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Taking advantage of multiple identities to reduce defensiveness to personally threatening health messages

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Abstract

A host of studies has shown that self-relevant health messages may result in increased defensiveness and rejection of protective recommendations. Drawing on research showing that multiple identities offer psychological resources to deal with identity threats, we sought to examine whether the salience of an alternative identity before people are exposed to a personally relevant health message may buffer the threat and reduce defensive responses. Two studies were conducted on samples of daily smokers asked to read an anti-smoking message before completing a range of measures of defensiveness. Half of the participants had an alternative identity made salient beforehand (vs. no salience condition). Consistent with our hypotheses, Study 1 ($N = 90$) showed that this manipulation significantly reduced defensiveness to the message. Study 2 ($N = 95$) additionally showed that such effects only occurred when the alternative identity overlapped highly with the threatened identity. The theoretical implications of these findings are discussed.

*Key words:* Health messages; Identity salience; Defensiveness; Multiple identities; Smoking
Taking Advantage of Multiple Identities to Reduce Defensiveness to Personally Threatening Health Messages

Health messages are useful to inform a wide audience about the dangers associated with risky behaviours and to raise awareness about the benefits of performing healthy behaviours (e.g., exercising, sleeping enough). Nevertheless, the effectiveness of health messages may be undermined by resistance in the target audience. A large number of studies has shown that health messages can provoke defensive reactions and lead to the recommended behaviours being rejected, especially by those most at risk (see Van't Riet & Ruiter, 2013). Heavy tobacco users, for example, are particularly defensive when exposed to anti-smoking campaigns (Harris et al., 2007; Kessels et al., 2010). Defensive reactions may be manifested in different ways, including minimisation of one’s personal susceptibility to risk (DeHoog et al., 2008) and critical thinking toward the message (Liberman & Chaiken, 1992). Ultimately, such reactions contribute to the maintenance of health-risk behaviours.

In response, a fundamental question has arisen as a priority for research and public health: what strategies can be used to reduce defensiveness to health messages and thereby stimulate behaviour change? In two studies, the current research addresses this question by examining the benefits of multiple identities.

Identity Issues in the Receptiveness of Health Messages

Health-risk behaviours can reflect key aspects of individuals’ self-image. They may be internalised as central features of personal identity and be used as a basis for definition of the self (Charng et al., 1988). For example, smoking has been shown to be strongly related to the development of a smoker identity (van den Putte et al., 2009), and as the level of tobacco dependence increases, so does the smoker identity (Falomi-Pichastor et al., 2020). One of the consequences of the internalisation of health-risk behaviours into the self-system is that
cessation represents a threat to the self of those involved. This is particularly true with regard to prevention health messages specifically designed to motivate a reduction in unhealthy behaviours (Sherman et al., 2000). By emphasising the negative consequences of certain behaviours, health messages are likely to be perceived by those who are most involved as direct attacks on an aspect of their identity. This sense of threat may be even stronger among those who have established a strong identification with the behaviour in question (as can be the case for smoking, see Falomir-Pichastor & Invernizzi, 1999; Freeman et al., 2001).

As theorised by social identity theory and self-affirmation theory, people tend to react defensively to identity threats in order to protect their identity and maintain a positive self-image (Steele, 1988; Tajfel & Turner, 1986). Defensive mechanisms are adaptive strategies whose goal is to reduce the threat to one’s self-integrity and to bolster self-worth. However, they can be maladaptive if they motivate individuals to disregard important health information and maintain unhealthy behaviours. As such, defensive reactions to health messages constitute identity management strategies and reflect a willingness to protect one’s personal identity against external threats. The current research aims to identify methods to reduce defensiveness towards health messages by drawing on the identity issues surrounding them. In particular, we focus on research that highlights the power of multiple identities in managing identity threats.

**Multiple Identities and Management of Identity Threats**

Individuals have a constellation of multiple identities in the self-concept through which they define themselves (Markus & Wurf, 1987). These may include identities related to membership groups (e.g., being a citizen of a country), social roles (e.g., being a father), positions (e.g., being a manager in a company), or personal values (e.g., being a sociable
person; see Sherman & Cohen, 2006). However, individuals cannot draw on all their multiple identities simultaneously. At any particular moment, only one or a few identities will be salient and central to the individuals’ current self-definition. Indeed, the salience of identities is highly context-dependent and varies considerably from moment to moment depending on the situations in which people find themselves (McConnell, 2011).

Building on the basic assumptions of social identity theory (Tajfel & Turner, 1986), a growing literature shows that multiple identities, and in particular those identities to which individuals give great value to in their self-definitions, have beneficial consequences and form a basis for optimising health and well-being (Jetten et al., 2012). They constitute important psychological resources for coping with distressing life events (e.g., Jetten & Jones, 2011) and overcoming threats to identity (e.g., Branscombe et al., 1999). When individuals are confronted with information that threatens the sense of self, their multiple identities provide resources to cope adequately. Notably, they satisfy basic psychological needs (Kyprianides et al., 2019), provide a sense of control and efficacy (Greenaway et al., 2015), and promote resilience (Jones & Jetten, 2011) and self-esteem (Jetten et al., 2015). As evidence for this, numerous studies have shown that the more social groups people identify with, the more psychological resources they possess and the easier it is to adapt to potentially threatening situations (e.g., Haslam et al., 2008; Jetten & Jones, 2011), such as entering college (Iyer et al., 2009). In this sense, multiple identities can be considered as psychological remedies - they can shield us from threats to our sense of self and enhance our well-being.

Following this literature, we have reasons to believe that multiple identities might also provide useful psychological capital to encourage individuals to respond less defensively to health messages. More specifically, we hypothesize that merely making an alternative identity

1 Although the identities in question in this paper may correspond to both personal and group identities, we assume that the identity processes that we study here operate at an individual level.
(i.e., one not directly related to the identity that is threatened by the message) available\(^2\), prior to exposure to a potentially self-relevant health message, would be likely to mitigate the threat posed by the message and, therefore, reduce defensive reactions. Indeed, being reminded of at least one alternative identity when dealing with a personally threatening health message may provide key resources from which individuals can draw personal strength, resilience, and a sense of self-efficacy to inoculate the self from the threatening information. Put differently, individuals have an opportunity to use the positive aspects associated with the alternative identity to bolster the capacity of the threatened identity in coping with the threat.

Consistent with this hypothesis, research has shown that the salience of a positive social identity can play a buffering role in threatening situations caused by upward social comparison (e.g., Mussweiler et al., 2000) or stereotype threat (e.g., Rydell et al., 2009; Shih et al., 1999). For example, Rydell et al. (2009) showed that enhancing accessibility to the identity of college student in a sample of women on a mathematics test enabled them to offset the negative implications associated with female identity (which is negatively stereotyped in mathematics) on working memory and performance.

Furthermore, our prediction is also consistent with theorising about self-affirmation. Indeed, self-affirmation consists of a threat management mechanism through which individuals draw on self-relevant attributes to restore their sense of self-integrity and deal with identity threats without needing to directly confront them through defensive strategies. Self-affirmation paradigms usually seek to encourage people to self-affirm by elaborating on personally important self-aspects, such as values, attributes, or positive traits. As such, self-affirmation essentially involves activating parts of the self (see Crichter & Dunning, 2015; Harris et al., 2019). Therefore, there is a strong resemblance between our research and self-

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\(^2\) Note that an alternative identity can be salient in the mind of individuals either because they are able to bring it up spontaneously or because external triggers or cues activate it.
affirmation, as both imply making parts of self-concept accessible for them to be employed in protecting the self against identity threats. Moreover, many studies have shown that people engaged in self--affirming activities are likely to respond less defensively to health-risk information and display greater readiness to adopt healthy behaviours (Epton et al., 2015).

However, in comparison with the gold-standard self-affirmation tasks that are most often used – in which participants are encouraged to self-affirm by reflecting and writing about personally important values or positive personal traits (see McQueen & Klein, 2006) – the current studies test a minimal experimental manipulation. This merely activates an alternative identity that is (a) not self-selected for its potential to redress the ego and (b) offers little opportunity for cognitive elaboration or reflection. We test whether this is sufficient to reduce defensive reactions to potentially threatening health messages. Besides, another contribution of the present research was to consider the role of the overlap between the alternative and threatened identities. Besides, another contribution of the present research was to consider the role of the overlap between the alternative and threatened identities.

The Overlap between Multiple Identities

Multiple identities can be cognitively organised in different ways in the self-concept. Some may highly overlap, whereas others may be distinctive. Identity overlap corresponds to the degree of closeness or inclusiveness between two (or more) identities. For example, two group identities may be considered as strongly overlapping if most members are perceived to belong to both groups (e.g., being wealthy and being a golfer; Roccas & Brewer, 2002).

Identity overlap has implications for the positive effects of multiple identities and well-being more broadly. Not only does the number of identities that an individual has amassed matter, but also how these identities relate. In particular, possessing a multitude of social identities offer considerable benefits for coping with anxiety-provoking situations to the extent that they are seen to be overlapping (e.g., Brook et al., 2008; Cruwys et al., 2016). Only
identities sharing strong overlap may be a basis for useful psychological resources. High identity overlap serves to create harmonious relationships between various self-aspects and to construct a coherent and straightforward vision of the self, thereby making it more capable of resisting adversity and personally relevant threats. In line with this, a significant number of studies has shown that highly challenging life transitions (e.g., moving to college), which involve major shifts in one’s social environments and self-images, can be facilitated if old and new identities are perceived to share high compatibility (i.e., high overlap; Iyer et al., 2009; Mawson et al., 2016). In contrast, identities that are perceived to be incompatible (i.e., low overlap) are detrimental in life transitions. For example, the lack of overlap between being a woman and being a student in a traditionally masculine field of study has been shown to crucially undermine women’s performance and psychological adjustment in that field (Cheryan et al., 2009; Shih et al., 1999).

In the present research, we predicted that individuals would display less defensiveness in the face of a personally relevant health message when the threatened and alternative identities are perceived to strongly overlap. Indeed, the more the identities intersect in the composition of the self, the more a salient alternative identity can act as a psychological resource and protect the self against personally threatening health information. In particular, we suggest that the qualities of the alternative identity (in terms of self-esteem or self-efficacy) can be drawn on more easily to increase the strength of the threatened identity in defending the self against the threat when the two identities overlap strongly. High levels of overlap facilitate the transmission and sharing of positive attributes from the alternative identity to the threatened identity. If identity overlap is low, in contrast, the alternative identity has little capacity to offer appropriate resources for coping with the threat. Individuals could not as easily take advantage of the benefits from the alternative identity for reinvigorating the threatened identity in protecting the self against the threat.
The Present Research

In this paper, we present two studies that test whether the salience of an alternative identity reduces defensive responses to health messages. The first study compared a condition that made an alternative identity salient to one without any salience manipulation. The second study involved an additional manipulation of the overlap between the threatened identity and the alternative identity. We predicted a decrease in defensiveness to personally relevant health messages in the condition in which the alternative identity was made salient (vs. non-salient), and in particular when alternative and threatened identities were strongly related. We focused specifically on smoking behaviours and exposed smokers to an anti-smoking message. As a result, the threatened identity referred to the smoker identity. The alternative identity used in both studies was the student identity, which was assumed to be important to most students in their self-definition (Cassidy, 2004). We also controlled for nicotine dependence in all our analyses, as this is a crucial predictor of smoking behaviour (Vangeli et al., 2011). The data that support our findings are available at https://osf.io/79a5z/.

Study 1

Method

Participants and Procedure. A crucial aspect of our procedure was to manipulate the salience of the student identity while avoiding manipulating the salience of the smoker identity. Therefore, it was impossible to recruit participants by asking them whether they were students or smokers before the study started, or by informing them that the study was about smoking, since this may have led them to categorise themselves as a smoker or student. To address this issue, we recruited participants by approaching the maximum number of people and excluding from our sample all those who indicated that they were not smokers and
students once the study was completed\textsuperscript{3}. Participants were just asked whether they would be willing to take part in a study on “people’s reactions to health information”. We first recruited participants online by advertising our study on numerous French-speaking forums and social networking websites (e.g., Facebook, Twitter). Of the 194 people who voluntarily participated, only 5 met our criteria and were included in the final dataset. To increase our chances to find the target sample, we then opted for a paper-and-pencil recruitment method and approached people on a university campus and surrounding areas. With this strategy, we recruited a total of 305 students, of whom 85 were smokers. Thus, the final sample consisted of 90 students smokers\textsuperscript{4}, including 67 women and 23 men. Most were French (90\%). Mean age was 21.20 (SD = 2.86), ranging from 18 to 38 years old. Just over half (51.1\%) reported smoking from 1 to 5 cigarettes per day, and 45.6\% reported smoking between 6 and 10.

After participants consented to take part in the study, we manipulated the salience of the student identity (vs. no salience). Then, they were all asked to carefully read an anti-smoking message before completing several measures of defensiveness\textsuperscript{5}. Finally, they were all debriefed and provided with links to smoking cessation resources (e.g., tabac-info-service.fr).

**Independent Variable.** Salience of the student identity was manipulated by introducing the study as comparing students’ responses with non-students’ responses. Extending previous work (e.g., Ray et al., 2008), participants were then asked to “indicate, by ticking the corresponding box, whether you are a student or not”. To maximise the impact of the

\textsuperscript{3} Note that our studies, with the current procedure, have received ethical approval from our IRB (Reference number: ER/PRH21/6), and that informed consent has been appropriately obtained from participants.

\textsuperscript{4} To assess reliability of our sample size, we computed a sensitivity power analysis using G*Power for the predicted main effect (including one covariate). The minimum effect size that can be detected at 80\% power (0.05 alpha level) is $f = 0.30$. This means that Study 1 was sensitive enough to detect medium-to-large effect sizes ($f^2 \approx .08$).

\textsuperscript{5} Additionally, we emailed participants one week after they had participated and asked them to report their actual tobacco use during the previous seven days. However, less than 5\% replied, so their responses could not be analysed. For exploratory purposes, we included the Inclusion of Other in the Self scale to measure how close participants felt that the students were relative to the smokers. However, as this measure showed no effects either as an outcome variable or as a moderator, the corresponding findings are not reported.
manipulation, this text appeared in large text and in bold on a single sheet of paper. The control condition did not include this manipulation.

**Stimulus material.** After the salience manipulation, participants were instructed to read an antismoking message. This was adapted and translated into French from a real, existing British campaign, originally designed by Cancer Research UK. It was titled “Smoking causes 14 types of cancer” and depicted, through a graphic of a human body, the kinds of cancer that smoking can cause and the proportion of cases for each of them in France (e.g., mouth, throat, or lung; we adapted the message information to correspond to France). The infographic also stated that tobacco causes more than 73,000 deaths every year in France.

**Measures.** To assess recipients’ defensiveness to the antismoking message, we included a large range of commonly used measures in health psychology research (see e.g., Harris et al., 2007). Note that the lower the scores of message derogation and attitude toward smoking are, and the higher the scores of attitude toward the message, perceived severity and susceptibility, and intention to cut down and quit are, the more they are indicative of reduced defensiveness.

**Message derogation.** We measured message derogation with four items (based on Jessop et al., 2009). Participants were asked to what extent they thought the message was “overblown”, “exaggerated”, “tried to manipulate my feelings” and “tried to strain the truth” ($M = 2.42, SD = 1.37; \alpha = .82$). Responses were given on scales ranging from 1 (= not at all) to 7 (= yes absolutely).

**Attitude toward the message.** To assess attitude toward the message, we used semantic-differential scales (ranging from -3 to +3) asking participants to report what they thought about the message. Five items were used: “I am against-for”, “I am unfavourable-favourable”, “I disagree-agree”, “I do not like it-like it” and “I find it useless-useful” ($M = 4.98, SD = 1.40; \alpha = .83$).
Attitude toward smoking. We measured attitude toward smoking with 7-point semantic-differential scales composed of four items. We asked participants whether they think that smoking cigarettes is “bad-good”, “unhealthy-healthy”, “safe-unsafe” and “negative-positive” ($M = 2.17$, $SD = 1.11$; $\alpha = .86$).

Perceived severity. Perceived severity was assessed through three items, taken from DeHoog et al. (2008). We asked to what extent participants perceived that the risk of smoking was “severe”, “serious” and “harmful” ($M = 6.03$, $SD = 1.16$; $\alpha = .92$). Responses were provided on scales running from 1 (= not at all) to 7 (= yes absolutely).

Perceived susceptibility. Perceived susceptibility was measured with two items (also adapted from DeHoog et al., 2008): “how personally vulnerable to the risk of smoking do you think you are because of your consumption of cigarettes?” (on a scale ranging from 1 = not vulnerable to 7 = very vulnerable) and “what is the probability that you will suffer from the risk of smoking because of your consumption of cigarettes” (on a scale ranging from 1 = very low to 7 = very high; $M = 4.32$, $SD = 1.48$; $r = .80$).

Intention to quit/cut down. Both intention to quit smoking ($M = 2.10$, $SD = 1.59$; $\alpha = .96$) and cut down ($M = 3.18$, $SD = 2.01$; $\alpha = .95$) were assessed using three items each, adapted from items of the Theory of Planned Behaviour (Ajzen, 1991). Participants were asked whether, in the seven days, they “are going”, “intend” and “plan” to cut down/quit their consumption of cigarettes.

Tobacco dependence. We measured tobacco dependence with the 12-item Cigarette Dependence Scale (CDS-12; Etter et al., 2003). This measure consists of twelve items asking smokers, for example, “to rate their addiction to cigarettes on a scale going from 0 to 100”, or to report “the number of cigarettes that they usually smoke per day”. Responses to these items were standardized and averaged ($\alpha = .81$)

Results
Descriptive statistics and correlations between the variables are presented in Table 1. We conducted a one-way between-subject MANCOVA with the salience variable as unique independent variable and all the seven dependent variables. Nicotine dependence was also entered as a covariate in the analysis. The multivariate tests showed a significant main effect of the manipulation, $F(7,81) = 2.82$, $p = .011$, $\eta_p^2 = .20$. Univariate tests of between-subjects effects showed significant effects of the manipulation on perceived severity, $F(1, 87) = 4.32$, $p = .041$, $\eta_p^2 = .05$, perceived vulnerability, $F(1, 87) = 4.48$, $p = .037$, $\eta_p^2 = .05$, and attitude toward smoking, $F(1, 87) = 14.55$, $p < .001$, $\eta_p^2 = .14$. Differences did not reach significance on message derogation, $F(1, 87) = 3.87$, $p = .052$, $\eta_p^2 = .04$, attitude toward the message, $F(1, 87) = 3.68$, $p = .058$, $\eta_p^2 = .04$, intention to cut down, $F(1, 87) = 1.68$, $p = .198$, or to quit, $F(1, 87) = 2.41$, $p = .124$. Compared with smokers assigned to the control condition, those who were in the salience condition perceived the risks of smoking to be more severe ($M = 6.26$, $SE = 0.16$ vs. $M = 5.75$, $SE = 0.18$), perceived themselves to be more vulnerable to the risks ($M = 4.55$, $SE = 0.17$ vs. $M = 4.02$, $SE = 0.19$), and reported a less positive attitude toward smoking ($M = 1.80$, $SE = 0.15$ vs. $M = 2.64$, $SE = 0.16$).

**Discussion**

As we predicted, making an alternative identity salient reduced defensiveness to the antismoking message. Compared with those in the control condition, smokers who had their student identity activated showed less evidence of defensiveness (e.g., they approved less of smoking and displayed greater risk perceptions).

**Study 2**

Study 2 aimed to investigate whether the overlap between the alternative and threatened identities plays a role in defensiveness to health messages, by moderating the effects of making an alternative identity salient. We hypothesized that defensiveness would be
particularly reduced when the overlap of the alternative with the threatened identity is high. Thus, before smokers were invited to read the antismoking message, we provided them with information aimed at manipulating the perceived overlap of the smoker and student identities.

**Method**

**Participants and Procedure.** We employed a paper-and-pencil method and recruited participants on the university campus, without asking them whether they were students or smokers or informing them that the study concerned smoking. We approached a total of 200 students, of whom 99 were smokers. Of these, 4 were excluded because they had already participated in Study 1. Thus, the final sample consisted of 95 student-smokers, comprising 70 women and 25 men. Most of them were French (90.7%). Mean age was 20.87 (SD = 2.18), ranging from 18 to 28 years old. Moreover, 54.7% reported smoking between 1 to 5 cigarettes per day, while 34.7% reported smoking between 6 and 10. The procedure was similar to Study 1, except that participants were first exposed to the overlap manipulation before being assigned to the salience manipulation (or control condition). All the participants were debriefed and provided with statistics about the true proportion of students-smokers.

**Independent Variables.**

**Identity Salience.** We manipulated the salience of the student identity as in Study 1.

**Overlap.** To manipulate the overlap between the student and smoker identities, we used a manipulation similar to one used for manipulating descriptive norm. In line with the social

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As in Study 1, we computed a sensitivity power analysis using G*Power. The minimum effect size that can be detected at 80% power (0.05 alpha level) for the predicted interaction effect (including one covariate) is $f = 0.29$. This indicates that the present study was sensitive enough to detect a medium effect size ($\eta^2_p = .08$).

In comparison with Study 1, we approached people who had been seen smoking. This allowed us to reach the targeted population more easily and limit the number of questionnaires filled in by non-students/smokers. However, it is important to highlight that 1) people were not smoking at the moment they were filling in the questionnaire, 2) for each target participant, we offered questionnaires to everyone around so as not to leave any suspicion about the research objectives, 3) we took the necessary precautions so that the participants included in the study did not have suspicion they were being recruited because they had smoked. Therefore, we tried as much as possible to minimise the risk that neither the smoker nor the student identity was activated before the experimental manipulations.
identity complexity theory, descriptive norm is one of the direct antecedents of perceptions of overlapping identity overlap (e.g., Roccas & Brewer, 2002; Roccas et al., 2021). Indeed, perception that individuals can belong to different group memberships simultaneously results in an overlapping and unified representation of the interrelationships between the two identities. As a result, we provided participants with varying information about the proportion of students who are also smokers. Participants read a short report about the French people’s overall health condition and their habits on several health topics (e.g., alcohol use). This was adapted by adding fictitious smoking estimates to a genuine report created by the French national department of health in May 2017. In this, we included details about the number of smokers among French college students. In the low overlap condition, it was stated that “fewer than 20% of students are smokers”. In contrast, in the high overlap condition, we indicated that “more than 60% of students are smokers”. A chart further illustrated this information. This manipulation was pre-tested on a population of students-smokers (N = 30) to ensure that the rates were seen as credible. Note that the true rate in France was about 30%.

**Measures.** Derogation (M = 2.74, SD = 1.33; α = .80), attitude toward the message (M = 5.00, SD = 1.39; α = .82), perceived severity (M = 6.26, SD = 1.08; α = .91), perceived susceptibility (M = 4.59, SD = 1.47; r = .70), attitude toward smoking (M = 2.29, SD = 1.31; α = .83), intention to quit (M = 1.94, SD = 1.50; α = .91) and cut down (M = 3.17, SD = 1.99; α = .94), and dependence (α = .92) were measured with the same items as in Study 1.

**Results**

Descriptive statistics and correlations between the variables are in Table 1. We performed a two-way between-subject MANCOVA with identity salience and overlap as

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8 For exploratory purposes, we additionally included a measure of accessibility by using a paper-and-pencil word-fragment completion task. This was done to assess whether the salience condition could reduce the cognitive accessibility to the threatened identity. However, this measure showed no effects.
independent variables and all seven dependent variables simultaneously. Nicotine dependence was entered as a covariate. The multivariate tests did not show significant main effects of identity salience or overlap (both $p > .13$), but a significant interaction, $F(7, 84) = 2.32, p = .033, \eta^2_p = .16$. Tests of univariate between-subjects effects showed no main effects of either independent variable on any of our outcome variables (all $p > .10$). However, as predicted, there were significant interactions (see Figure 1) between salience and overlap on message derogation, $F(1, 90) = 6.38, p = .013, \eta^2_p = .07$, perceived severity, $F(1, 90) = 4.80, p = .031, \eta^2_p = .05$, and attitude toward smoking, $F(1, 90) = 6.44, p = .013, \eta^2_p = .07$. No significant interactions were found on the remaining variables (all $p > .07$). Analyses of simple effects in the condition of high overlap showed a significant effect of the salience manipulation on message derogation, $F(1, 90) = 6.53, p = .012, \eta^2_p = .07$, perceived severity, $F(1, 90) = 4.88, p = .030, \eta^2_p = .05$, and attitude toward smoking, $F(1, 90) = 4.41, p = .039, \eta^2_p = .05$. Relative to smokers assigned to the control condition, those for whom the student identity was made salient displayed less message derogation ($M = 2.08, SE = 0.25$ vs. $M = 2.99, SE = 0.25$), perceived the risk of smoking to be more severe ($M = 6.51, SE = 0.21$ vs. $M = 5.85, SE = 0.21$), and reported more negative attitude toward smoking ($M = 2.11, SE = 0.26$ vs. $M = 2.87, SE = 0.26$). In the low overlap condition, the salience of the student identity had no effect on message derogation, $F(1, 90) = 1.17, p = .283$, perceived severity, $F(1, 90) = 0.89, p = .348$, or attitude toward smoking, $F(1, 90) = 2.34, p = .130$.

**Discussion**

Study 2 showed that the positive impact of an alternative identity on the reactions to a personally relevant health message occurred when the threatened and alternative identities were perceived to highly overlap. In such a condition, smokers were found to engage in less
derogation of the antismoking message, to believe the risk of smoking to be more serious, and to be more disapproving of smoking.

**General Discussion**

Across two studies, the present research sought to examine whether the salience of an alternative identity could alleviate defensiveness in people’s responses to self-relevant health messages. Study 1 gave empirical support to this prediction. We found that student smokers who were induced to self-categorize through their student identity showed more positive responses to an anti-smoking message, compared to other student smokers who were not induced to do so. More specifically, they displayed a more negative attitude toward smoking and greater perceptions of the risks of smoking.

Study 2 suggested that the benefits of an alternative identity varied as a function of the level of overlap between the threatened and alternative identities. We found that the reduction in defensiveness resulting from the salience of the alternative identity arose when the overlap with the threatened identity was high. When student-smokers were informed that a high proportion of students were also smokers (i.e., high overlap), the salience of the student identity promoted less message derogation, a less favourable attitude toward smoking, and greater perceptions of smoking-related risks. In contrast, when overlap was low, the salience condition did not differ from the control condition. Therefore, we provided evidence that the salience of an alternative identity can reduce defensiveness to self-threatening health messages, provided that the alternative identity overlaps sufficiently with the threatened one.

These findings support the idea that individuals' identities can act as beneficial resources to cope with threatening information to the self (Branscombe et al., 1999; Jetten & Jones, 2011). Individuals can draw on the multiplicity of their identities to derive personal strength, resilience, and a sense of control and self-efficacy to adequately address threats to their self. By merely activating a single alternative identity, not threatened by the message,
individuals are able to counteract the negative implications of health information that threatens one domain of the self. In this sense, we replicated, for the first time in the context of health messages, findings already obtained in the research on stereotype threat and social comparison (e.g., Mussweiler et al., 2000; Rydell et al., 2009; Shih et al., 1999).

Although the current data cannot inform us about the mechanisms that mediate the effects of the salience manipulation, we can speculate that the opportunity to think of non-threatened aspects of the self in the face of a personally relevant threat allows one to exploit the positive attributes of the alternative identity (in terms of self-efficacy or resilience). This may give strength to the threatened identity in fighting against the threat. In contrast, when individuals process a health message under normal conditions (i.e., with no alternative identity), they cannot take advantage of protective resources provided by the alternative identity but have to manage the threat using defensive mechanisms. Put differently, one might speculatively argue that the salience of an alternative identity reduces defensiveness because people can make use of the positive aspects of the alternative identity to strengthen the capacity of the threatened identity in dealing with the threat. This explanation, although unsubstantiated by the present findings, would also be consistent with the findings of Study 2. The more the identities overlap, the more the positive aspects associated with the alternative identity can easily propagate to the threatened identity and be employed to bolster its capacity to offset the threat. However, further research is needed to identify the underlying mechanisms. We notably suggest measuring the salience of both the alternative and threatened identities and evaluating their implications in the responses to the message.

**Theoretical implications**

These findings have several important implications for research. First, they corroborated the idea that identity concerns are at the core of why people display defensiveness toward health messages. We provided support that personally relevant health
messages are threatening to receivers’ sense of self (Falomir-Pichastor & Invernizzi, 1999; Sherman et al., 2000). In this way, defensive reactions may be overcome to the extent that people have enough identity resources to manage such threats. Taking into account the malleability and multiplicity of the self-concept offers promising opportunities to effectively offset defensive responses to health messages and thus promote healthier lifestyles.

Furthermore, the present research adds to the literature by showing that health messages do not threaten self-identity as a whole but rather only one dimension of the self. In this sense, defensiveness to self-relevant health messages is a response to a threat that is directed at a specific aspect of the self-concept (i.e., the threatened identity).

Second, our findings have strong implications for research on multiple identities. In addition to confirming that multiple identities can facilitate the management of identity-threatening situations (Haslam et al., 2008; Iyer et al., 2009), we make an additional contribution to the research by showing that the beneficial effects of multiple identities can also apply to individual’s receptiveness to health messages. Furthermore, we bring novelty by demonstrating that the activation of one single identity can in itself consist of a psychological resource to manage an identity threat. Although past research has shown that every additional identity that people have access to in their self-concepts can bring benefits for well-being (i.e., “the more the merrier” hypothesis; Haslam et al., 2008; Jetten & Jones, 2011), we found that even one single identity may be sufficient to lead people to offset the threat and reduce their defensive reactions to self-threatening information.

Third, our findings are consistent with the research showing that perceived compatibility is crucial to the potential of multiple identities to improve health and well-being (e.g., Brook et al., 2008; Cruwys et al., 2016), and, more particularly, to cope with identity threats (Iyer et al., 2009; Mawson et al., 2016). However, the current studies have shown, for the first time, that a strong overlap between two identities can produce greater responses in
the management of an external threat directed at only one of two identities. This suggests that possessing a multitude of identities coherently grouped in the self-concept can provide adequate resources, not only for protecting the self as a whole, but also for supporting one aspect of the self, locally harmed. The structure of identity network is thus a key aspect that determines the capacity of multiple identities in offering assistance for managing threats.

Fourth, the current findings have implications for self-affirmation research. Indeed, research has extensively shown that individuals who engage in self-affirming activities, such as reflecting upon an important personal value, are also likely to respond less defensively to self-relevant threatening messages (Epton et al., 2015). Therefore, it seems reasonable to suspect that self-affirmation processes and those explored in the current research have much in common. As suggested by some (Crichter & Dunning, 2015), it may be that the strengths of self-affirmation manipulations derive from increased activation of alternative identities. Perhaps the mere activation of a single important alternative identity, with no opportunity or encouragement to reflect upon it – as was the case in the research designs reported here - is sufficient for self-affirmation effects to occur. Certainly, the procedure employed in the current studies is considerably less elaborate and required less reflective activity on the part of the respondent than is typical of the methods used in self-affirmation research. One may therefore wonder whether self-affirmation processes were at play in our findings or not.

Future studies addressing these and other similarities and differences with self-affirmation methods, including how the activation of alternative identities may induce self-affirmation effects, represents an important future line of research.

Furthermore, it should be noted that the findings of Study 2 may seem to pose a challenge to self-affirmation theory, which is often misread as postulating that the efficacy of self-affirming exercises may depend on emphasizing sources of the self that are disconnected from the threat. Although a key contribution of self-affirmation theory in relation to
consistency theories is the recognition that people can manage threatening information with resources that do not need to be directly related to the threat, this does not mean that resources that are related to the threat are necessarily ineffective. On the contrary, in his seminal account of self-affirmation theory, Steele argued that "self-affirming changes addressed to the threat should be more effective than changes that affirm unrelated, valued aspects of the self." (Steele, 1988, p. 292). He further claimed that the more related they would be, the more effective affirming alternative self-images could be to buffer against the threat because they both share cognitive connections. Consequently, more empirical and theoretical attention should be paid to the role of relatedness in self-affirmation.

**Practical implications**

As a practical matter, the current research can inform message planners and health practitioners about how to reduce defensiveness and improve the acceptance of health information. Although the benefits of activating an alternative identity need to be replicated in future work and in a real-life setting before being used to inform behaviour change interventions, our findings suggest that a number of relatively simple strategies may be easily implemented without changing anything in the messages. Indeed, salience of identity may be induced in subtly different ways with short and easy-to-understand instructions, such as, for example, by asking people one simple question that invites them to disclose other presumably important personal characteristics. More generally, any kinds of situational cues that can help people see themselves through distinctive attributes would turn out to be of relevance to induce alternative identities and reduce resistant reactions to health information.

**Limitations and Future Directions**

The first limitation pertains to our sample sizes. The experimental conditions and recruitment constraints limited our ability to recruit a large sample of daily smokers, and the number of participants in each study was relatively low. Although power analyses indicated
that our current sample sizes enabled us to detect medium-to-large effect sizes, the effect sizes
obtained in Study 1 and 2 ranged from low to medium, signalling that the studies were
somewhat underpowered. Replications of the present studies would need thus to be conducted
with larger sample sizes to guarantee reliability of our findings. Second, identity salience was
found to have no effect on behavioural intentions to cut down or quit smoking. While
activating an alternative identity ameliorated defensive reactions, it did not lead to an
increased desire to change one’s behaviour. This tends to limit the scope of our conclusions,
given that behaviour change remains the ultimate goal of communication campaigns. Third,
the alternative identity chosen in both studies (i.e., the student identity) was assumed to be
relatively important in participants' self-definition and to be perceived rather positively.
Consequently, assumptions behind the effects hypothesized in the current research are that
alternative identities have to be of high subjective importance and positive enough for them to
act as psychological resources and protect the self against identity threats. However, it may be
that this was not always the case and that a significant variation in levels of identification or
valence might have impacted the results. Fourth, we did not measure smoker identity in any of
our studies and we might easily imagine our results to be affected by it. Indeed, a large
number of studies have shown that smoker identity has strong implications on smoking
behaviour and that high smoker identity undermines people’s reactions to health messages
(Falomir-Pichastor & Invernizzi, 1999; Freeman et al., 2001). Fifth, we did not include a
manipulation check for identity overlap. Nevertheless, as we specified in Study 2, there is
abundant literature showing that the degree to which an individual shares multiple group
memberships simultaneously shapes how he or she will see the group identities as overlapping
(Roccas & Brewer, 2002). In addition, since numerous studies have used overlap between
group memberships (through descriptive norm) as a basis for assessing identity overlap, we
are thus confident that our manipulation was able to instigate the expected levels of identity overlap.

**Conclusion**

Across two experiments, the present research provided evidence that defensive reactions to self-threatening health messages can be reduced by making an alternative identity salient, provided that it highly overlaps with the threatened identity. These findings suggest that research about responsiveness to health messages would deserve to further take into account the multifaceted and context-dependent nature of the self-concept. Indeed, we believe that integrating knowledge about how people make use of multiple identities to deal with self-threatening information can be a stimulating room for enriching our understanding of defensiveness to health behaviour change interventions.
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Table 1. Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th></th>
<th>Study 1</th>
<th></th>
<th>Study 2</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Message derogation</td>
<td>2.42</td>
<td>1.37</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2. Attitude twd the message</td>
<td>4.98</td>
<td>1.40</td>
<td>-.33**</td>
<td>-</td>
</tr>
<tr>
<td>3. Attitude twd smoking</td>
<td>2.17</td>
<td>1.11</td>
<td>.37***</td>
<td>-.30**</td>
</tr>
<tr>
<td>4. Severity</td>
<td>6.03</td>
<td>1.16</td>
<td>-.17</td>
<td>.26*</td>
</tr>
<tr>
<td>5. Susceptibility</td>
<td>4.32</td>
<td>1.48</td>
<td>-.10</td>
<td>.05</td>
</tr>
<tr>
<td>6. Intention to cut down</td>
<td>3.18</td>
<td>2.01</td>
<td>-.08</td>
<td>.04</td>
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<tr>
<td>7. Intention to quit</td>
<td>2.10</td>
<td>1.59</td>
<td>.02</td>
<td>-.01</td>
</tr>
</tbody>
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Note. *p < .05, **p < .01, ***p < .001
Figure 1. Message derogation, perceived severity of risk, and attitude toward smoking as a function of the salience manipulation and overlap between the identities.

Note. Error bars represent standard errors.