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The Social Value of Being Ambivalent:
Self-Presentational Concerns in the Expression of Attitudinal Ambivalence

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Abstract

We tested whether individuals can exert control over the expression of attitudinal ambivalence and if this control is exerted with self-presentational concerns. Using the self-presentation paradigm, participants reported more ambivalence about Genetically Modified Organisms ("GMO") in a standard and a self-enhancement (present yourself positively) conditions than in a self-depreciation (present yourself negatively) condition, on both felt (Experiments 1a and 2a) and potential ambivalence, in its cognitive (Experiments 1b and 2b) and affective components (Experiments 1b and 2c). The role of ambivalent attitudes in conveying a positive social value was confirmed by the fact that the above effect was found on a controversial attitude object (GMOs) but the opposite appeared on a non-controversial one (e.g. tooth brushing, a truism; Experiment 3). Such a reversal was obtained by directly manipulating the perception of controversy on GMOs (Experiment 4). Attitudinal ambivalence may thus serve an adaptive function, i.e. achieving a positive social value.

Keywords: ambivalence, attitudes, social value, self-presentation, controversy.

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In September 2012, a wave of debate on the safety of Genetically Modified Organisms (GMOs) flooded most media when a scientific study showed that a variety of GMO corn produced by an international food company increased cancer rate in mice. The findings were immediately compared with other scientific studies showing no impact of GMO on human and animal health (e.g. Peeples, 2012), leaving the public wondering whether in front of such a complex matter one should be in favor or against GMOs. We are frequently asked to express our opinion on various subjects in our everyday life, and it can appear in some cases that we hold simultaneously both positive and negative views on the debated topic. For example, one can be against genetically modified food because it could have disastrous consequences for the environment, but also in favor because it could help feeding people in need (Poortinga & Pidgeon, 2006). This phenomenon has been referred to as attitudinal ambivalence (Thompson, Zanna, & Griffin, 1995). Interestingly, ambivalent attitudes have traditionally been treated as weak forms of attitude, and described as being malleable and influenced by persuasive communication (Armitage & Conner, 2000), as well as by consensus information (Hodson, Maio, & Esses, 2001) or interpersonal influence (Zemborain & Johar, 2007). However, more recent research (e.g. Cavazza & Butera, 2008) has questioned this view by indicating that ambivalent individuals only change their attitude at a manifest level when facing a persuasive message, but not at a more latent level.

Thus, the question that still remains unanswered in the literature on attitudinal ambivalence is whether ambivalent attitudes are weaker, more malleable attitudes, or attitudes that have a specific function. Indeed, the debate has mainly revolved around the question of the weaknesses of attitudinal ambivalence, and has failed to ask and systematically study the question of its function. In this article, we aim at contributing to this debate in two

complementary ways. Firstly, in order to address the question of what the function of attitudinal ambivalence might be, we adopted a self-presentational approach by contending that attitudinal ambivalence is an adaptive self-regulatory device and proposing the hypotheses that, if this contention is true, it should be possible to show that (a) individuals can exert some control over the expression of attitudinal ambivalence and that (b) this control is exerted with self-presentational purposes, namely displaying a positive social value. Secondly, this research will also propose and test the process that might be responsible for the hypothesized effects, by showing that (c) attitudinal ambivalence may convey positive social value in that it may communicate that one has thoughtfully pondered the issue, and should therefore be expressed for self-presentational purposes on controversial attitude objects but not on non-controversial attitude objects.

The Functions of Attitudinal Ambivalence

Notwithstanding the vast literature on attitudinal ambivalence, some authors have pointed to the need for additional research that would directly address the functions fulfilled by ambivalent attitudes (Costarelli, 2011; Maio & Olson, 2000). Indeed, the studies conducted with this aim led to diverging conclusions as to the function of attitudinal ambivalence. The most consensual conclusions focused on the consequences of ambivalence, more specifically on the weakness of ambivalent attitudes in comparison with univalent attitudes, mainly because the former is less likely to predict intentions or further behaviors than the latter (see Armitage & Conner, 2004 for a review). Several studies reported indeed that being ambivalent weakens the link between attitude and behavior (e.g. Armitage, 2003; Conner, Povey, Sparks, James, & Shepherd, 2003; Sparks, Harris, & Lockwood, 2004), as well as between attitude and intentions (Sparks, Conner, James, Shepherd, & Povey, 2001). Moreover, it has been recently discussed that ambivalent individuals feel discomfort in decision-making situations (van Harreveld, Rutjens, Rotteveel, Nordgren, & van der Pligt,

2009; van Harreveld, van der Pligt, & de Liver, 2009). In sum, the majority of the studies available in the literature portray attitudinal ambivalence as a weak form of attitude.

However, some researchers reported results indicating that attitudinal ambivalence could serve an adaptive function. For example, ambivalence was found to be related with a strong desire to quit smoking (Lipkus, Pollak, McBride, Schwartz-Bloom, Lyna, & Bloom, 2005). In a similar vein, Fong (2006) has shown that inducing ambivalent emotions (i.e. sadness and happiness) helped the participants being creative. In a nutshell, even if ambivalent attitudes are a widespread phenomenon (Breckler, 2004), it has been noted that little is known about the antecedents of ambivalence (Kruglanski & Stroebe, 2005; Keele & Wolak, 2008).

It is worth noting, in this respect, that some personality-based factors, also named top-down processes by Conner and Armitage (2008; e.g. Need for Cognition, Personal Fear of Invalidity), have been reported to be associated with more or less ambivalence (Newby-Clark, McGregor, & Zanna, 2002; Thompson & Zanna, 1995). Moreover, specific contexts (or bottom-up processes, Conner & Armitage, 2008) have been reported as leading individuals to be more or less ambivalent, as for example interpersonal discrepancy (Priester & Petty, 2001) or the anticipation of conflicting situations (Priester, Petty, & Park, 2007). However, notwithstanding the importance of the above research, the motivational conflicts underlying the expression of attitudinal ambivalence still need to be clarified, as suggested by Crano and Prislin (2006). In this article, we aim for the first time at directly investigating how ambivalence can be used to present oneself as a function of the pressures of one's social environment.

This is the first original contribution of the present research. Indeed, to the best of our knowledge, only two articles reported research specifically aimed at investigating the influence of social norms on attitudinal ambivalence. However, both of these studies did so

indirectly, and did not use a manipulation that allows to directly identify self-presentational concerns. Mucchi-Faina, Pacilli, Pagliaro and Alparone (2009) reported that individuals indicated less ambivalence toward an out-group (e.g. the elderly) when this out-group was protected by the fairness norm in comparison with a less protected group (e.g. the adults). Cavazza and Butera (2008) have shown in a study on persuasion that ambivalent participants could act strategically when facing a persuasive message. Their ambivalent participants changed attitude and agreed with the attitude of the majority at a direct level more than univalent participants, sustaining that ambivalent individuals can be influenced to a higher extent than univalent individuals. More interestingly, however, Cavazza and Butera (2008) also observed that unlike univalent participants, ambivalent participants maintained their initial attitude at an indirect level (where the link between attitudes and the source's message was less salient). Thus, ambivalent participants seemed to be able to adapt themselves to the persuasive pressure of the majority and to strategically control the expression of their attitude, without really changing it.

The above research raises the question of why one would express ambivalence in order to achieve a positive self-presentation. The answer to this question represents our second contribution. There is evidence that such a controlled expression of ambivalence may depend on the consensus attached to an attitude object. Green, Visser and Tetlock (2000) reported that individuals who were accountable to conflicting points of view toward the free fair trade issue (a topic on which there is no obvious solution according to these researchers) were the most integratively complex (i.e. more ambivalent) in comparison with individuals accountable to unified point of views. Furthermore, the idea of a link between controversy and ambivalence is suggested by Zhao and Capella (2008). Speaking about marijuana (a highly controversial drug in the United States), these authors evoked that the high ratio of ambivalent adolescents toward this drug could result from heated debates and consequently

from a lot of conflicting information over the years about marijuana in society. Likewise, Stoeckel (2013) reported that the disagreement among the elites on the attitude towards Europe could lead to more ambivalence in the population. However, one can wonder whether and to what extent these responses expressed ambivalence or a way to present oneself as ambivalent.

Hence, in line with Maio and Haddock (2004, 2010), we believe that expressing an ambivalent attitude on controversial attitude objects could be positively valued, whereas this should not be the case on non-controversial, consensual ones. These authors, indeed, suggested—but did not test—that through ambivalence individuals may give the impression of being fair and knowledgeable when the object is controversial (Maio & Haddock, 2010, p. 42); however, consensual attitude objects are associated with definite social norms, and in this case individuals may be more motivated to express clear-cut univalent attitudes.

Attitudinal Ambivalence and Self-Presentation

If it is true that attitudinal ambivalence is adaptive in that it allows to modify one's attitude as a function of the normative pressures of the environment, then it should be demonstrated that (a) individuals can exert some control over the expression of attitudinal ambivalence and that (b) this control is exerted for self-presentational purposes. To the best of our knowledge, such hypotheses have never been tested, probably because research on attitudinal ambivalence has historically focused on its weakness and not on its function, as noted above. In this respect, these hypotheses represent an important contribution to the literature on attitudinal ambivalence, in that they would represent a critical test of the existence of a strategic component in attitudinal ambivalence.

How to test these hypotheses? The "self-presentation paradigm", designed by Jellison and Green (1981) appears to be the perfect tool for this purpose, and indeed it has been developed to make it possible to uncover the presence of specific intentions in the expression

of attitudes. In order to test whether individuals are able to strategically manipulate the expression of an attitude with self-presentational intentions, Jellison and Green (1981) asked their participants to answer an attitude scale either in such a way as to be positively evaluated by a fictitious reader (self-enhancement) or in such a way as to be negatively evaluated (self-depreciation). Thus, the experimental protocol consists of a set of blatant instructions that directly ask individuals to voluntarily and strategically modulate their answers (Gilibert & Cambon, 2003). The rationale behind this method is that if the attitude score in the self-enhancement condition is significantly different from that in the self-depreciation condition, this means that the respondents know the social norms that regulate the expression of that attitude and they can deliberately adapt their answers to be positively (or negatively) evaluated. The self-presentation paradigm has been successfully used in several studies to detect people's awareness of various social norms (e.g. the norm of internality, Dubois & Beauvois, 2005; Jellison & Green, 1981; the norm of consistency; Jouffre, Py, & Somat, 2001). This paradigm was also used to identify the components put forward for self-presentation purposes in the endorsement of several constructs (e.g. achievement goals, Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; comparative optimism, Tyler & Rosier, 2009). Thus, the self-presentation paradigm allows to test our first hypothesis that (a) individuals can exert some control over the expression of attitudinal ambivalence: If this is true, then individuals asked to answer an attitudinal ambivalence measure in such a way as to present themselves positively (self-enhancement) should display a different level of attitudinal ambivalence in comparison with a situation in which they have to present themselves negatively (self-depreciation condition).

Another important property of the self-presentation paradigm is that it allows to test whether by default people are motivated by self-presentational concerns when answering a given questionnaire (see Gilibert & Cambon, 2003 for a discussion of this aspect). Indeed, in

a study on the ability of respondents to detect a social norm, Bressoux and Pansu (2007) have shown that the standard measure (respondents answer without specific instruction) and the pro-normative one (self-enhancement) are more strongly correlated than are standard and counter-normative (self-depreciation), suggesting that by default people try to obtain positive evaluations when answering a questionnaire. Thus, the self-presentation paradigm allows to test at the same time our second hypothesis that (b) the control over the expression of attitudinal ambivalence is exerted for self-presentational purposes: If this is true, then individuals should display a different level of attitudinal ambivalence when asked to answer an attitudinal ambivalence measure in such a way as to present themselves negatively (self-depreciation condition) in comparison with both a situation in which they have to present themselves positively (self-enhancement) and a situation in which they answer an attitudinal ambivalence measure without specific instructions (standard).

The third hypothesis aims at providing an explanation of the predicted strategic change in level of ambivalence, thereby providing an indication as to the direction of the attitude shift as a function of the self-presentation conditions. We propose that (c) attitudinal ambivalence may be used to convey a positive image of oneself, because—as mentioned above—it may imply a form of thoughtful reflection, a balanced view of the issue at hand that shows that one is considering both positive and negative aspects. If this is true, individuals should present themselves as more ambivalent in order to present themselves positively only when the attitude object is controversial, and not when the attitude object is not controversial, as this is a situation in which a balanced view may signal that the individual is considering the complexity of the issue. As a consequence, it is when the attitude object is controversial that individuals are expected to report less ambivalence when asked to answer an attitudinal ambivalence measure in such a way as to present themselves negatively (self-depreciation condition) in comparison with both a situation in which they have to present themselves

positively (self-enhancement) and a situation in which they answer an attitudinal ambivalence measure without specific instructions (standard). Interestingly, this idea is supported by an insightful comment formulated some years ago by Maio and Haddock: "It is possible that social norms make it occasionally desirable to have high ambivalence in an attitude, such as when an issue is controversial" (2004. p.435). When the attitude object is non-controversial, a positive image of oneself is achieved through expressing a clear-cut pro-normative attitude (either positive or negative, as a function of the consensus). However, to the best of our knowledge, this insight has never been put to the test.

Overview

The hypotheses are tested in four series of experiments on two different measures of attitudinal ambivalence. Firstly, ambivalence can be tapped through a measure of subjective ambivalence (Priester & Petty, 1996), also named "felt ambivalence"(Newby-Clark et al., 2002). This measure requires the participants to indicate to what extent they hold conflicting evaluations toward a specific issue. Secondly, ambivalent attitudes can be assessed indirectly in order to measure a "potential ambivalence", by assessing the positive and negative components of the attitude separately. For example, the method selected for the present research uses an open-ended measure (Bell, Esses, & Maio, 1996), and asks the respondents first to write down a list of adjectives (cognitive component) or emotions (affective component) related to the topic of interest, and then to attribute a valence to each written adjective or emotion from -3 (*extremely negative*) to +3 (*extremely positive*), as explained in detailed in the method section. As there is no consensus in the literature on the most effective way to measure attitudinal ambivalence (Conner & Armitage, 2008; Conner & Sparks, 2002), we used both measures in our experiments.

In order to test our hypotheses, we needed a controversial attitude object and a non-controversial one. We selected genetically modified organisms (GMOs) as our controversial

attitude object. First, Gaskell and his colleagues reported that Europeans were quite ambivalent about GMOs and biotechnologies (see Gaskell, 1997; Gaskell, Bauer, Durant, & Allum, 1999) and several previous studies on ambivalence used this attitude object (e.g. Nordgren, van Harreveld, & van der Pligt, 2006; van Harreveld, van der Pligt, de Vries, Wenneker, & Verhue, 2004). Secondly, even if the production and commercialization of GMOs began in 1994, controversies about genetically modified organisms are still quite vivid and frequent (e.g., Peeples, 2012). As a non-controversial attitude object, we decided to use a truism, an issue on which there is such a consensus that there is no need to debate (here, tooth brushing; McGuire, 1961). Experiments 1 and 2 used the controversial attitude object and Experiments 3 the non-controversial one. Experiment 4 directly manipulated the perception of controversy versus consensus on the same attitude object (GMOs).

Pilot Study

Participants and Method. In all, 121 students of a medium-size Swiss university volunteered in this pilot study ran on the Internet with LimeSurvey. To ensure that the participants' perception of both attitude objects was in line with the literature, participants were asked to indicate their perception of controversy or consensus toward several attitude objects, among which tooth brushing and GMOs. More precisely, they were asked to fill three 7-point bipolar scales devised for this pilot study, for each attitude object. The first bipolar scale ranged from 1 (*consensus*) to 7 (*controversy*), the second from 1 (*no debate*) to 7 (*debate*), and the third from 1 (*a mutual agreement*) to 7 (*a polemic disagreement*). The Cronbach's alpha was $\alpha = .84$ for GMOs and $\alpha = .89$ for tooth brushing; therefore, we computed the mean of the answers provided on the three items. The range of the scale varies from 1 (*perception of consensus*) to 7 (*perception of controversy*).

Results and Discussion. To test our hypothesis according to which GMOs should be perceived as controversial and tooth brushing as consensual, we conducted t-test analyses

against the mid-point of the scale (i.e. 4). The two t-tests supported our hypotheses: GMOs were indeed clearly evaluated as being controversial ($M = 5.26$), $t(120) = 11.76$, $p < .001$, $\eta^2_p = .53$, and tooth brushing as consensual ($M = 1.34$), $t(120) = -39.33$, $p < .001$, $\eta^2_p = .93$.

Experiment 1

Method

Participants and design. This experiment has been conducted on the Internet using LimeSurvey. The students of a medium-size Swiss university have been solicited by an e-mail presenting the experiment as a survey on genetically modified food. Five hundred and twenty three participants took part on a voluntary basis. The sample of Experiment 1a consisted of 244 females and 128 males; the mean age was 23.87 years ($SD = 4.92$). The sample of Experiment 1b comprised one hundred and fifty one participants; two participants were dropped from the analysis because of uncommon studentized deleted residuals (Judd & McClelland, 1989). The final sample consisted of 98 females and 51 males; the mean age was 23.54 years ($SD = 4.74$). Preliminary analyses revealed that sex and age had no impact on the studied effects, all $ps > .10$; thus, age and sex were not included in the reported analyses. As this is true for all the other experiments, this information will not be repeated. The self-presentation conditions were set as a within-participants variable with three levels: Standard, Self-Enhancement and Self-Depreciation.

Procedure and materials. In Experiment 1a, participants were asked to complete the three items used in Priester and Petty's (1996) research to assess felt ambivalence (for example, "to what extent do you hold an indecisive attitude toward GMOs"), adapted in French, on a 7-point Likert scale. In Experiment 1b, the participants had to write the adjectives coming to their mind when thinking about genetically modified food (max. 10) in a standard condition. Once the list was completed, they had to attribute a score ranging from -3 (*extremely negative*) to +3 (*extremely positive*) to each adjective of the list, according to their

perception of those adjectives (for example "dangerous" would be coded as -3, while "awesome" would be coded as +3), as in the method set forth by Bell et al. (1996). They were then asked to write down emotions coming to their mind when thinking about genetically modified food (max. 10) as in Bell et al. (1996).

For both experiments, participants first responded in a standard condition, that is without any specific instruction. They were then asked to do it again in order to be positively evaluated by a teacher (self-enhancement condition). We used the same instructions as Darnon et al. (2009) and told them "As you fill in the following questionnaire we would like you to try to generate a *good* image of yourself, that is, to answer in such a way as to be judged in a *positive* way by your teachers. More specifically, as you indicate your level of agreement with each of the following propositions, you should be trying to generate a *good* image of yourself". Finally, they followed the process in a self-depreciation condition. The same instructions as the above one were used except for the words *good* and *positive* respectively replaced by *bad* and *negative.* The standard condition was always presented as first; the order of self-depreciation and self-enhancement instructions was counterbalanced. The order of presentation did not yield any significant effect, *ps* > .05, and it has not been included in further analyses, either in these or in the other experiments.

Measures. The score of felt ambivalence (Experiment 1a) was computed by averaging the score of the 3 items. The Cronbach's alpha was $\alpha = .69$ for the standard condition, $\alpha = .72$ for the self-enhancement condition and $\alpha = .69$ for the self-depreciation condition. Two scores of potential ambivalence (both cognitive and affective; Experiment 1b) have been computed using the following formula (Bell et al., 1996): attitudinal ambivalence = $P + N - 2 | P - N | + k$. In this formula, P represents the value of the positive dimension score, N the absolute value of the negative dimension score and k is a constant added to preclude negative ambivalence scores for both the adjectives and the emotions (here, $k = 30$). Thus, the score of

ambivalence ranges from 0 (extremely univalent) from 90 (extremely ambivalent). However, in order to facilitate the readability of Tables 1 and 2 reporting five experiments on GMOs, we transformed the mean score in each experiment by computing the Percentage Of Maximum Possible score (POMP; Cohen, Cohen, Aiken, & West, 1999). POMP = [(*observed* - *minimum*)/(*maximum* - *minimum*)] × 100, where observed refers to the observed score for a single participant and *minimum* (*maximum*) refers to the minimum (maximum) possible score on the scale. Thus, regardless of the measure, the score of ambivalence ranged from 0 (extremely univalent) to 100 (extremely ambivalent). Potential cognitive ambivalence and potential affective ambivalence were significantly correlated, $r = .372$, $p < .001$. Despite this correlation, we separately treated these two variables as they relate to different components of ambivalence (see Mucchi-Faina et al., 2009).

Results

To test our hypotheses that (a) individuals can exert some control over the expression of attitudinal ambivalence and that (b) this control is exerted with self-presentational concerns, we should find that both the self-enhancement and standard condition should elicit a different level of ambivalence than the self-depreciation condition. To test this effect, we designed a within-participant planned contrast whereby the score in the self-depreciation condition (2) has been tested against both the score in the standard condition (-1) and the score in the self-enhancement condition (-1) following the approach proposed by Furr & Rosenthal (2003). Moreover, the score in the standard condition (1) was tested against the score in the self-enhancement condition (-1) in an orthogonal contrast; the score in the self-depreciation condition was set as 0. Results of Experiment 1a and 1b are reported in Table 1. The proper use of contrast analysis requires the planned contrast testing the hypothesis to be significant and the orthogonal contrast testing the residual to be non-significant (Judd & McClelland, 1989).

Experiment 1a: Felt ambivalence. The test of the planned contrast supported the hypotheses, $F(1,371) = 9.84$, $p = .002$, $\eta^2_p = .026$. Participants reported significantly more ambivalence in the standard condition and in the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not-significant, $F(1, 371) < 1$, $p > .05$.

Experiment 1b.

Potential cognitive ambivalence. Considering the cognitive component of the potential ambivalence, the same planned contrast as in Experiment 1a reached significance, $F(1,148) = 14.52$, $p < .001$, $\eta^2_p = .09$. Participants reported more ambivalence in the standard condition and the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not significant, $F(1, 148) = 3.08$, $p > .05$.

Potential affective ambivalence. We replicated the above effects considering the affective component of the potential ambivalence. Participants reported more ambivalent attitudes in the standard condition and in the self-enhancement condition than in the self-depreciation condition, $F(1,148) = 17.77$, $p < .001$, $\eta^2_p = .11$. The orthogonal contrast was not significant $F(1, 148) < 1$, $p > .05$.

Discussion

These two experiments have been designed to test that individuals can exert some control over the expression of attitudinal ambivalence and that this control is exerted with self-presentational concerns (hypotheses a and b). Consistently with these hypotheses, contrast analyses indicated in both experiments that participants reported significantly more ambivalence in the standard condition and in the self-enhancement condition than in the self-depreciation condition. The hypotheses received support with both the measure of "felt ambivalence" (Experiment 1a) and the measure of "potential ambivalence" (Experiment 1b, with both adjectives and emotions).

One might argue that an important limitation of this experiment is the use of an Internet-

based questionnaire. Indeed, several scholars questioned the replicability of studies ran on the Internet in comparison with paper-and-pencil studies (Joinson, 1999; Gosling, Vazire, Srivastava, & John, 2004). In order to assess whether the present results are method-dependent, we ran the same experiments using a paper-and-pencil paradigm, within the more controlled environment of lab cubicles. To avoid the mutual influences in the expression of affective and cognitive ambivalence, we separated these two components in two distinct experiments (2b and 2c).

Experiment 2

Method

Participants and design. This experiment took place at the end of a course. Forty-five first-year Psychology students enrolled in a medium-size Swiss university volunteered in Experiment 2a. Thirty-four women and 9 men constitute the sample with a mean age of 21.91 years (*SD* = 5.92). Two participants did not indicate their sex and age. Twenty women and 7 men participated in Experiment 2b with a mean age of 21.96 years (*SD* = 6.31). One participant did not indicate his sex and age. Twenty-five women and 6 men volunteered in Experiment 2c with a mean age of 21.42 years (*SD* = 4.56). Two participants did not indicate their sex and age. The self-presentation conditions were set as a within-participants variable with three levels: Standard, Self-Enhancement and Self-Depreciation.

Procedure and materials. Participants of Experiments 2a, 2b and 2c were asked to complete the same steps as in Experiment 1. However, participants of Experiment 2b only reported adjectives associated with GMOs and the ones of Experiment 2c only reported emotions. The control condition was always presented first followed by the self-depreciation and self-enhancement conditions, which were counterbalanced.

Measure. The index of felt ambivalence (Experiment 2a) was computed by averaging the score on the same 3 items as in Experiment 1a. The Cronbach's alpha was $\alpha = .78$ for the

standard condition, $\alpha = .69$ for the self-enhancement condition and $\alpha = .61$ for the self-depreciation condition. A score of potential ambivalence (potential cognitive ambivalence in Experiment 2b; potential affective ambivalence in Experiment 2c) has been computed using the Bell et al. 's formula (Bell et al., 1996) as for Experiment 1b. We again transformed and computed the percentage of maximum possible (POMP).

Results

Results of Experiments 2a, 2b and 2c are reported in Table 2.

Experiment 2a: Felt ambivalence. The test of the planned contrast corresponding to our hypothesis yielded a significant effect, $F(1, 44) = 4.89$, $p = .032$, $\eta^2_p = .10$. Once again, participants reported significantly more ambivalence in the standard condition and in the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not significant, $F(1, 44) = 2.56$, $p > .05$.

Experiment 2b: Potential Cognitive ambivalence. The test of the planned contrast corresponding to the hypothesis reached significance, $F(1, 27) = 17.69$, $p < .001$, $\eta^2_p = .39$. Participants reported more ambivalent attitudes in the standard condition and in the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not significant, $F(1, 27) = 2.57$, $p > .05$.

Experiment 2c: Potential Affective ambivalence. The planned contrast corresponding to the hypotheses was significant, $F(1, 32) = 7.47$, $p = .01$, $\eta^2_p = .19$. Participants reported more ambivalence in the standard condition and in the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not significant, $F(1, 32) = 2.88$, $p > .05$.

Discussion

The results of Experiments 2a, 2b and 2c amounted to a full replication of Experiments 1a and 1b. Indeed, across our three paper-and pencil experiments, carried out in lab cubicles,

contrast analyses revealed that participants reported significantly more ambivalence in the standard and in the self-enhancement conditions than in the self-depreciation condition. The hypotheses received support with the measure of "felt ambivalence" (Experiment 2a), and the measure of "potential ambivalence", with both adjectives (Experiment 2b) and emotions (Experiment 2c).

We hypothesized that such results should only be observed on controversial attitude objects, as such objects require considering the diversity of their aspects. A consequence of this reasoning, and the basis for hypothesis (c), is that when the attitude object is non-controversial, attitudinal ambivalence is useless in terms of self-presentational purposes, and a positive image of oneself is achieved through expressing a clear-cut attitude. Two experiments have been carried out to test this hypothesis. The first, experiment 3, uses tooth brushing as the attitude object; as tooth brushing is a truism, a totally consensual attitude object according to our pilot study and McGuire's (1961) work, everybody is expected to hold the same attitude. Thus, in order to generate a positive self-image, participants should express a clear-cut attitude, which should results in participants reporting lower level of ambivalence in the standard and self-enhancement conditions, as compared with the self-depreciation condition. The second test comes from experiment 4, that directly tests hypothesis (c) by manipulating the perception of controversy versus consensus within the same experiment and with the same attitude object (GMOs). If the above reasoning is correct, we should find higher levels of ambivalence in the standard and self-enhancement conditions than in the self-depreciation condition when the instructions tell the participants that there is some controversy on the issue (as in experiments 1 and 2), and lower levels of ambivalence in the standard and self-enhancement conditions than in the self-depreciation condition when the instructions tell the participants that there is consensus (as in experiment 3). Experiment 3

uses a felt ambivalence measure and experiment 4 a potential ambivalence measure (in its cognitive component).

Experiment 3

From an operational point of view, in this experiment using a measure of felt ambivalence, we predict that participants should present themselves as less ambivalent in both a standard and a self-enhancement situation than in a self-depreciation condition.

Method

Participants and design. Twenty-seven first-year Psychology students enrolled in a medium-size Swiss university volunteered in this experiment at the end of a course. Twenty women and 4 men constitute the sample with a mean age of 22.38 years (*SD* = 5.55). Three participants did not indicate their sex and age. The self-presentation conditions were set as a within-participants variable with three levels: Standard, Self-Enhancement and Self-Depreciation.

Procedure and materials. Participants were asked to complete the same steps as in Experiments 1a and 2a. The control condition was always presented first followed by the self-depreciation and self-enhancement conditions, which were counterbalanced.

Measure. The index of felt ambivalence was computed by averaging the score on the 3 items (α = .78 for the standard condition, α = .85 for the self-enhancement condition and α = .81 for the self-depreciation condition). We computed the percentage of maximum possible (POMP) as for the previous experiments.

Results

Results of Experiment 3 are reported in Table 3. The test of the planned contrast corresponding to our hypothesis yielded a significant effect, $F(1, 26) = 107.15$, $p < .001$, $\eta^2_p = .80$. As predicted, participants reported significantly less ambivalence in the standard

condition and in the self-enhancement condition than in the self-depreciation condition. The orthogonal contrast was not significant, $F(1, 26) < 1$, $p > .05$.

Discussion

These results complement those of experiments 1 and 2 to support our hypothesis that attitudinal ambivalence is used for self-presentational purposes by increasing the level of reported ambivalence when the attitude object is controversial, and lowering it when the attitude object is not controversial. In Experiment 3, indeed, with a felt ambivalence measure, participants presented themselves as holding a less ambivalent attitude when asked to present themselves in the standard and in the self-enhancement conditions, as compared with the self-depreciation condition. Although these results are clear-cut, and the pilot study has clearly indicated the profound difference in level of controversy between GMOs and tooth brushing, support to hypothesis 3 comes from the comparison of the effects obtained in separate experiments (reversed effects in experiment 3 as compared with experiments 1 and 2). To ensure that individuals use ambivalence to display a positive image of themselves when there is a controversy and not when there is a consensus, the perception of controversy or consensus needs to be directly manipulated rather than being inferred through the use of different attitude objects. Experiment 4 was designed for this purpose.

Experiment 4

From an operational point of view, we predict higher levels of ambivalence in the standard and self-enhancement conditions than in the self-depreciation condition when the instructions tell the participants that there is some controversy on the issue, and lower levels of ambivalence in the standard and self-enhancement conditions than in the self-depreciation condition when the instructions tell the participants that there is consensus.

Method

Participants and design. Sixty-one students enrolled in a medium-size Swiss university volunteered in this experiment at the end of a course. Six participants have been excluded from the analyses, for noncompliance to the instructions (they disregarded the self-presentation conditions). Forty-two women and 13 men thus constituted the sample with a mean age of 21.46 years (*SD* = 4.95). Participants were randomly assigned to one of the two experimental conditions (either the consensus or the controversy condition) that were set as a between-participants variable (respectively, 25 and 30 participants). The self-presentation conditions were set as a within-participants variable with three levels: Standard, Self-Enhancement and Self-Depreciation.

Procedure and materials. In the *consensus* condition, we presented GMOs as an attitude object that does not lead to any controversy, that is not really debated as most individuals reported being against GMOs. Below this explanation, a graph was displayed in order to reinforce the manipulation. This bogus graph, entitled the "representation of the attitude of the Swiss towards GMOs" presented 89% of the Swiss against, and 11% in favor of GMOs. In the *controversy* condition, GMOs were introduced as a controversial attitude object that is really debated, as there are almost as many individuals who are in favor of GMOs as individuals who are against it. Below, a bogus graph entitled as before presented 51% of the Swiss against and 49% in favor of GMOs.

Because of time constraints, participants were asked to report the adjectives they associate with GMOs by selecting them from a list of ten positive and ten negative adjectives (cf. Cavazza & Butera, 2008). We selected the 10 most frequent positive adjectives and the 10 most frequent negative ones from the ones generated by participants in Experiment 1b. The positive adjectives were: *improved, promising, innovative, productive, beneficial, healthy, required, cost-effective, hardy* and *scientific*; the negative adjectives were: *useless, unsure, uncontrollable, dangerous, harmful, manipulated, worrying, unknown, doubtful* and

transgenic.

Measure. A score of potential cognitive ambivalence has been computed again using the Bell et al.'s formula (Bell et al., 1996), transformed into POMP.

Results and Discussion

Results of Experiment 4 are reported in Figure 1. Our prediction was tested via the interaction between the experimental condition and the contrast opposing the self-depreciation condition (2) against the standard (-1) and the self-enhancement (-1) conditions. This analysis resulted in a significant interaction, $F(1, 53) = 13.86$, $p < .001$, $\eta^2_p = .21$. An analysis of simple effects revealed that in the *controversy* condition, participants indeed significantly displayed *more* ambivalence in both the standard ($M = 27.52$, $SD = 12.31$) and the self-enhancement conditions ($M = 25.15$, $SD = 11.83$) than in the self-depreciation condition ($M = 19.96$, $SD = 12.89$), $F(1, 53) = 10.50$, $p = .002$, $\eta^2_p = .16$. The orthogonal contrast was not significant, $F(1, 53) < 1$, $p > .05$. Conversely, participants in the *consensus* condition displayed significantly *less* ambivalence in both the standard ($M = 23.29$, $SD = 11.69$) and the self-enhancement conditions ($M = 21.24$, $SD = 12.25$) than in the self-depreciation condition ($M = 26.76$, $SD = 10.91$), $F(1, 53) = 4.34$, $p = .042$, $\eta^2_p = .07$. The orthogonal contrast was not significant, $F(1, 53) < 1$, $p > .05$. In sum, and in line with hypothesis (c), these results show that participants used ambivalence to display a positive image of themselves on a controversial attitude object and not when the object was consensual.

General Discussion

Attitudinal ambivalence has long been considered as a weak form of attitude; for the first time, the present research investigated the possibility for people to use attitudinal ambivalence strategically, with a view to achieving some social value. The seven experiments presented in this article have been designed to investigate whether the expression of ambivalent attitudes can be controlled and whether this control may have the purpose of

achieving a socially valued self-presentation. Furthermore, we extended our reasoning and tested the process supposedly responsible of this effect: Ambivalence is used to generate a positive self-image when it can be considered as a positive feature, namely to the extent that the attitude object is controversial or presented as being controversial.

Our first hypothesis predicted that individuals asked to answer an attitudinal ambivalence measure in such a way as to present themselves positively (self-enhancement) should display a different level of attitudinal ambivalence in comparison with a situation in which they had to present themselves negatively (self-depreciation condition). In other words, the expression of attitudinal ambivalence should be controllable, and could be adapted to meet relevant social norms (here the demands set forth by the experimenter). The second hypothesis predicted that ambivalent attitudes may be used with self-presentational concerns, and that therefore individuals should display a different level of ambivalence when asked to answer an attitudinal ambivalence measure in such a way as to present themselves negatively (self-depreciation condition) in comparison with both a situation in which they have to present themselves positively (self-enhancement) and a situation in which they answer an attitudinal ambivalence measure without specific instructions (standard). In other words, by default individuals would use the expression of ambivalent attitudes as a way to achieve a positive self-presentation. Finally, the third hypothesis considers that attitudinal ambivalence may be used to convey a positive image of oneself, because it may communicate a balanced view of the issue at hand that shows that one is considering both positive and negative aspects. If this is true, hypotheses one and two should hold for a controversial attitude object; when the attitude object is non-controversial, attitudinal ambivalence is useless in terms of self-presentational purposes, and a positive image of oneself is achieved through expressing a clear-cut pro-normative attitude.

Results supported these three hypotheses. On a controversial attitude object, namely

GMOs (Experiments 1 and 2), we observed that individuals indeed reported a higher level of ambivalence in the standard and the self-enhancement condition than in the self-depreciation condition, which supports hypotheses one and two. On a non-controversial attitude object, namely tooth brushing (Experiment 3), individuals expressed a less ambivalent attitude in the standard and the self-enhancement condition than in the self-depreciation condition: They endorsed a more univalent position on the felt ambivalence measure, which indirectly supports hypothesis 3. Direct support for this hypothesis comes from Experiment 4, where the reversal of effects observed from Experiments 1 and 2 (controversial) to Experiment 3 (consensual), was replicated within the same experiment by manipulating the alleged controversy versus consensus on the same attitude object (GMOs).

These results contribute to the literature on attitudinal ambivalence by providing for the first time a direct test of the suggestion made by Cavazza and Butera (2008) and Mucchi-Faina et al. (2009) that the expression of attitudinal ambivalence may have the function of meeting salient social norms. The present results, indeed, reveal that the expression of attitudinal ambivalence serves the purpose of achieving a positive self-presentation when there is a controversy, since both by default (standard) and in order to be positively evaluated (self-enhancement), people report a higher level of ambivalence than the one reported in the self-depreciation condition. However, when there is a clear consensus on the attitude object, ambivalent attitudes are no longer useful for self-presentation, and straightforward pro-normative attitudes are used instead. In sum, these results contribute to the contention that attitudinal ambivalence may serve an adaptive function, as individuals appear to be able to strategically control the expression of ambivalence with a view to achieving a valued self-presentation. This may open the way to several lines of research aiming at uncovering other social functions that attitudinal ambivalence may serve.

The present results also support the idea of a positive link between heated debates (i.e.

controversy) and ambivalence (see Zhao & Capella, 2008; Stoeckel, 2013), as the participants of Experiment 4 purposely displayed more ambivalence when they had to express themselves to achieve a positive image of themselves on a controversial attitude object. Consequently, it seems plausible to think that the expression of attitudinal ambivalence could be socially valued when being expressed on such attitude objects. Although displaying a positive image of oneself is a fundamental goal in the life of individuals, recent research has shown that social value can be achieved through different categories of self-presentational concerns, namely social desirability (or warmth) and social utility (or competence; cf. Darnon et al., 2009; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). If it is true that ambivalence is valued in controversial issues—as shown in the present research—because it conveys the notion that one is pondering alternative aspects of the same problem, then it should be found that ambivalence is valued especially when assessing people's social utility, as opposed to social desirability. Thus, as they are pondering the pros and the cons associated with the attitude object, ambivalent individuals could then be evaluated as the most competent ones (i.e. the highest on social utility) in comparison with univalent individuals. This is, we believe, a promising hypothesis for future research and would represent a new approach of ambivalence in the literature.

Interestingly, the present results also contribute to the literature on self-presentation. Attitudinal ambivalence is traditionally opposed to cognitive consistency (see Gawronski, 2012), as it results from evaluative inconsistencies (Fabrigar, MacDonald, & Wegener, 2005). Seen through the lens of cognitive consistency, individuals should not put ambivalence forward: Indeed, if cognitive consistency is considered as a fundamental need (Festinger, 1957; Gawronski & Strack, 2012), research has also shown that the conditions of its expression appeared to be contextual and related to impression-management concerns (e.g., Tedeshi, Schlenker, & Bonoma, 1971; Schlenker, 1975). Appearing consistent in the eyes of

others was proposed and found to being linked with social value (i.e. as potentially pleasing an audience; Baumeister, 1982; Gilibert & Cambon, 2003). This research tradition, thus suggest that individuals should be less likely to express their ambivalence and even less so to present themselves positively. However, if this is most often the case (i.e. when there is a consensus on what to think of an attitude object), it might not be the case when controversial attitude objects are concerned. Our results indeed show that individuals do display more ambivalence to present a positive image of themselves, when the attitude object is controversial. This is coherent with the recent literature on inter-group relations showing that the expression of ambivalence toward out-groups (e.g. immigrants, a controversial issue) was evaluated as being more balanced, realistic and acceptable than univalence (Brauer, Er-Rafiy, Kawakami, & Phills, 2012; Costarelli, 2011). Thus, the present research shows that consistency is not the only possible response to impression-management concerns, and that ambivalence could be used when the issues are complex or controversial.

It is important to note that the present results appear to be quite robust as they were found in seven experiments that used two different methods (web-based and paper-and-pencil questionnaires) and two different measures to assess ambivalence. Indeed, results supported our hypotheses when ambivalence was measured with a direct measure (subjective or felt ambivalence), as well as when ambivalence was measured with a more indirect measure (potential ambivalence). We considered these two different measures of ambivalence as there is no consensus in the literature about which one should be preferably used (Conner & Armitage, 2008; Conner & Sparks, 2002) even if they are qualitatively different. In line with this, our results indicate that, actually, both measures appeared to be permeable to social desirability effects, as individuals were able to control the expression of their attitude when they reported both their felt and their potential ambivalence.

A methodological issue needs to be mentioned. One could argue that setting these

experimental conditions as a within-participant variable may have maximized the observed difference in the self-enhancement and self-depreciation conditions, in comparison with a more natural situation. However, presenting either the self-enhancement or the self-depreciation condition in first position never had an effect on our planned contrast—the effects including order of presentation were always non-significant. Furthermore, the rationale behind the self-presentation paradigm (Dubois, 2000; Jellison & Green, 1981) is that when a difference is observed precisely in the within-participant comparison between the self-enhancement condition and the self-depreciation condition, it should be inferred that the respondents know the social norms that regulate the expression of that attitude and can strategically adapt their answers to be positively (or negatively) evaluated. We observed such strategy in all our experiments.

Two limitations need to be discussed, as they may open new avenues for research. First, these experiments were conducted with university students, and University tends to attribute particular value to critical thinking (Guiller, Durndell, & Ross, 2008); as ambivalence requires the individual to evaluate both the positive and the negative components of an attitude object, ambivalence could indirectly be particularly valued at university. Thus, it would be interesting to conduct an experiment similar to the present ones that compares students to other samples. Second, only two attitude objects were considered in this paper. Thus, it would be interesting for future researches to apply the same reasoning to other attitude objects, but also to extend the debate, for example by studying how attitudes can be affected when a celebrity or a political figure is targeted by a controversy. Similarly, it would be interesting to focus on how inter-personal relationships can be modified as a function of polemic disagreements.

Notwithstanding these limitations, the present results bring convergent and robust support to a view of attitudinal ambivalence as an adaptive mechanism, as they reveal that

individuals can control the expression of ambivalence and use it strategically for self-presentation purposes. After two decades of research that points to its weaknesses and pitfalls, the present research might open the way to the study of the strengths of attitudinal ambivalence.

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Table 1.

Mean ambivalence scores and standard deviations (in parentheses) as a function of the self-presentation conditions and the type of measure (Experiments 1a and 1b).

	Self-presentation conditions		
Type of measure	Standard	Self-Enhancement	Self-Depreciation
Experiment 1a (N = 372):			
Felt Ambivalence	49.09_a	48.01_a	40.87_b
	(25.94)	(30.21)	(32.20)
Experiment 1b (N = 149):			
Potential Cognitive Ambivalence	28.60_a	27.04_a	24.79_b
	(9.62)	(8.47)	(9.06)
Potential Affective Ambivalence	30.67_a	30.01_a	28.02_b
	(7.03)	(5.87)	(6.73)

Note. Means in the same row that do not share the same subscripts differ at $p < .05$ in the contrast analysis.

Table 2.

Mean ambivalence scores and standard deviations (in parentheses) as a function of the type of measure and the self-presentation conditions (Experiments 2a, 2b and 2c).

	Self-presentation conditions		
Type of measure	Standard	Self-Enhancement	Self-Depreciation
Experiment 2a (N = 45):			
Felt Ambivalence	55.06_a	45.68_a	36.42_b
	(24.90)	(30.19)	(31.03)
Experiment 2b (N = 28):			
Potential Cognitive Ambivalence	31.86_a	28.73_a	23.49_b
	(6.53)	(9.26)	(7.19)
Experiment 2c (N = 33):			
Potential Affective Ambivalence	34.24_a	31.92_a	30.24_b
	(6.46)	(8.94)	(8.48)

Note. Means in the same row that do not share the same sub-scripts differ at $p < .05$ in the contrast analysis.

Table 3.

Mean ambivalence scores and standard deviations (in parentheses) as a function of the type of measure and the self-presentation conditions (Experiment 3).

	Self-presentation conditions		
Type of measure	Standard	Self-Enhancement	Self-Depreciation
Experiment 3 (N = 27):			
Felt Ambivalence	14.20a	10.70a	85.18b
	(21.14)	(21.62)	(25.13)

Note. Means in the same row that do not share the same sub-scripts differ at $p < .05$ in the contrast analysis.

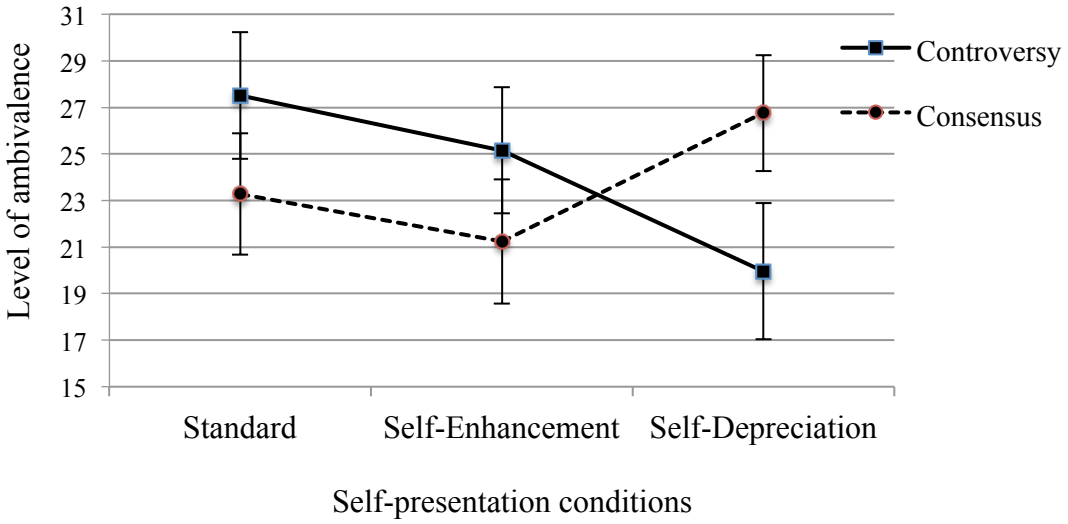

Figure 1. Level of ambivalence as a function of the self-presentation conditions and the experimental conditions (Experiment 4). Error bars are based on Standard Error of the mean.