0.0147
Total indirect effect	-0.03	0.02	-0.0708	0.0045

Notes: Based on 5000 bootstrap samples.

BCa, bias corrected and accelerated; CI, confidence interval.

### **Bootstrapping results**

#### *Total indirect effect*

The bootstrapped estimates for the total and specific indirect effects obtained from the main analysis are presented in Table 3. The total indirect effect of transportation on intention to use cocaine through anti- and pro-cocaine expectancies was not statistically significant for cocaine use intention, as the CIs contained a zero.

#### *Specific indirect effects*

Given the possibility of having significant specific indirect effects in the presence of a non-significant total indirect effect (e.g. due to a suppression effect; see MacKinnon et al., 2000), we investigated the significance of the specific indirect effects associated with the mediators. We tested for the indirect effect of transportation on intention to use cocaine through anti- and pro-cocaine expectancies. For this mediation model, age and gender were entered as control variables.

The specific indirect effect of transportation on intention to use cocaine through anti-cocaine expectancies was statistically significant, as the CIs did not contain a

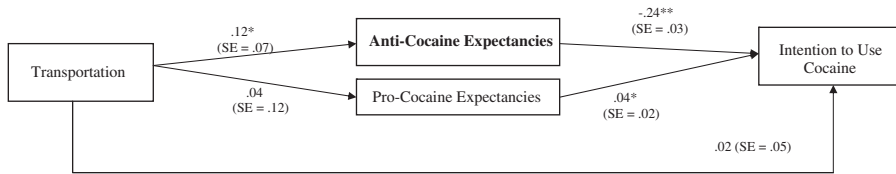


Figure 1. The estimated multiple mediation model (unstandardised B and SE) for cocaine use intention (overall intention).

Notes: Variables in bold denote significant mediators.

\* $p < 0.05$  and \*\* $p < 0.001$ .

zero (Table 3). That is, anti-cocaine expectancies were found to be a significant mediator. In the mediation model, the direction of the association was as expected: the relation between transportation and anti-cocaine expectancies was positive, and the relation between anti-cocaine expectancies and cocaine use intention was negative (Figure 1). Results for pro-cocaine expectancies were not significant. Therefore,  $H2$  was partially supported, and higher level of transportation was associated with greater anti-cocaine expectancies, and greater anti-cocaine expectancies in turn were associated with lower intention to use cocaine.

## Discussion

This study sought to examine the prevention effects of narrative framing (by variations in ending and protagonist gender) and participant factors (participant gender) on narrative transportation for non-cocaine users. The results demonstrated significant main effects for narrative framing (ending and protagonist gender) and participant gender. Furthermore, this study focused on examining the mediating effect of cocaine expectancies in the association between transportation and cocaine use intentions, and we found support for partial mediation in case of anti-cocaine but not pro-cocaine expectancies. This explorative study reported that progressive ending narratives were more transporting for non-cocaine users than regressive ending narratives, but future research should clarify the processes through which these results are achieved.

## Interpretation of the findings

First, the results revealed that overall narratives with progressive endings were more transporting than narratives with regressive endings. Prior research has informed us that progressive ending narratives present a more optimistic view and are perceived as success stories, whereas regressive ending narratives are perceived as failure stories (Smorti, 2004). Progressive ending narratives were reported as more transporting because of two possible explanations: (a) given that the participants were non-cocaine users, progressive narratives that emphasised the effects of cocaine use eventually leading the protagonists to quit drug use may have resonated well with the participants encouraging them to maintain their health (rather than changing health behaviours). Regressive narratives, on the other hand, with too much focus on effects of cocaine use and repentance may have been perceived as ‘too sad’ or

'too disturbing,' and therefore less transporting and (b) progressive stories are similar to classic story structures (protagonist makes a mistake, suffers consequences, and takes redemptive action) and therefore, were perceived as more transporting than regressive stories.

Second, we found that narratives with a female protagonist were more transporting than narratives with a male protagonist. Recent statistics on cocaine use in England reveal that among 16–24 year olds, males report cocaine use more than females (The Information Center, 2007). Therefore, it is reasonable to argue that it is normative to expect gender differences in cocaine use. The narratives with female protagonists may have suggested a departure from the norm and thus were more attention-grabbing and, therefore, transporting for the readers. However, we did not measure normative perceptions regarding male and female cocaine users in this study and therefore are not making specific claims regarding transportation variations due to protagonist gender. Future work in the area will help delineate the specific processes through which narrative transportation occurs including (but not limited to) potential differences in participant gender, narrative ending and narrative voice. It may be useful to explore the use of non-normative protagonists in drug use narratives in future research.

Third, the results indicated that female participants reported higher levels of transportation as compared to male participants. Prior work by Green and Brock (2000) has reported mixed results for how men and women experience transportation, with some evidence that women are more transported than men. Also, we did not find any support for gender-matched narratives. Green and Brock (2000) used gender-matching in their studies, but they did not compare gender-matched narratives to gender-unmatched narratives. It may be premature to conclude futility of gender-matching for framing health narratives, and more research is warranted.

### *Transportation and cocaine use expectancies*

The results demonstrated that greater transportation was associated with stronger anti-cocaine expectancies, which were further associated with lower cocaine use intentions. These findings are consistent with many prior studies (Braverman, 2008; Green & Brock, 2000), and help to further define the role of transportation in the persuasion process. Similar to Green and Brock's (2000) findings that transportation led to more changes in story-related beliefs and evaluations, we found that transportation led to stronger anti-cocaine beliefs/expectancies. Transportation due to anti-cocaine narratives might well have reinforced subjects' already negative perceptions of the use of drugs; however, possible ceiling effects on the anti-cocaine beliefs/expectancies and intention measures precluded the possibility of detecting such changes due to differences in narratives.

It should also be noted that we did not find any association between transportation and pro-cocaine beliefs/expectancies, possibly because the narratives did not focus on positive outcomes of drug use. These findings suggest that transportation leads to some form of story-related belief change or stronger adherence to story-relevant beliefs, and needs to be examined further, particularly to assess effectiveness of narratives for promoting safer health behaviours.

### ***Implications of the study***

This study has implications for narrative design, in particular, framing narratives differing in ending. Progressive ending narratives may be used as drug prevention messages displayed on college campuses, student health centre and student populated cafeterias. Because the narratives we used in this study were based on people's own reported experiences, this study suggests that people's own reported experiences could be used to affect persuasive outcomes, but more research is warranted to give credence to these claims. One mechanism for efficacy that we did not measure in this study (but could be done in future research) is narrative credibility. It may be possible that because these narratives come directly from adolescents, they may be judged to be more credible and believable, lead to increased transportation, thereby increasing the persuasiveness of personal stories. Finally, we found that female protagonist narratives were more transporting than male protagonist narratives for cocaine use stories. Having more female-protagonist cocaine use stories may be more persuasive for cocaine prevention purposes, and needs further investigation.

### ***Limitations and future research***

This study has several limitations. First, the sample used in this study was heavily Caucasian, limiting the generalisability of our findings to other heterogeneous populations of college students. Second, this study only manipulated ending and gender of protagonist, but findings suggest that narrative variations may affect participants' feeling of being transported in the story, and therefore, framing of narratives needs to be further examined. We utilised four different narratives to minimise results due to a single narrative, but a future study could use one single story and vary the ending to see if similar results hold and if progressive ending results in greater transportation than regressive ending. As well, we manipulated ending in a way that it was either progressive or regressive, future studies could examine effectiveness of gain-framed *versus* loss-framed narratives or narratives with implicit *versus* explicit conclusions. Third, participant factors (such as, greater familiarity with cocaine use, acceptability of cocaine use and perceived peer pressure related to cocaine use) that may have an effect on levels of transportation should be examined in future research. Fourth, we did not extensively pretest the narratives for story quality as this was an exploratory study and we wanted to explore the transportation potential of narratives varying in type of ending. This study indicated that female protagonist narratives were more transporting. However, in order to ensure that it is the protagonist gender and not story quality that affected transportation, future research could use the same story but switch protagonist from male to female. Fifth, we only used print narratives instead of online testimonials (the format in which the testimonials typically appear). It is likely that online testimonials elicit more story-related beliefs, and for this reason too the current study may offer a conservative test of the effect of narratives on transportation and anti-drug expectancies. Sixth, we only examined the effect of transportation on anti- and pro-cocaine expectancies, but future research could examine the effect of transportation on perceived norms related to cocaine use. Finally, future prevention efforts in anti-drug narratives could also examine efficacy of narratives that present slight departures from the norms as they may have greater attention-grabbing potential, and may work well to highlight the benefits of staying away from cocaine.

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### Notes

1. There were no main or interaction effects for order of presentation, and so order of presentation was dropped from the mixed-repeated measures analyses. Details are available from Smita Banerjee.
2. We asked participants about personal experience with cocaine use, by asking, 'Have you ever used cocaine?' with yes ( $n=69$ ) and no ( $n=423$ ) as response options. This variable was highly skewed and not used in the repeated-measures analyses (Self-cocaine use, Skewness = 2.08, SE Skewness = 0.11, Kurtosis = 2.33 and SE Kurtosis = 0.22).
3. The transportation scale (Green & Brock, 2000) consists of 11 general items and four narrative-specific items. The narratives examined in Green and Brock (2000) were multi-character narratives and so, there were four items pertaining to each character. The narratives we used revolved around one character only, and so we had one item for the narrative-specific belief, and therefore, a total of 12 items.
4. Transportation Measure – factor analyses for the stories: Story 1 (Natasha) eigenvalue = 3.95, 35.90% variance, loadings above 0.4, Story 2 (Mike) eigenvalue = 3.89, 35.38% variance, loadings above 0.4, Story 3 (Dawn) eigenvalue = 3.48, 34.84% variance, loadings above 0.4 and Story 4 (Martin) eigenvalue = 3.57, 35.74% variance, loadings above 0.4. The scores were summed and averaged with a higher score indicating higher transportation for each of the stories Story 1 (Natasha –  $\alpha = 0.82$ ,  $M = 3.01$ ,  $SD = 0.57$ ), Story 2 (Mike –  $\alpha = 0.81$ ,  $M = 2.99$ ,  $SD = 0.56$ ), Story 3 (Dawn –  $\alpha = 0.79$ ,  $M = 3.00$ ,  $SD = 0.53$ ), and Story 4 (Martin –  $\alpha = 0.80$ ,  $M = 2.87$ ,  $SD = 0.54$ ).
5. Repeated-measures analysis of variance (ANOVA) results for cocaine users indicated that main effects for ending,  $F(1, 67) = 0.00$ ,  $p = 0.97$ ,  $\eta^2_{\text{part}} = 0.00$ , gender of protagonist,  $F(1, 67) = 0.06$ ,  $p = 0.81$ ,  $\eta^2_{\text{part}} = 0.00$  or participant gender,  $F(1, 67) = 0.99$ ,  $p = 0.32$ ,  $\eta^2_{\text{part}} = 0.01$  were not significant. The only significant result found was for the interaction between ending and gender of protagonist,  $F(1, 67) = 17.98$ ,  $p < 0.001$ ,  $\eta^2_{\text{part}} = 0.21$ . For narratives with regressive ending, those with a female protagonist were more transporting than ones with a male protagonist. For narratives with progressive ending, those with a male protagonist were more transporting than ones with a female protagonist.

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