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## THE USEFUL SIDE OF AMBIVALENCE: Ambivalent attitudes can be adaptive and socially valued

Pillaud Vincent

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FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES  
INSTITUT DES SCIENCES SOCIALES

THE USEFUL SIDE OF AMBIVALENCE:  
Ambivalent attitudes can be adaptive and socially valued

THÈSE DE DOCTORAT

présentée à la  
Faculté des Sciences Sociales et Politiques  
de l'Université de Lausanne

pour l'obtention du grade de  
Docteur ès Psychologie Sociale

par

Vincent Pillaud

Directeur de Thèse  
Professeur Fabrizio Butera

Membres du Jury  
Professeure Nicoletta Cavazza  
Professeur Juan Manuel Falomir  
Professeur Alain Clémence

LAUSANNE  
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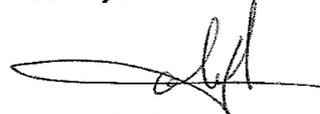
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autorise, sans se prononcer sur les opinions du candidat, l'impression de la thèse de Monsieur Vincent PILLAUD, intitulée :

**« *The useful side of ambivalence : Ambivalent attitudes can be adaptive and socially valued.* »**

Lausanne, le 15 juillet 2013

**Le Doyen de la Faculté**



Professeur  
Fabien Ohl

## RÉSUMÉ

En s'inspirant de la littérature récente qui a dépeint l'ambivalence comme étant adaptative et en lien avec des comportements stratégiques, cette thèse examine le versant utile des attitudes ambivalentes. Elle met tout d'abord en évidence que son expression peut-être sciemment contrôlée et mise en avant pour des raisons d'auto-présentation. De plus, elle démontre que les individus peuvent présenter une attitude ambivalente afin de gagner l'approbation sociale sur un objet d'attitude controversé alors que l'inverse a été observé sur des objets consensuels (Première ligne de recherche). Cette thèse a également révélé que l'expression d'attitudes ambivalentes pouvait amener à être valorisé socialement. En effet, contrairement à des attitudes plus tranchées (pro-normatives ou contre-normatives), les attitudes ambivalentes ont été évaluées de façon plus importante sur la dimension de l'utilité sociale (une dimension qui indique la compétence d'autrui ou encore la propension à évoluer dans la hiérarchie sociale). La valorisation de l'ambivalence n'est apparue que sur la dimension de l'utilité sociale et non sur la dimension de la désirabilité sociale (une dimension qui indique la sympathie d'autrui ainsi que la propension à être apprécié socialement). De plus, ce résultat a été observé sur des thèmes controversés et non sur des thèmes consensuels (Seconde ligne de recherche). Dans l'ensemble cette thèse soutient une approche de l'ambivalence comme donnant lieu à des bénéfices. Elle peut également ouvrir la voie à l'étude de l'ambivalence en lien avec la pensée critique.

## ABSTRACT

Drawing on the recent literature that portrayed ambivalence as being adaptive and linked with strategic behaviors, this thesis examines the useful side of ambivalent attitudes. It first revealed that the expression of ambivalent attitudes could be controlled and purposely displayed for self-presentational concerns. Furthermore, it demonstrated that people could put ambivalence forward to gain social approval when expressing it on controversial social issues, whereas the opposite was true on consensual social issues (First line of research). The thesis also revealed that the expression of ambivalent attitudes could lead to be socially valued. Indeed, contrary to clear-cut attitudes (either pro-normative or counter-normative attitudes), ambivalent attitudes have been evaluated the highest on the social utility dimension (a dimension indicating people's competence as well as the extent to which they are likely to climb in social hierarchy). The valorization of ambivalent attitudes only appeared on social utility and not on social desirability (a dimension indicating people's niceness as well as the extent to which they are likely to be socially appreciated). This effect was true on controversial social issues but not on consensual ones (Second line of research). Overall, this thesis provides support for an approach that conceives attitudinal ambivalence as leading to benefits. It also may open avenues for the study of ambivalence in relation with critical thinking.

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# **1. OVERVIEW**

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## 1- Overview

"The presence in moral codes, proverb sets, and motivational systems of opposing values is often interpreted as discrediting the value system by showing its logical inconsistency. This is a misapplication of logic, and in multiple-contingency environments, the joint presence of opposing tendencies has a functional survival value. Where each of two opposing tendencies has survival relevance, the biological solution seems to be an ambivalent alternation of expressions of each rather than the consistent expression of an intermediate motivational state. Ambivalence, rather than averaging, seems the optimal compromise".

Campbell, 1965 (cited in Weick, 2004, p.661)

Attitudes were conceived of as bipolar constructs from the inception of their systematic investigation in Social Psychology (see Thurstone, 1928; Likert, 1932, Osgood, Suci, & Tannenbaum, 1957 for example). The concept of attitude refers to an evaluation of a stimulus (an object, or a person for instance) with some degree of positivity or negativity (Eagly & Chaiken, 1993; Olson & Fazio, 2009); in this respect, an attitude can only be considered as indicating if an individual tends to like or dislike an attitude object. However, it appears that, depending on the attitude object, our evaluations can sometimes be not so clear-cut. It seems quite easy to imagine that people can have troubles to make up their mind when being asked to state if death penalty is a good or a bad thing for instance. In this dissertation, we will focus on such type of attitudes, namely on attitudinal ambivalence. Ambivalence is characterized by holding simultaneously both a positive and a negative attitude toward an attitude object (Scott, 1968; Kaplan, 1972; Thompson, Zanna, & Griffin, 1995). As we will see in the theoretical part, because of its duality, ambivalence has mostly been considered as either being linked with indecision (if people cannot pick a side, then they should most likely not know enough about the issue), or with discomfort (if people hold both a positive and a negative attitude, then they must feel conflicted). Consequently, this type of attitude has mainly been discussed in negative terms in the literature in Social Psychology. However, ambivalence has been differently portrayed in other domains (such as Management or in Psychology of Organizations for instance). In such domains, ambivalence has been conceived of as a compromise between knowledge and doubts (Weick, 1998) that can allow adaptation in a fast environment (Weick; 2002, 2004). Ambivalence has also been discussed as enhancing mindfulness and thus potentially leading to wiser decisions (Piderit, 2000; Fiol & O'Connor, 2003; Plambeck & Weber, 2010). In this dissertation, we propose an approach in which ambivalence has been considered as having some value, and as being potentially useful.

The basis of the reasoning has been rooted on the fact that several studies in the field of social influence and attitude strength considered ambivalence as a weak form of attitude (Petty & Krosnick, 1995; Conner & Sparks, 2002). Its weakness has been questioned through

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several factors: its link with behavior, its stability across time and its resistance toward influence. For instance, ambivalence was repeatedly found to be a poor predictor of intentions or further behaviors (see Armitage & Conner, 2004 for a review). Ambivalent individuals appeared to be less confident in their attitude or political judgments (Gross, Holtz, & Miller, 1995; Jonas, Diehl, & Brömer, 1997; Meffert, Guge, & Lodge, 2004). They also were reported as suffering more in decision-making situations. For instance, they tended to fluctuate more importantly in their evaluations (Lavine, 2001), to take more time to choose their political candidate (Mutz, 2002) whereas this was less the case for univalent individuals. Ambivalence has also been described as leading to less stable attitudes over time (Bargh, Chaiken, Govender, & Pratto, 1992; Jonas, Brömer, & Diehl, 2000a; but see Jonas, Brömer & Diehl, 2000b). Furthermore, ambivalent individuals appeared to be easily influenced by others (Zembarain & Johar, 2007) or even by internal factors (their mood for instance; see Bell & Esses, 1997). Being submitted to univalent attitude expressions, ambivalent individuals sided with univalent individuals and endorsed their point of view as a result (Armitage & Conner, 2000; Hodson, Maio & Esses, 2001).

However, the pliability of ambivalent attitudes has been questioned and nuanced by Cavazza & Butera (2008). These researchers reported in line with previous studies that ambivalent individuals changed their attitude when they were in a situation of influence but, of importance, such fluctuation appeared only when ambivalent individuals were directly confronted with the source of influence. In other terms, they mirrored the attitudes of the source of influence but, unlike univalent individuals, this was only done at a direct level (where the source of influence was more salient). They indeed maintained their attitude at the indirect level (where the source of influence was less salient). Ambivalent individuals were thus no longer considered as undecided individuals waiting for someone to help them picking a side (see Hodson et al., 2001 for this kind of reasoning), but rather as individuals who could adapt to a source of influence, as their shift was only superficial.

Our first set of studies focused especially on this aspect. We investigated if individuals could indeed adapt their level of ambivalence to normative pressures and hypothesized that such adaptation would be done strategically. More precisely, we predicted that ambivalence could be used for self-presentational purposes and expected individuals to display more or less ambivalence as a function of the normative pressures of the environment. We also aimed at highlighting one of the mechanisms possibly responsible for this effect. We proposed to view ambivalence as indicating that one is pondering the pros and the cons of an issue when expressing this form of attitude. Consequently, we hypothesized that people should decide to

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display ambivalence in order to gain social approval when they are expressing their position on a controversial attitude object. We expected to observe the reverse on more consensual attitude objects. Indeed, on such attitude objects, there is a strong consensus on what the expressed response should be (Pérez & Mugny, 1996) and thus, ambivalent attitudes could no longer be put forward to appear positively in the eyes of others.

The second set of studies questioned the perception of ambivalent individuals. Indeed, hypothesizing that attitudinal ambivalence could be strategically displayed and used on controversial issues in order to form a positive image of oneself implies that ambivalent attitudes could indeed be valued by an observer. Thus, we decided to investigate if the strategy of displaying attitudinal ambivalence to gain social approval is efficient or not. With this in mind, we set out to study the perception of ambivalence and rapidly noticed that the relevant findings in the literature were as quite paradoxical. On the one hand, ambivalence has been mainly presented negatively. For instance, it has often been described as an inconsistency, whereas cognitive consistency has repeatedly been described as a valued component. Indeed, two lines of research reported that consistency could be preferred to inconsistency. Cialdini, Trost and Newsom (1995) demonstrated that, even if some individuals could endorse it more strongly than the others, on average people tend to value consistency. Moreover, Channouf and Mangard (1997) reported that consistency is socially valued in that it could give a positive image when people display consistency in front in an audience. On the other hand, ambivalence has been tied up with strategic behavior (Cavazza & Butera, 2008; Plambeck & Weber, 2010) and critical thinking (Piderit, 2000; Stoeckel, 2013).

As in our first research line, we viewed ambivalence as indicating that people are pondering the pros and the cons of an issue when they display such a form of attitude. Thus, we reasoned that ambivalent individuals could be perceived as being competent on the topic. It has been widely reported that two fundamental dimensions organize the social judgment of individuals (see Kervyn, Yzerbyt, & Judd, 2010 for a recent review). We consequently hypothesized that ambivalent individuals should be evaluated more positively on social utility (a dimension indicating people's competence as well as the extent to which people will be likely to climb in social hierarchy; Beauvois & Dubois, 2009) than univalent individuals. We also hypothesized that the pro-normative attitudes should be preferred over ambivalent attitudes on the dimension of social desirability (a dimension indicating people's sympathy as well as the extent to which people will be likely to be appreciated socially; Beauvois & Dubois, 2009). However, it is important to note that this should only be the case on

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controversial attitude objects. Indeed, in this case, the expression of ambivalence could be recognized as indicating a deep reflection of the issue and thus be valued on complex issues such as controversial ones.

A different dynamic was expected on consensual attitude objects. Consensuses imply that most people agree on what to think of the attitude object and, notably, in perceiving it positively or negatively. For instance, it has been reported that people tend to think that others think as they do (e.g. the false consensus effect; see Krueger, 1998 for a review) as well as that people value individuals who hold similar attitudes as theirs (see Ullrich & Krueger, 2010 for instance). Thus, people should prefer pro-normative attitudes to ambivalent ones on consensual issues. Consequently, we hypothesized that we should observe linear effects on both dimensions (social utility and social desirability) for consensual attitude objects. More precisely, we predicted that the pro-normative attitude should be rated the highest on social utility and social desirability, than should be ambivalent attitudes (as they are a bit deviant) and, finally, counter-normative attitudes (as they are the most deviant attitudes).

### **Structure of the dissertation**

The theoretical part of the dissertation consists of 3 parts where we first introduce the concept of attitudes and of attitudinal ambivalence and discuss about its measurement. In the second part, we discuss the strengths and weaknesses of ambivalence and address what their function could be. We conclude the theoretical part by discussing the perception of ambivalent attitudes, presenting the paradigm that allows the study of social norms and end the section by presenting the objectives of the thesis.

Two empirical parts present the data testing our hypotheses. We present eight experiments, organized in two lines of research and using two experimental paradigms. The first line of research focuses on the strategic function of ambivalent attitudes. The second line of research focused on the perception of people expressing ambivalent attitudes.

In the final part of the dissertation, we first summarize the results and discuss their relative contribution to the literature of attitudinal ambivalence. We then discuss the limits and conclude by outlining the implications of this doctoral work.

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## **2. THEORETICAL PART**

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### 1. Attitudes and ambivalence

In our everyday lives, without even noticing it, we are confronted with the expression of attitudes: media constantly run and publish opinion polls or interviews; adverts or information campaign are set to affect our attitudes (to change them or reinforce them when they are already in line with the targeted attitude object), and to further affect our behaviors (buying behaviors or voting intentions for instance). Also, our conversations often involve likes and dislikes or justifications of decisions we made.

The concept of attitudes has always been considered central to Social Psychology (McGuire, 1985); for instance, Thomas and Znaniecki defined Social Psychology as "the study of attitudes" (Thomas & Znaniecki, 1918; cited in Fazio & Olson, 2003b) and Allport (1954) considered attitudes as "probably the most distinctive and indispensable concept in contemporary American social psychology" (p. 43). Research on attitudes has become really influential across time (more than 180 000 articles on attitudes were referenced on PsycINFO in 2005 for instance, see Albarracín, Johnson, & Zanna, 2005). Before going into details and speak about attitudinal ambivalence, we will briefly summarize the major steps of the research on attitudes, whose history began in the 30's with Thurstone (1928) and Likert (1932).

#### 1.1 A short historical introduction to research on attitudes

Researchers were seeking for a way to assess individuals' attitude when Thurstone devised the first attitude measure. Measures of attitudes were necessary for political reasons (e.g. how a political candidate is likely to be perceived by the population? For which candidate are they more likely to vote for?), as well as for the anticipation of economic behaviors (e.g. how likely an individual is to buy a certain sort of car). In his famous article "Attitudes can be measured" in 1928, Thurstone considered attitudes as the "*the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic*" (p. 529) and proposed to assess attitudes using several dimensions associated with an attitude object. He illustrated this idea by developing further on the same page that "*a man's attitude about pacifism means here all that he feels and thinks about peace and war*". This method first required individuals to write out their opinions on the issue in question to make a list of statements. The list was further edited to range from a hundred to a hundred and fifty statements and, after a second editing, from eighty to a hundred. These were then classified into eleven piles; a scale value was assigned to each pile to further generate a scale from 1 to 11. Finally, after the exclusion of irrelevant and

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ambiguous criteria, twenty to thirty statements were kept in the scale used for the attitude assessment. Individuals were then asked to report a minus if they disagree with a statement and a plus if they agree with it. Their attitude was obtained by averaging the value of all the statements they endorsed.

However, this measure was rapidly criticized. Indeed, because of the required numerous steps, scholars considered it as tedious, complex and time consuming (Likert, 1932; Likert, Roslow, & Murphy, 1934). To cope with this, Likert devised another type of scale (now commonly known as the "Likert scales"). The original one was a 5-point scale. As in Thurstone's scale, participants had to put either a plus (+) if they agreed with a statement or a minus (-) if they disagreed with a statement. The signs were circled in case of a strong agreement or disagreement. The fifth point was a question mark (?). Participants circled it to either indicate that they "neither disagreed nor agreed" with the statement to evaluate (Likert, 1932) or to report their indecision (Likert et al., 1934). For convenience, the signs were arbitrarily changed to numbers, thus constituting a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The score on all the statements were averaged, and the mean constituted the individuals' attitude.

The development of these scales made the first national opinion polls possible: George Gallup ran the first "Gallup poll" in 1934 to assess voting intentions for the American presidential elections (a poll that revealed the preference of the voters for Franklin Delano Roosevelt). Numerous scales were further proposed and directed towards different attitude objects (attitude toward feminism by Kirkpatrick, 1936, or children's attitude toward their parents by Stagner & Drought, 1935 for instance). It also led to the first studies that aimed at predicting a further behavior. LaPiere (1934) ran his well-known experiment about the attitudes of the owners of hotels and restaurants towards Chinese people and their further observed welcoming behavior of a couple of Chinese customers. Corey (1937) assessed pupils' attitude towards cheating and observed their behavior by making them correcting their own tests themselves. Both studies concluded that attitudes did not accurately predict behaviors. Indeed, LaPiere observed that owners declared that they would not accept any Chinese customers (to the amazingly high rejection rate of 91% of restaurants owners and 92% of hotels owners) whereas only one (out of 251) did indeed refuse to serve the Chinese couple when they were physically present. Corey observed that the only thing that predicted cheating was the amount of preparation for the exam or, in other terms, the less students were prepared for the exam and the more likely they would cheat. Attitudes did not reliably yield to further behaviors.

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Despite the raise of numerous studies on attitudes, its measurement was again questioned for three reasons. First, Allport (1935) criticized the simplification of the attitude concept in its assessment. The original definition of Thurstone (1928) considered attitude as being multi-dimensional whereas Likert scales only assessed one dimension. Corey (1937) raised a similar point. As he was discussing the absence of relationship between attitudes toward cheating and the fact of cheating, he recognized that the available scales were quite easy to use but was concerned about the fact that they could be almost too neat. Corey indeed questioned the implications of such type of studies if they fail to observe the expected relationship between attitudes and behaviors. Consequently, scholars began to implement several components in the attitude measurement. An illustration of this can be found in Smith (1947), where he assessed both the cognitive component (i.e. what an individual thinks about an attitude object) and the affective component (i.e. how an individual feels about an attitude object) associated with an attitude object to better capture the attitude towards complex topics. Such approach was further taken up in the well-known "tripartite model of attitudes" (Rosenberg & Hovland, 1960), also labeled as the "multicomponent model of attitudes" (Eagly & Chaiken, 1993). This model includes the cognitive and the affective component associated with an attitude object, as well as a conative component (i.e. an intention). A study of Breckler (1984) ran on participants in front of a snake nicely illustrated the difference between these three components. The affective component was assessed both verbally (via checklist measures of mood, both positive and negative) and non-verbally (by recording the heart rate); an item that assessed the conative component consisted for instance of asking the distance to which the participant would be willing to approach the snake. The cognitive component was obtained by filling items such as ratings of snakes for instance. Breckler (1984) observed that the tripartite model of attitudes was more satisfactory than a single component model of attitudes and furthermore, he found that the three attitude components were only moderately correlated ( $.38 < r < .71$ ).

Second, Likert scales required individuals to evaluate specific statements to report their attitude toward an attitude object ("I think euthanasia should be made legal", for instance). A consequence of this method is that, due to the specific wording of the statements, it does not allow to compare attitudes across different attitude objects. Indeed, a score of 3.6 toward euthanasia does not necessarily indicate that people hold a less positive attitude than when they obtain a score of 4.2 toward another attitude object (Maio & Haddock, 2010). It was consequently necessary to use a more neutral material, a material that would remain constant for all attitude objects and that would therefore allow the comparison of attitudes as a

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function of the attitude object. Osgood, Suci and Tannenbaum (1957) proposed to use the "semantic differential" measure for this purpose. Such measure displays a set of bipolar adjectives among a continuum (bad-good or cold-warm for instance). The answers on each set are then averaged; the mean represents the individual's attitude. However, even if Osgood's measure has been widely used in social sciences, this method did not offer a solution for the third problem associated with the available attitude measures of the 60's: the mid-point of attitude measures.

### **1.2 The mid-point of the attitude measures: introducing the concept of attitudinal ambivalence.**

"Public opinions are infused with conflicting beliefs and feelings, in other words, political opinions are frequently ambivalent" (Basinger & Lavine, 2005, p. 171).

Scholars noticed quite rapidly that the meaning of the mid-point of the scales was ambiguous. For instance, this zone was considered as sometimes indicating indifference, sometimes neutrality (Thurstone, 1928; Thurstone & Chave, 1929) and sometimes indecision (Likert, 1932; Likert et al., 1935). The first to directly raise this point was Edwards (1946). Edwards reported that three meanings could be associated with this central point: neutrality, indifference and ambivalence. In fact, it seems to capture indifference, uncertainty and ambivalence (Klopper & Madden, 1980; Martinez, Craig, & Kane, 2005). Indifference refers to the fact that an individual does neither hold a positive attitude nor a negative attitude. Uncertainty refers to an individual who cannot hold a reliable attitude due to a lack of knowledge towards the attitude object. Attitudinal ambivalence refers to "*the extent to which one's reactions to an attitude object are evaluatively mixed in that both positive (favorable) and negative (unfavorable) elements are included*" (Wegener, Downing, Krosnick, & Petty, 1995, p. 460) and implies the "*simultaneous existence of positive and negative evaluations of an attitude object*" (Conner & Sparks, 2002, p. 39). Klopper and Madden (1980), who directly investigated the polysemy of the meaning in the mid-point answer, observed that the central point was used to report ambivalence most of the time.

Thus, individuals usually circle the mid-point answer because they cannot report that they both possess a positive attitude and a negative attitude towards a same attitude object. Indeed, all the devised attitude scales (e.g. Likert's, Thurstone's and Osgood's) are bipolar and consequently opposing positive poles to negative poles along a continuum. On such scales,

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ambivalence can only be reported through the use of the central point of the scale. This reasoning can be found in Scott (1968) where, speaking about how the neutrality of the attitudes was apprehended, he wondered: "*Are they midway between positive and negative attitudes? Should they be subdivided into indifferent and ambivalent attitudes? (...) The conception of favorable and unfavorable as "opposites" implies that persons will not be found with attitudes simultaneously at both ends of the dimension. (...) it is only by convention that the direction of an attitude is conceptualized as a single bipolar attribute*" (Scott, 1968, pp. 206).

Kaplan (1972) took up this reasoning when he devised the single-adjective scales (more commonly called "split semantic differential scales", see Conner & Sparks, 2002 for instance). He proposed to use two single-adjective scales instead of a bipolar continuum. These scales are obtained by splitting the Osgood's differential scales at the neutral point. Hence, this method requires individuals to evaluate how positive their evaluation of an attitude object is from 0 (*not at all positive*) to 3 (*extremely positive*) while ignoring its associated negative aspects. They are then asked to do the same with the negativity with a scale ranging from 0 (*not at all negative*) to 3 (*extremely negative*), ignoring the associated positive aspects. The separation of the poles allows the report of four different attitudes. It first allows the report of univalent positive attitudes. Individuals can for instance circle one (or above) on the positive scale and zero on the negative scale. It also allows the report of univalent negative attitudes as individuals can conversely circle one (or above) on the negative scale and zero on the positive scale. Indifference (neutral attitudes) can be reported by circling zero on both scales. Finally, by circling one (or above) on both scales, one can report an ambivalent attitude.

This method inspired a few researches that aimed at validating the occurrence of ambivalence toward different attitude objects. For instance, Costello, Rice, and Schoenfeld (1974) focused on alcohol and asked their alcoholic respondents to fill split-differential scales that questioned either a slide that presented a drinking scene or a neutral scene (e.g. a pastoral scene). Hence, their participants indicated the extent to which they evaluated the scene as being appetizing or repulsive or as being good or bad for instance. Participants displayed more ambivalence when responding to slides that presented a drinking content in comparison to the pastoral one. The presentation of a drinking scene thus yielded ambivalence. Gutman and McConaughy (1978) were concerned about the attitude toward television programs (such as toward the "little house in the prairie" for instance). They asked their participants to fill two split-differential scales and computed the "net affect" (i.e. the sum of the positive attitude;

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coded from 0 to +3; with the negative attitude; coded from -3 to 0) as well as their ambivalence (computed as the total affect minus the polarization; that is the absolute value of the sum). They observed that about 42% of the sample displayed some amount of ambivalence. Furthermore, they reported that, contrarily with what people would have concluded before Kaplan, 92% of the participants who had a net affect equal to zero were ambivalent and not indifferent. Thus, this research supports the fact that indifference and ambivalence are different as well as supporting that television programs are likely to elicit ambivalence.

The measure devised by Kaplan also led to the first studies that investigated the consequences of ambivalence. For instance, Katz, Glass, Lucido and Farber (1977) investigated if ambivalence toward physically handicapped victims could be associated with their denigration. Their protocol required an experimenter (i.e. the real participant) and a confederate who have to communicate through ESP (ExtraSensory Perception). Four colored bulbs were displayed in front of the experimenter who had to think about a specific color. The confederate had to concentrate and to press a button that corresponded to the color he "felt". The experimenter was told to punish each error by sending a loud sound to the confederate. The confederate made fifteen mistakes out of the twenty trials. Two experimental conditions were set: the loud sound was either presented as being a punishing painful noise (the "loud noise" condition) whereas the same sound was introduced as being a mild tone in the other condition (the "mild tone" condition). In order to study the denigration of the handicapped victims, the confederate was either arriving at the laboratory in a wheelchair, in an experimental condition, or not, in a control condition. The confederate was evaluated on a 20-item personality scale both before and after the completion of the ESP task. In line with their hypotheses, Katz et al. (1977) found that highly ambivalent participants evaluated the handicapped confederate more negatively after the ESP task in comparison with the non-handicapped one, but only in the "loud noise condition". For the authors, this result sustains their hypothesis according to which ambivalent individuals tend to denigrate physically handicapped individuals more importantly than univalent individuals. Before going into more details about research on ambivalence and discussing its strengths and weaknesses, it is important to present the different methods developed to assess attitudinal ambivalence first.

### 1.3 Measuring ambivalence

Overall, there are three ways to measure ambivalence. As we will see, these measures lead to qualitatively different types of ambivalence. The most recent one has been devised to

assess **implicit ambivalence**, the two others to determine **potential ambivalence** and **felt ambivalence**.

### *1.3.1 Implicit ambivalence*

Petty and colleagues proposed the idea of "implicit ambivalence" in their Meta-Cognitive Model (MCM, see Petty, Tormala, Briñol, & Jarvis, 2006; Petty & Briñol, 2009; for a recent review, see Petty, Briñol, & Johnson, 2012). They reasoned that our attitudes could change across time, although such change in attitudes would not erase our previous attitudes: prior associations between the attitude object and its evaluation will remain in our minds. For instance, one may have liked a band when young (and thus associating it with fun or with specific friends, for instance), but no longer now. Consequently, the evocation of the band is likely to generate ambivalence because of one's former positive attitude and current negative one. In this type of approach, attitude is inferred from response times with a simple principle: the faster the association, the stronger the attitude. Indeed, Fazio (1995), who conceived attitudes as representations in memory, proposed that response times would indicate the extent to which an attitude would be accessible in people's mind. Response time is here considered as an indicator of attitude strength (Bassili, 1996). A strong attitude should be automatically activated in the presence of the attitude object and thus it should lead to short response time when people have to report their attitude. As a consequence, people who hold a strong univalent positive attitude towards an issue should associate the positive aspects of the issue faster than people who hold a weaker positive attitude.

This approach is used in the implicit measures of attitudes such as the Implicit Associative Task for instance (IAT; Greenwald, McGhee & Schwartz, 1998). However, ambivalent individuals hold both attitudes in their mind as they associate the attitude object with a positive attitude as well as a negative attitude. As a result, the positive and the negative aspects should be associated equally fast. Such associations were experimentally illustrated by de Liver, van der Pligt and Wigboldus (2007). In their study two, these researchers displayed attitude objects to their participants who were asked to associate them with positivity or negativity. Participants had to evaluate each attitude object after being either positively, negatively or not primed (i.e. being confronted to a neutral prime). They observed that positive attitude objects were more rapidly evaluated as being positive after a positive prime in comparison with a negative or a neutral one (i.e. a facilitation effect). Of interest, de Liver et al. (2007) found that attitude objects that are more likely to arouse ambivalence (such as "alcohol") were equally associated to positive and negative primes. This effect was neither

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observed on attitude objects that are likely to lead to univalent positive attitudes (such as "love") nor on objects susceptible to activate univalent negative attitudes (such as "war"). Implicit ambivalence can thus be inferred through this mean.

We decided not to include this type of measure in our experimental studies, for two reasons. First, this type of measure is still not widely used, probably because it requires both specific softwares (as the use of Inquisit for example) and materials (e.g. target words). Second, and more importantly, as we will see, our research is concerned with the strategic expression of ambivalent attitudes (first line of research) and the perception of ambivalent attitudes (second line of research). As implicit attitudes have been formerly devised to be less affected by social desirability (Fazio & Olson, 2003a), they were not as fit as more classic measures of attitudinal ambivalence for the purpose of our research. Thus, we have focused on the two other types of measure of attitudinal ambivalence, namely on potential ambivalence and felt ambivalence.

### ***1.3.2 Potential ambivalence***

This term refers to the fact that people hold conflicting evaluations in their mind, conflicting evaluations that could *potentially* lead in turn to ambivalence (Newby-Clark, McGregor, & Zanna, 2002). Potential ambivalence is assessed via "formula-based measures"; in other term, participants do not directly report their ambivalence. Rather, they simply report their degree of positivity as well as their degree of negativity towards an attitude object. A score of ambivalence is obtained through a formula that aggregates the positive and the negative poles.

The measure devised by Kaplan (1972) is the first of the "formula-based" measures. As previously explained, participants had first to fill a scale to report the extent to which they associate an attitude object to positivity on a scale from 0 (*not at all positive*) to 3 (*extremely positive*) and then to do the same on negativity on a scale from 0 (*not at all negative*) to -3 (*extremely negative*). Kaplan proposed to use these two scores to compute ambivalence. Ambivalence was the result of the difference between the total affect (the sum of positive component and the absolute value of the negative component) and the polarization (the sum of the positive and negative components):

$$\text{Ambivalence} = (\text{Pos} + |\text{Neg}|) - (\text{Pos} + \text{Neg})$$

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This formula leads to a scale ranging from 0 (*no ambivalence*) to 6 (*extreme ambivalence*). Indeed, people who hold a strong positive attitude will circle 3 on the positive attitude scale and 0 on the negative attitude scale. Thus, their score of ambivalence will be equal to:  $Ambivalence = (3 + |0|) - (3+0) = 3 - 3 = 0$ . Conversely, people who hold an extreme ambivalent attitude will circle 3 on the positive attitude scale and -3 on the negative attitude scale. Their score of ambivalence will thus be equal to:  $Ambivalence = (3 + |-3|) - (3-3) = 6 - 0 = 6$ .

This formula has been criticized mainly because it aggregates the positive attitude and the negative attitude in a single indicator whereas both are theoretically independent (see Ullrich, Shermelleh-Engel & Böttcher, 2008; or Locke & Braun, 2009, for recent discussion of these aspects). Several other formulas have been proposed for this purpose in response (see Breckler, 1994; Priester & Petty, 1996; or Riketta, 2000, for a review and a critique of the formulas). Despite these complex considerations, the most commonly used remains the so-called "Griffin formula" (Thompson et al., 1995) in which:

$$Ambivalence = \frac{|\underline{Pos + Neg}| - |Pos - Neg|}{2}$$

In this formula, the level of ambivalence increases when both the degree of positivity and the degree of negativity increase (the first part of the equation). The level of ambivalence also decreases as the difference between both poles increases (the second part of the equation). If both a negative and a positive attitude is a pre-requisite of ambivalent attitudes, it is often suggested that both components have to be equally strong (Hass, Katz, Rizzo, Bailey, & Eisenstadt, 1991; Thompson et al., 1995). This formula accounts for these two points, as a high level of ambivalence can be obtained by endorsing both a strong positive and a strong negative attitude, and ideally equally strong. The score of ambivalence ranges from -0.5 (*no ambivalence*) to 4 (*extreme ambivalence*). Indeed, people who hold a univalent strong positive attitude will circle 4 on the positive attitude scale and 1 on the negative attitude scale. Thus, their score of ambivalence will be -0.5:  $Ambivalence = |4 + 1| / 2 - |4 - 1| = 2.5 - 3 = -0.5$ . Conversely, people who hold a strong ambivalent attitude will circle 4 on the positive scale and 4 on the negative scale. Their score of ambivalence will be 4:  $Ambivalence = |4 + 4| / 2 - |4 - 4| = 4 - 0 = 4$ .

Another way to measure ambivalence is to use an open-ended measure (Bell, Esses, & Maio, 1996). This open-ended measure has been devised in order to obtain spontaneous

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answers (participants list the adjectives they associate with a specific attitude object without any other instructions), as well as to obtain less biased answers. Indeed, by asking participants to evaluate the positive component of an attitude object *while ignoring its negative component* (and conversely for the evaluation of the negative component), Kaplan's procedure may lead them to artificially display more ambivalent attitudes. By allowing participants to list whatever they want, the suggestion bias can be neutralized (Refling, Calnan, Fabrigar, MacDonald, Johnson & Smith, 2013). Open-ended measures require two steps. First, the participants are asked to list the adjectives that they associate with a specific topic (e.g. Genetically Modified Organisms), up to a maximum of 10. In a second step, the participants are asked to evaluate each listed adjectives with a scale ranging from -3 (*extremely negative*) to +3 (*extremely positive*). As for Kaplan's measure, these scores will be averaged in a positive and a negative score. The level of ambivalence, however, is obtained after computing these two scores following this formula:

$$\text{Ambivalence} = \text{Pos} + |\text{Neg}| - 2 | \text{Pos} - \text{Neg} | + k.$$

k is a constant added to preclude negative ambivalence scores (if the maximum number of listed adjectives is 10, k will be equal to 30). Again, the level of ambivalence increases with both the increase of positivity and negativity (the first part of the formula) and decreases with the increase of the difference between the two poles. The score of ambivalence ranges from 0 (*extremely univalent*) to 90 (*extremely ambivalent*) on this measure (see Bell et al., 1996).

Both the split semantic differential scales and the open-ended measures lead to the assessment of potential ambivalence (Conner & Sparks, 2002; Conner & Armitage, 2008). However, ambivalence can also be measured directly through self-report measures; this is commonly referred to as felt ambivalence.

### ***1.3.3 Felt ambivalence***

Self-report measures aim at assessing ambivalence as it is experienced. Individuals are consequently asked to self-report the extent to which they feel ambivalent toward an issue by answering a set of Likert scales. The most used set of questions is Priester and Petty's (1996). In their article, felt ambivalence was measured by asking participants to indicate to what extent they felt conflicted, hesitant and holding mixed feelings toward a certain attitude object, on a 7-point Likert scale that ranged from 1 (*not at all*) to 7 (*extremely*). The score of ambivalence is obtained by averaging the score on these three items. Even if such measure

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has never been formally validated through a standard procedure (as was the open-ended measure or Kaplan's one for instance), it is the most widely used to assess felt ambivalence (e.g. Clark, Wegener, & Fabrigar, 2008; DeMarree, Morrison, Wheeler, & Petty, 2011). It is important to note however that several other authors pursued a similar approach. For instance, in their Bivariate Evaluations and Ambivalence Measures (BEAMs), Cacioppo, Gardner, & Berntson (1997) generated a unipolar ambivalence scale with 9 items. This scale includes six items that are directly associated with contradictory information (*muddled, divided, tense, contradictory, jumbled and conflicted*) and three reversed that are associated to consistent information (*consistent, uniform and harmonious*). Jamieson (1988; cited in Thompson et al., 1995) did quite the same by using 10 items (e.g. "I'm confused about (euthanasia) because I have strong thoughts about it and I can't make up my mind one way or another").

### ***1.3.4 Relationship between potential ambivalence and felt ambivalence***

Felt ambivalence and potential ambivalence are supposedly assessing different qualitative aspects of ambivalence. Potential ambivalence is theoretically conceived of as an indicator of the *potential conflicting associations* towards an attitude object, whereas felt ambivalence concerns the extent to which people feel *conflicted* or *torn* regarding an issue. Felt ambivalence thus requires people's reflection and awareness to be assessed. It has consequently been discussed as being a "meta-psychological measure" (Holbrook & Krosnick, 2005). Potential ambivalence assesses ambivalence in a more traditional way. Indeed, as it was the case for attitudes that have been defined as associations in memory between an attitude object and a stimulus (see Fazio, 1995), the measure of potential ambivalence requires people to list their associations with the attitude object in question. It does not require any evaluation of the associations in the first place. In that, potential ambivalence has sometimes been referred to as an objective measure whereas felt ambivalence was identified as a subjective one (Priester & Petty, 1996).

Even if these two measures are different constructs that saturate on different latent factors in a confirmatory factor analysis (Holbrook & Krosnick, 2005), felt ambivalence is sometimes considered as being the consequence of potential ambivalence or at least to arise from it. Indeed, individuals cannot feel ambivalent if their attitude does not contain both a positive and a negative component (Newby-Clark et al., 2002). The relation between these two measures is generally moderately strong and oscillates between  $r = .21$  and  $r = .40$  (Thompson et al., 1995; Priester & Petty, 1996). It is important to note that specific contexts

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have been highlighted as potentially increasing or decreasing the relationship between these two components. In a study on the stages of change about fat diet, Armitage and Arden (2007) reported for instance that only a low correlation was found between felt and potential ambivalence when people are thinking about changing their behavior to a healthier one. For instance, in pre-contemplation (a stage when people ignore that their behavior could possibly lead to unhealthy consequences), the observed correlation was of  $r = .12$ . Even when people are ready to change (i.e. in the stage of preparation), the association between both measures remains quite low ( $r = .17$ ). However, it becomes way stronger when people are actually changing it ( $r = .63$ ) and stays quite high in the stage of maintenance ( $r = .43$ ). Thus, it is really when a change of behavior is happening that all the conflicting evaluations in people's mind become salient and thereby more likely to produce felt ambivalence. Newby-Clark et al. (2002) also highlighted this salience effect. In their experiments, two conditions were set. Participants were either asked to report their felt and potential ambivalence as usual (low accessibility condition) or to report their potential ambivalence and then to copy their answers twice, on two different booklets before reporting their felt ambivalence (high accessibility condition). This was introduced to the participant as a way of giving an access of their answers to the other experimenters. A stronger relation was found between felt and high ambivalence in the high accessibility condition in comparison with the low accessibility condition (although these authors did not report the exact  $r$  values).

### **Concluding comments**

So, ambivalence can be assessed in two main ways. It can either be assessed by directly asking people to evaluate the extent to which they feel ambivalent toward an issue (the felt ambivalence). It can also be assessed indirectly by either asking people to fill two split-Likert scales or via an open-ended measure. The level of potential ambivalence is obtained after computation. Even if these two measures differ qualitatively, the Holy Grail of **the** measure of ambivalence is yet to be found. Indeed, there is no consensus on which measure is better than the other (Conner & Armitage, 2008). Thus, a common practice is to include both measures in a research program or to use one or the other indistinctly. We personally decided to include both measures in our first research line.

### **2. The strengths and weaknesses of ambivalence**

As we will see, the literature on ambivalence has mainly presented this concept in a negative light. In point 2.1, we will refer to studies that discussed ambivalent attitudes as

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weak attitudes, either because they are less likely to lead to further behavior (point 2.1.1) or because they are considered as aversive (point 2.1.2). In point 2.2.1, however, we will argue for the importance of studying the perception of ambivalent attitudes, and why such attitudes could be useful in 2.2.2. The point 2.2.3 will focus on the function of univalent and ambivalent attitudes.

### **2.1 Ambivalent attitudes as weak attitudes**

The strength of an attitude can be inferred from four indicators (Petty & Krosnick, 1995). To be considered as strong, an attitude has to be stable over time (*persistence*), it should bias information processing (*impact on information processing*), it should guide behaviors and intentions in a consistent way (*prediction*) and it has to withstand an attack (*resistance*). This fourth indicator is the most relevant for this dissertation. Thus, we will treat the first three all together (as well as accessibility) and in a second part, we will focus more specifically on ambivalence and resistance.

#### ***2.1.1 Accessibility, persistence, prediction and information processing.***

The four factors of accessibility, persistence, prediction and information processing are intertwined, and for this reason we will present them together. Indeed, it is because people have been associating an attitude object with a specific evaluation (accessibility) for quite a while (persistence) that such attitudes will affect the way people will interpret new information towards it (information processing) and how they will most likely behave in the future (prediction).

#### *Accessibility*

The question of the accessibility of an attitude has been matched with that of its strength in relevant research (Fazio, Chen, McDonel & Sherman, 1982). Indeed, attitudes are conceived as an association in memory between an attitude object and its evaluation, and thus a strong attitude refers to a strong mental association (Petty & Krosnick, 1995). Consequently, it has been discussed that attitude strength can be deduced from reaction times. The reasoning is that the stronger the attitude, the more it will be mentally accessible and the fastest the attitude object will be associated with its consistent evaluation (Fazio, 1995; Greenwald & Banaji, 1995). We mentioned earlier that de Liver et al. (1997) demonstrated that ambivalent objects were as strongly associated with positive words as with negative words. In other terms, they reported that reaction times between the attitude object and the positive words

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were as fast as reaction times between the attitude object and the negative words. Thus, words that are susceptible to cause ambivalence are equally associated to both poles. However, Bargh, Chaiken, Govender and Pratto (1992) reported that the more an attitude object is evaluated as ambivalent and the longer it takes to be evaluated (i.e. ambivalent attitude objects caused higher response times). Ambivalence was therefore highlighted as being less accessible and thus as weaker than a univalent attitude (see also Brömer, 1998).

It is important to mention here that such result has been reinterpreted as originating from integrative processes rather than due to a lower accessibility (see van Harreveld, van der Pligt, de Vries, Wenneker, & Verhue, 2004). Van Harreveld et al. (2004) pointed out that ambivalent individuals had to evaluate and rate incongruent attributes when they report their attitude whereas this is less the case for univalent individuals; univalent individuals have just to rate the extent to which they are either positive or negative toward the issue in question. This was shown by asking the participants to rate the extent to which they considered a list of attributes related to the issue of the experiment as being important for them. They observed that ambivalent individuals identified more components as being important than did their less ambivalent counterparts. Their higher response time was linked to the number of attributes ( $r = .61$  for Experiment 1, for instance). Thus, Bargh et al. (1992) and van Harreveld et al. (2004) both found that reaction times are generally higher for ambivalent attitudes in comparison with more univalent ones. However, they disagree in their interpretation: Bargh et al. (1992) viewed it as an indicator of the weakness of ambivalent attitudes whereas van Harreveld et al. (2004) proposed that it could be due to a more effortful processing of information. The next sections will provide some elements that help understanding how both points of view could be sustained. Indeed, we will discuss attitude certainty and decision-making (i.e. some further indicators of attitude strength; Bassili, 1996), and the increased processing of information that results from ambivalence.

### *Temporal stability*

Because of the duality of their attitude, ambivalent individuals were also described as being less certain (Bassili, 1996; Meffert et al., 2004). If ambivalence leads to higher response times on associative tasks, such slowness was also found on decision-making tasks. Hence, ambivalent individuals were found to need more time to pick their political candidate in comparison with non-ambivalent individuals (Mutz, 2002; Nir, 2005), and to delay more the formation of voting intentions (Lavine, 2001). In line with this, ambivalent attitudes were

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discussed as fluctuating over time (Zaller & Feldman, 1992; Craig et al., 2005), as well as increasing when a deadline is approaching (Jewell, 2003).

Jewell (2003) focused on blood donation in his experiment and set up two experimental groups in a longitudinal design. Regardless of the condition, participants had to fill a questionnaire about their attitude toward blood donation as well as their intention to donate blood. In the first condition (the distant-deadline condition), they were invited to report their attitude and intention to donate blood to a campaign that would take place 26 weeks after (wave 1). They were dismissed and then contacted 6 weeks later to fill the same questionnaire. Hence, they had to report their attitude and intention to donate to a campaign that would take place 20 weeks in the future (wave 2). In the second condition (the imminent-deadline condition), participants were asked to do the same than in the other condition. The only change was that the campaign was no longer taking place 26 weeks (wave 1) or 20 weeks later (wave 2) but it was presented as happening a month later (wave 1) and as taking place a week in the future (wave 2). An increase of ambivalence toward blood donation was found between wave 2 and wave 1 for the participants in the imminent-deadline condition whereas no difference was found for participants in the distant-deadline condition). As the deadline approached, participants in this experimental condition became more ambivalent (e.g. 67.2% of their participants showed an increase in their ambivalence toward blood donation). The correlation between their attitude and their intention to donate also decreased between wave 2 and wave 1 whereas this was not observed for the participants in the distant-deadline condition. In other terms, participants in the imminent-deadline condition reported an increase of their ambivalence as well as a greater fluctuation in their behavioral intentions as the deadline was approaching. This was not found when the deadline was less salient (i.e. in the distant-deadline condition). Thus, as they tend to be less accessible and stable over time, ambivalent attitudes are considered as being weaker in comparison with univalent attitudes.

### *Behavioral prediction*

We mentioned that one of the first reasons why researchers were interested in attitude assessment was to be able to better anticipate individuals' behaviors (see LaPiere, 1936 or Corey, 1937 for instance). The idea was that people should behave in a consistent way with their attitudes. Indeed, holding a positive attitude towards a car, for instance, should logically increase the likelihood that one would buy this car. Because they combine both positive and negative attitudes, ambivalence and its relation with intentions and behaviors have been

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widely investigated (see Armitage & Conner, 2004 for a review). It has been found that, in sum, all but one study reported a negative link between ambivalence and intentions or behaviors. This was found on pro-environmental intentions (Costarelli & Colloca, 2004), dieting intentions (Armitage & Conner, 2000; Conner, Sparks, Povey, James, Shepherd, & Armitage, 2002; Povey, Wellens, & Conner, 2001), drinking alcohol intentions or excessive alcohol use behaviors (Armitage, 2003; Caballero, Carrera, Muñoz, & Sánchez, 2007), chocolate or meat consumption (Sparks, Conner, James, Shepherd, & Povey, 2001; Berndsen & van der Pligt, 2004), physical exercise (Sparks, Harris, & Lockwood, 2004), recycling (Castro, Garrido, Reis, & Menezes, 2009) or using personal protective equipment (Cavazza & Serpe, 2009).

An exception can be found in Jonas et al. (1997) where the authors found a positive link between ambivalence and the intention to buy a fictitious shampoo; such effect has never been replicated. However, they nearly all demonstrated that ambivalence was a negative predictor of intentions and behaviors and in that, ambivalent attitudes was considered as a weaker form of attitudes as opposed to univalent ones.

### *Information processing*

In a study on Chinese immigrants, Maio, Bell and Esses (1996) reported that ambivalent individuals were more affected by a strong positive message about immigration than by a less strong message, whereas non-ambivalent individuals were not differentially affected as a function of the message strength. In other terms, ambivalent individuals processed the strong positive message to a larger extent than the less strong one; this information processing led them holding a more positive attitude afterwards (i.e. a lower ambivalent attitude). The fact that ambivalent individuals were affected by argument quality supports the idea of greater information processing (Petty & Cacioppo, 1986). In their Elaboration Likelihood Model (ELM), Petty and Cacioppo (1986) proposed that a convincing message could change people's attitude as a function of its strength (e.g. the argument quality). It is assumed that people will elaborate some thoughts after reading a strong message and that their attitude's structure will change as a result (they will become more supportive of the issue for instance). Conversely, a weak message is viewed as containing superficial arguments that will lead people to generate little thoughts toward the issue in return (i.e. they will not be convinced). In sum, a message is convincing when it contains a strong argument that will make people think (e.g. process the information thoroughly). Jonas et al. (1997) reported indirect evidence of such greater processing. They indeed observed that ambivalent

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individuals were less confident in their attitude and that this lower confidence led to more cognitive elaboration (e.g. the number of attribute-related thoughts increased). Petty et al. (2006) recently replicated the above results with implicit ambivalence. Their paradigm consists in two steps. They first conditioned their participants to hold a univalent attitude toward a fictitious target (i.e. "Eddie") and then submitted them to either congruent or incongruent information. Thus, they generated implicit ambivalence in participants who have been under contradictory information (Eddie was first presented as positive and then as negative), whereas this was not the case for participants who only received congruent information. After this conditioning procedure, their participants had to read Eddie's qualifications (either strong or weak) and then to evaluate the extent to which they would be willing to hire Eddie. They hypothesized that, as ambivalence leads to greater processing, implicit ambivalence should lead individuals to process the information more thoroughly. As a consequence, it was predicted that participants high in implicit ambivalence should be affected by strong arguments to a greater extent than by weak arguments whereas this was not expected for participants low in implicit ambivalence. Their results supported such hypothesis.

Several other scholars focused more thoroughly on the processing of information of ambivalent individuals to highlight its function. They notably aimed at reporting that the bias in such processing was motivated and done in order to "resolve the ambivalence". Clark et al. (2008) directly investigated the motivational component of the alleged biased processing. In their reasoning, ambivalent individuals are motivated to resolve their ambivalence and thus eager to pick a side. Consequently, they should process information to a larger extent than univalent individuals, but this should only apply to pro-attitudinal information. In other words, ambivalent individuals will resolve their ambivalence by endorsing the perceived "agreeable" point of view. Results confirmed this hypothesis: It was found that ambivalent individuals have been more strongly influenced by pro-attitudinal messages than by anti-attitudinal messages whereas this was not found on less ambivalent individuals. They recently replicated such an effect by observing that ambivalent individuals processed attitude-congruent information to a larger extent (Sawicki, Wegener, Clark, Fabrigar, Smith, & Durso, 2013). However, these researchers extended this result by reporting that it was moderated by knowledge toward the topic. They observed that, when individuals did not feel enough knowledgeable, they processed attitude-congruent to a larger extent than did more knowledgeable ones, as previously observed. They did not find any evidence of greater processing of the information for more erudite individuals. Hence, ambivalence was not

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resolved when individuals felt knowledgeable towards the issue. In other terms, ambivalent individuals who were aware of the issue have not been influenced by the messages of influence. The authors proposed that this lack of effect could be attributed to the fact that erudite individuals may have perceived familiar information as ineffective and thus less likely to be helpful for lowering their level of ambivalence.

A further illustration of the biased information processing in ambivalent individuals can be found in Zhao and Cai (2008). In their paper, they focused on teenagers who entered at college. Prior to entrance, most students held a negative attitude toward smoking. However, college (through peers, ads or magazines) exposed some of them to positive information about smoking and as a result, this conflicting information yielded ambivalence. They observed that in such situations, ambivalent teenagers could focus to a larger extent on the negative aspects of smoking (their prior attitude) in order to fight against their ambivalence. They consequently sought more negative information toward smoking and expressed more negative thoughts in comparison with their non-ambivalent counterparts.

### **Concluding comments**

In this section we reviewed the literature that focused on the accessibility of ambivalent attitudes, on their persistence over time, their link with intentions and behaviors and their impact on information processing in comparison with more univalent ones. Most of the evidence has been discussed as pointing to the weakness of ambivalent attitudes, but this conclusion does not seem warranted. For instance, if most of the studies that revealed the lower accessibility of ambivalent attitudes in comparison with univalent ones interpreted this result as indicating that ambivalent attitudes were weak attitudes (Bargh et al., 1992; Bassili, 1996), an interesting reinterpretation of this effect has been formulated by van Harreveld et al. in 2004. As mentioned above, they proposed that in fact, the lower observed reaction times could be due to an integrative processing instead of a lower accessibility (as a reminder, a lower accessibility sustains that people do not hold a strong attitude). In comparison with univalent individuals, ambivalent ones could simply have to include more elements when they have to report their attitude, and therefore they would need more time to do so. If this is true, longer reaction times would no longer be indicative of a lack of accessibility.

In a similar vein, the greater processing of information by ambivalent individuals has often been seen as indicating that they are eager to resolve their ambivalence (see Bell & Esses, 2002, for instance). However, results only indirectly support this hypothesis. Indeed, it looks like ambivalent individuals are not simply desirous to disprove their ambivalence as it

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was postulated: Both Clark et al. (2008) and Sawicki et al. (2013), found that ambivalent individuals were only affected by “pro-attitudinal information”. Thus, they are concerned about the valence of the message when they decide to side with it. This implies that ambivalent individuals do not resolve their ambivalence by any means or otherwise a counter-attitudinal information would have similarly influenced them. Furthermore, the biased processing of information was not replicated on ambivalent individuals who felt knowledgeable towards the issue. Therefore, ambivalent attitudes do not automatically lead to greater processing of information, but rather individuals are affected by messages that are positively perceived (i.e. attitude-congruent information, Sawicki et al., 2013), and only when they feel not enough competent on an issue. Thus, as ambivalent individuals purposely decide what affects them or not, they could be strategic when they side with an influence message. This point will be detailed in the next part.

### ***2.1.2 Discomfort and influence***

#### *Ambivalence and cognitive dissonance*

Ambivalent individuals were presumed to be negatively experiencing their ambivalence (i.e. to feel discomfort) and as a consequence, they should be striving to resolve it (by picking a side). Such reasoning parallels the theory of Cognitive Dissonance (Festinger, 1957; Festinger & Carlsmith, 1959). Two elements are dissonant when they do not fit well together; in other terms, "*X and Y are dissonant if not-X follows from Y*" (Festinger, 1957, p.13). A famous illustration of dissonance is the "man-standing-in-the-rain" example: "*if a person were standing in the rain and yet could see no evidence that he was getting wet, these two cognitions would be dissonant with one another because he knows from experience that getting wet follows from being out in the rain*" (p. 14). The consequence of dissonance and more generally, of internal inconsistencies, is that they are experienced as unpleasant (Zanna & Cooper, 1974). As ambivalence stems from holding conflicting attitudes, it is assumed to be unpleasant for similar reasons than cognitive dissonance (McGregor, Newby-Clark & Zanna, 1999; Newby-Clark et al., 2002).

Hass, Katz, Rizzo, Bailey and Moore (1992) were the first to report results that support the positive relation between ambivalence and negative feelings. In a first phase, all participants had to run a “subliminal test”. In fact, this test was a disguised mood measure in which participants rapidly saw a word on a screen and then were asked to indicate which word it was. Four choices were offered each time, and 20 stimuli were presented. For instance, participants saw the word “LOWN” (non-sense word) and were then asked to

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indicate if the word they saw was DAWN, DOWN, GOWN or TOWN. Words were pretested as being indicative of a positive or a negative mood. Then, participants were randomly attributed to one of two experimental conditions. The salience of their attitude towards Black was manipulated in one condition. Participants had to fill the Pro-Black Anti-Black questionnaire (PAAQ; Katz & Hass, 1988) and then to hear a tape about a recent racial episode. They computed an ambivalent score from the PAAQ score that was set as the product of the score on the pro scale by the score on the anti scale. The other condition was a control one where participants had to fill the Survey on Personal values where no items questioned their attitude towards Blacks. For instance, they were asked to indicate the extent to which they thought that the food we eat affects our health. Then both groups were invited to do the “subliminal task” again. This served as a post-manipulation indicator. Their results indicated that the racial manipulation did raise the amount of negative emotions. Furthermore, they found an interaction between racial ambivalent attitudes and the experimental conditions. Simple effects test revealed that the more the attitudes were ambivalent and the more the reported emotions were negative in the condition that made racial attitudes salient. No significant effect was found between ambivalence and negative mood in the control condition. Thus, racial ambivalence was related to negative mood but only when such attitudes were made salient. These authors interpreted this effect as indicating that when people are aware of their ambivalence (i.e. when ambivalence is salient), this would threaten them. For instance, incongruences should lower their self-esteem and raise their anxiety and, as a consequence, this should arouse psychological discomfort.

A study by Nordgren, van Harreveld, & van der Pligt (2006) made ambivalence salient (through a text that included both positive and negative environmental consequences of genetically modified food) and then set up two experimental conditions. In both conditions, participants had to take a pill that was presented as either leading to a tense state or as a calm state. Nordgren et al. (2006) then assessed the emotions of their participants by using the Positive and Negative affect Schedule (PANAS; Tellegen, Watson, & Clark, 1999). Participants had to report for instance the extent to which they felt angry or anxious. Their results support the hypothesis according to which ambivalence leads to discomfort as they observed more negative thoughts as well as more negative emotions for their participants who could not attribute their discomfort to the pill. In other terms, more negative emotions were found when individuals took the relaxing pill. To test the hypothesis according to which ambivalence should lead to discomfort, Maio, Greenland, Bernard and Esses (2001) focused on skin conductance (i.e. arousal); arousal has indeed been highlighted as a good indicator of

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discomfort (see Cresi, Castagno, Storm, Silvestro, Miniero, & Savino, 2012). Their hypothesis was that, as ambivalence should be an aversive state, ambivalent individuals should be more aroused. Contrary to their expectations, they found that ambivalence led to less arousal. This result was never replicated. These studies and the lack of consensus in their results lead to the question of when ambivalence is supposedly experienced as unpleasant. Of course, ambivalence cannot always be disagreeable (van Harreveld, van der Pligt & de Liver, 2009a). For instance, an ambivalent smoker does not always feel at pain when he lights a cigarette. van Harreveld et al. (2009a) devised the MAID model to tackle this issue (MAID stands for “Manipulating Ambivalence Induce Discomfort”). In this model, ambivalence is considered as leading to discomfort when individuals have to make a decision. The fact of being forced to arrive at conclusion is what leads to regret anticipation, uncertainty and discomfort. Results of van Harreveld, Rutjens, Rotteveel, Nordgren and van der Pligt (2009b) supported this reasoning. They observed in two studies that compared to a control and a no choice condition, a choice condition yielded a significant raise in the skin conductance level (i.e. arousal). Thus, picking a side seems to be what creates discomfort for the ambivalent individual.

The parallel between cognitive dissonance and attitudinal ambivalence has also been made regarding its resolution. In their classical experiment, Festinger and Carlsmith (1959) invited their participants to perform two tedious tasks during half an hour each (for instance in one of the task, participants were in front of a square that contained 48 square pegs. The task was to turn each peg, one by one, a quarter turn clockwise during half an hour). Two conditions were then set. Participants were invited to explain the tasks to the next participant with a specific requirement: they had to present the upcoming tasks as being interesting. In other terms, participants had to lie to the next participant by positively presenting boring and tedious tasks. They were simply asked to offer this service: experimenters told them that it was possible for them to refuse but accepting would represent a nice help (such procedure is called the “forced compliance”). All but one accepted. Depending on the experimental condition, participants were either paid 1\$ or 20\$ for this service. After the presentation of the task, participants were asked to indicate how they perceived the task (for instance, they had to rate the extent to which they found the task as being interesting and of scientific importance). Results indicated that participants that were paid 1\$ tended to find the tasks as both more interesting and more scientific than participants that had been paid 20\$. The reasoning of Festinger and Carlsmith (1959) is that lying to the participant created a state of dissonance. Indeed, the participants went against their value as they positively presented a task that was

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objectively annoying. The theory of cognitive dissonance states that dissonance generates discomfort and as consequence, one has to act in order to revert to a more comfortable state. One of the ways to do so is to re-evaluate the attitude toward the task in order to establish some correspondence with what people has done or said (Festinger, 1957; see Abelson, 1959 for other resolution possibilities). Thus, participants who were paid 1\$ evaluated the task less negatively in order to feel better about what they have said. This reasoning was not necessary for the participants in the 20\$ condition: they could attribute their behavior to the fact that they were paid for that and hence, did not have to re-evaluate their perception of the task.

Some researchers relied on this mechanism to explain why ambivalent attitudes were more sensitive to influence than more univalent ones (Hodson, Maio & Bell, 2001; Bell & Esses, 2002). For them, individuals engage in greater information processing in order to arrive at conclusion and hence, to "resolve their ambivalence". However, even if they are often brought together, attitudinal ambivalence and cognitive dissonance differ on an important point (van Harreveld et al., 2009a, 2009b). Attitudinal ambivalence is considered as mainly pre-decisional whereas dissonance happens after a decision or a behavior has been made or evoked. Furthermore, the causes of discomfort also seem to differ: it is the fact of deciding and picking a side that is conceived as leading ambivalent individuals to discomfort, whereas it is mainly driven by guilt for cognitive dissonance situations (see Kenworthy, Miller, Collins, Read, & Earleywine, 2011). Indeed, even if the causes of dissonance have been debated (see Clémence, 1991), it has been pointed out that people can be in a state of dissonance when they act against their values (as in Festinger & Carlsmith, 1957, for instance). This behavior can lead them to feeling guilty (and hence, unease) in return.

We mentioned that a way to cope with cognitive dissonance is to re-interpret what has been done or said and hence, that they can reduce their feeling of dissonance by changing their attitude toward a stimulus (Elliot & Devine, 1994). Consequently, several researchers aimed at investigating if such attitude change could also be observed on ambivalent individuals. Indeed, if ambivalence is similar to dissonance and if dissonance can be reduced through attitude change, ambivalent individuals should also shift their attitude in order to feel better.

### *Influence and pliability of attitudes*

Hence, several studies directly focused on the pliability of ambivalent attitudes when being confronted with influence messages. The reasoning was that, as ambivalent attitudes stem from inconsistencies and conflicting information, they should be weakly anchored in

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comparison with a strong attitude that is embedded in a "knowledge structure" (Armitage & Conner, 2000). As a consequence, they should be more pliable than less ambivalent ones (the term "pliable" has been used to refer to the fact that an attitude changes as a consequence of a situation of influence). This effect has been found several times. For instance, in their study 2, Armitage and Conner (2000) submitted their participants to a message of influence. As a function of the experimental conditions, the message was either a basic message of influence (that presented the sources of fat in the diet for instance; their control condition) or a message that challenged their beliefs toward low-fat food diet (by saying that low-fat food is not tasteless for example). They observed that ambivalent individuals held a significantly more positive attitude after being submitted to the challenging message of influence than they did before. This was not observed in non-ambivalent individuals. Hence, ambivalent individuals have been significantly more affected by a strong message of influence than non-ambivalent individuals and consequently sided with it. Univalent individuals were not affected. This result supports the hypothesis according to which ambivalent attitudes are more pliable.

In Hodson et al. (2001), the participants had to watch a debate on welfare attitudes and then to state by whom they had been the most convinced (i.e. the pro-welfare debater or the anti-welfare one). Participants had to answer on a booklet where 24 previous answers had been formulated: depending on the experimental condition, most of the answers were either in favor of the pro- or the anti-welfare debater. Results indicated again that ambivalent individuals were more sensitive to consensus information (i.e. to the agreement amongst previous answers) than were less ambivalent individuals. More precisely, it was found that ambivalent participants were influenced in the direction of the consensus information whereas less ambivalent participants changed in the opposite direction. Zemborain & Johar (2007) replicated this effect by observing that ambivalent individuals were more responsive toward interpersonal influence. Thus, these studies convincingly pointed out that ambivalent individuals were affected to a greater extent than univalent individuals in a situation of influence. However, if this effect is quite robust, its function was not directly assessed in the above experiments. Scholars viewed it as indicating that ambivalent attitudes were weaker than less ambivalent ones (Conner & Sparks, 2002) and assumed that change appeared in order to reduce discomfort (Hodson et al., 2001); however, a direct test of this hypothesis was not provided. In order to tackle this issue, Cavazza & Butera (2008) devised two experiments.

In their article, Cavazza and Butera (2008) questioned the pliability of ambivalent attitudes and suggested another interpretation of this manifestation: they proposed that ambivalent individuals could in fact only comply in the face of an influence situation without

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necessarily changing the structure of their attitude. They consequently aimed at comparing the pliability of high-ambivalent individuals in comparison with low-ambivalent individuals in an influence situation by highlighting on the one hand that high-ambivalent individuals could shift their attitude more importantly than low-ambivalent individuals as suggested in the literature as well as showing on the other hand that high-ambivalent individuals could resist in situations where low-ambivalent ones should be affected. They considered the level of influence to test such hypothesis; hence, they assessed attitude change at a direct level (the questioned topic is the one that has been targeted by the influence message; here, traffic reduction as a mean of reducing pollution) as well as attitude change at an indirect level (the questioned topic is linked with the influence message but it has not been directly targeted; here, the interdiction of Diesel oil because of its polluting effects) and submitted their participants to normative conflict. Normative conflict is a situation where people hold an opposite attitude than the attitude held by the ingroup majority (Pérez & Mugny, 1996). So, they hypothesized that high-ambivalent individuals should change accordingly with the influence message at a direct level whereas low-ambivalent individuals were expected to resist for consistency reasons.

They also predicted that the reverse should happen at an indirect level. Low-ambivalent individuals were indeed expected to shift their attitude at a greater extent than high-ambivalent individuals as a result of the normative conflict and its influence on their attitude. Their hypothesis was thus tested via a two-step paradigm. First, the participants' attitude toward traffic restriction was assessed (amongst other filler topics); they generally agreed that traffic reduction could be an efficient mean to reduce pollution in the cities. Then, participants were confronted to the influence message. This message highlighted that the majority of the previous participants declared that traffic was not causing environmental damage in cities; hence, they displayed a message that was counter-attitudinal. Participants' level of ambivalence toward the topic was then assessed (through modified open-ended measures); they also had to report their attitude towards traffic restriction (amongst other filler items, e.g. evaluating the importance of the topic) a second time. The range of the scale was modified to confuse participants; it was a Likert in 21-points instead of the Likert in 7-points used in the first step. Results indicated that high-ambivalent individuals were significantly more affected than low-ambivalent ones at a direct level. Their attitude shifted in agreement with the message of influence whereas less-ambivalent individuals resisted. Though, they complied and sided with the attitude of the majority. However, the opposite was found at an indirect level: low-ambivalent participants did change their attitude in the direction of the

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influence message whereas ambivalent individuals went back to their ambivalent attitudes. In other terms, ambivalent individuals did only superficially shift their attitude, as they reported no latent change. In the authors' words, ambivalent individuals bended but did not break in the face of an influence situation. Furthermore, Study 2 reported that the attitude shifting was stronger for high self-monitors than for low-monitors; self-monitoring refers to the tendency to exert control over the expression of reported attitudes and behaviors (Snyder, 1974). Hence, such effect suggested that attitude shifting could be have been done for self-presentational concerns.

These results are inconsistent with the idea that ambivalent individuals are eager to resolve their ambivalence. Indeed, since the influence message offered a way to cope with the participants' inconsistencies, why didn't they also endorse it when the source of influence was less salient? Instead, this research provides support for the idea according to which ambivalent individuals can be strategic and consequently agree with a message of influence without holding a weak attitude or necessarily feeling discomfort. It seems indeed that instead of being done by people so that they feel better, people could shift in order to conform. This point will be detailed in the next section.

### **Concluding comments**

As we have seen, it is possible to find several articles that linked ambivalence to discomfort, but nevertheless van Harreveld and collaborators recently declared, "*the direct empirical evidence regarding the assumption that ambivalence is unpleasant is inconclusive*" (van Harreveld, Schneider, Nohlen, & van der Pligt, 2012, p. 269). Indeed, research reveals first that such link appears only under very specific conditions, and second that it has only been indirectly observed. Ambivalence has first to be activated or salient in people's mind in order to generate discomfort (Newby-Clark et al., 2002; van Harreveld et al., 2012). This is the reason why it has been activated in most studies; by filling a racial questionnaire and then seeing a controversial video (Hass et al., 1992), through repetition (Newby-Clark et al., 2002) or after the reading of a text that contained both positive and negative aspects toward an issue (Nordgren et al., 2006), for example. The second necessary condition is that ambivalent individuals have to decide to feel discomfort. van Harreveld and collaborators generally use the metaphor of the gun as an illustration of this reflection (see van Harreveld et al., 2009a, 2009b, 2012). For them, holding an attitude is like aiming, in that it is a judgment, and decision-making is like pulling the trigger. They conceive that it is the fact of committing (i.e. pulling the trigger) that generates discomfort (van Harreveld et al., 2009a). Thus, ambivalence

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is not inherently unpleasant: it potentially becomes unpleasant when people are aware of their inconsistencies and have to arrive at conclusion.

At this point, we would like to discuss some methodological aspects that could explain why van Harreveld et al. (2012) made such comment recently. Indeed, there seem to be some methodological issues in most of these studies. For instance, Nordgren et al. (2006) observed, through the use of a misattribution paradigm, that ambivalence leads to a more biased treatment of the information as well as more negative emotions when discomfort could not be explained (the calm condition) in comparison with a condition where there was a plausible external causal factor (a pill, the tense condition). However, this finding needs to be discussed because of two potential problems. First, this research failed to include a control condition (either with no pill or without the lecture of the ambivalent text). The expected discomfort can thus only be deduced from the reported negative emotions in the relaxed condition in comparison with the tense one. As we do not know the baseline, it is difficult to conclude that indeed ambivalence generated discomfort as it is assumed. Furthermore, except for Hass et al. (1992) who found an absence of relation, this research failed to include any positive affects in its experimental paradigm. This too can be problematic, because positive and negative affects have been described as not necessarily co-activated (see Cacioppo & Berntson, 1994; Larsen, McGraw & Cacioppo, 2001). In other terms, a positive affect does not necessarily lead to less negative affects. Thus, one can wonder if, as presumed, ambivalence does only cause more negative affects, or greater arousal and thus potentially both positive and negative affects. For instance, van Harreveld et al. (2009b) reported that more arousal was found for ambivalent individuals when they have to make a decision. However, if arousal seems to be a good indicator of discomfort (see Cresi et al., 2012), Koelsch, Skouras, Fritz, Herrera, Bonhage, Küssner and Jacobs (2013) recently reported that listening to joyful music and fearful music both led to similar arousal ratings. Hence, showing that ambivalence leads to greater arousal does not necessarily indicate people's discomfort. Furthermore, to our knowledge, the only other study that focused on ambivalence and arousal did report the reverse effect: Maio et al. (2001) indeed reported that ambivalence led to less arousal. Hence, more research is required in this area to validate or to refute the hypothesis according to which ambivalence leads to discomfort. In this part, we also reviewed the articles that focused on the pliability of ambivalent attitudes where we discussed, in reference to Cavazza and Butera (2008), that it seems plausible to think that ambivalent individuals could act strategically in a situation of influence. This point will be taken up in the next part.

## **2.2 The function of ambivalent attitudes: Why ambivalent attitudes could be expressed strategically?**

The results of Cavazza and Butera (2008) suggest that ambivalent individuals could comply at a direct level in order to side with a majority influence source, without really changing at a more indirect level. This reflection about the adaptability of ambivalent attitudes led to questioning the reasons why ambivalent individuals would have to change their attitude instead of displaying their ambivalent attitude. Indeed, if they really act strategically, in other terms if they are aware of the fact that they should change their attitude expression in a situation of influence, this suggests that ambivalent attitudes could be negatively perceived. Our first part will thus focus on the question of the perception of ambivalence (point 2.2.1) and will aim at providing reasons why ambivalent attitudes could be evaluated more negatively than univalent attitudes. In a second point (point 2.2.2), we will present the literature that portrayed ambivalent attitudes as being potentially useful attitudes. The third point (point 2.2.3) will directly focus on the function of univalent and ambivalent attitudes.

### ***2.2.1 The negative perception of ambivalence***

We did not manage to find any article that directly addressed how ambivalent attitudes could be socially perceived but still, several researches seem relevant for this reflection. We will discuss ambivalent attitudes in the light of cognitive consistency and then as a critique of bipolar assessments in a second step.

#### *Ambivalence and cognitive consistency*

Ambivalence stems from evaluative inconsistencies (see Armitage & Conner, 2000; Newby-Clark et al, 2002; Fabrigar, MacDonald, & Wegener, 2005). Cognitive consistency has been defined as “*the degree to which the attitude is embedded within an attitude structure consisting of values and expectancies related to the event which is its focus*” (Scott, 1959). Thus, cognitive consistency refers to the fact that we tend to behave in coherent ways: we ideally act in line with our set of beliefs and values (Abelson & Rosenberg, 1958; McGuire, 1966). The theory of cognitive dissonance revolved around the idea that cognitive consistency is a fundamental need (Festinger, 1957; Gawronski & Strack, 2012). As mentioned above, when two elements do not fit together, this creates dissonance in the individual, which is conceived of as an aversive state that leads individuals to act in order to attain a more balanced situation (Abelson, 1959). Cognitive consistency is not only assumed to be useful for the personal well being, it has also been discussed as necessary for intergroup relations.

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For instance, interpersonal consistency facilitates the formation of social groups and leads to a more efficient communication between group members (Park, Tindale, & Hinsz, 2012). Furthermore, formation impression is facilitated by consistency. Indeed, it helps people anticipating how others will react in situations as a function of how they reacted in the past and of their values. Thus, cognitive consistency is socially valued.

Moreover, several studies on consistency effects have shown that people may be aware of such value, to the extent that consistency effects appeared to be contextual and related to impression-management concerns. For instance, Schlenker observed in 1975 that individuals presented themselves in line with a feedback of performance: They described themselves as more competent after a positive feedback and less so after a negative feedback. However, this feedback effect only appeared when the individuals thought that their upcoming performance would be public. No feedback effect was found when the performance was expected to be private. In a similar vein, Baumeister (1982) mentioned that appearing consistent in the eyes of others could potentially please an audience. In order to provide a better understanding of why consistency effects could be difficult to be replicated, Cialdini, Trost and Newsom (1995) proposed that consistency could be variably valued, and depending on whether individuals uphold it or not, they could display consistency effects or not. In other terms, they proposed to control the extent to which individuals value consistency. The question of the value of consistency has been assessed in two different research programs.

First, Cialdini and collaborators proposed that there could be individual differences in the preference for consistency. In other terms, consistency is considered at an individual level in this research program (Cialdini, Trost, & Newsom, 1995, Guadagno & Cialdini, 2010). To support their claim, Cialdini et al. (1995) developed their "Preference for Consistency" scale (PFC). As they presumed, they found some variability in the extent to which individuals tend to give more or less importance to being consistent (on a 9-point scale, the mean was equal to 5.43;  $SD = 1.19$ ). Of interest, they observed that, on average people tended to value consistency (i.e. the observed mean was above the mid-point of the scale).

In another research program, consistency was expected to be valued at a social level. Thus, the authors of this line of research conceived the value of cognitive consistency as being socially based (Channouf & Mangard, 1997; Gilibert & Cambon, 2003). In other terms, they viewed the expression of consistency as being socially normative. To support this conception, they invited their participants to portray themselves under specific experimental demands. It has been highlighted that individuals could be motivated to give a specific image of themselves when they answer a questionnaire (i.e. the social desirability effect; see

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Edwards, 1957; Crowne & Marlowe, 1960). Individuals could thus modify their answers in order to appear in a more positive light for instance (this point will be detailed in 3.1). Channouf and Mangard (1997), as well as Jouffre, Py and Somat (2001) used this social desirability effect in order to see if, actually, individuals could put consistency forward in order to give a good image of themselves. Both studies observed that indeed, individuals decided to display more consistent answers in order to give a positive image of themselves, in comparison with individuals who had been asked to answer so as to give a bad image of themselves, and with individuals in a neutral situation without self-presentation instructions. This result provided support for the idea that cognitive consistency could be socially valued, and that people are aware of this value. In sum, at an individual or at a social level, consistency tends to be positively valued. Conversely, and because ambivalence has been referred to as cognitive inconsistency (see Newby-Clark et al., 2002 for instance), attitudinal ambivalence should not be positively perceived.

### *A critique of bipolar considerations*

Ambivalence could also be negatively perceived because it implies the fact of not picking a side (van Harreveld et al., 2009a). We mentioned in the historical part about attitudes the fact that the first attitude measures only offered bipolar continuums (Likert, 1932; Osgood et al., 1957). In this part, we would like to evoke that this could be due to the fact that there could be a natural tendency to dichotomize the world (in order to simplify the environment) and then to consider the two created sides as opposed (Laponce, 1974; Weisbrode, 2012). Hence, the fact that people tend to view opposites as mutually exclusive has been suggested (see also Cacioppo, Berntson & Gardner, 1997). As an illustration of such spontaneous considerations, we would like to remind the fact that Scott proposed the existence of ambivalent attitudes in 1968. In other terms, it took forty years to raise the possibility for attitudes not to be necessarily bipolar. Similarly, the existence of ambivalent emotions (i.e. the possibility of being both happy and sad at the same time) has been demonstrated in 2001 (Larsen, McGraw & Cacioppo, 2001) whereas the first bipolar model of affect has been proposed in 1980 (Russell, 1980). We believe that this tells us about the fact that ambivalent attitudes are intuitively considered as rare, or as “abnormal”.

Furthermore, this reasoning is supported by the results of Bell and Esses (2002). In the second study of their paper, Bell and Esses investigated if response amplification (i.e. the fact that ambivalent individuals respond more strongly to an influence message in comparison with univalent ones) was moderated by motivational factors. For the test of such hypothesis,

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they randomly attributed their participants to two conditions: one where ambivalence was presented positively and the other where it was presented negatively. The usual observed response amplification effect appeared only in the condition where ambivalence was perceived as something negative (the *negative motive* condition) but not when ambivalence was perceived as something positive (the *positive motive* condition). Thus, it suggests that ambivalence can indeed be seen as something negative.

However, if ambivalent attitudes could be mostly negatively perceived, several studies showed that they could lead to positive effects. In the next part, we will review literature on ambivalence that sustains the idea that ambivalent attitudes could be seen as useful attitudes.

### ***2.2.2 The useful side of ambivalence***

Even if the pliability of ambivalent attitudes is often negatively evaluated, it can be profitable to help changing negative behaviors. Hence, the fact that ambivalent individuals are more responsive to influence situations than less ambivalent individuals could lead to positive consequences and in that, they could be useful. For instance, Lipkus and collaborators (Lipkus, Green, Feaganes, & Sedikides, 2001; Lipkus, Pollak, McBride, Schwartz-Bloom, Lyna, & Bloom, 2005) reported that being ambivalent toward smoking could be helpful in the effort to quit smoking. Indeed, despite their tobacco use (and hence, the fact that they hold a positive attitude toward cigarettes), smokers have been shown to generate more arguments against smoking than in favor of smoking (Falomir, Mugny & Pérez, 2000). In line with that, ambivalence appeared to be related with a strong desire to quit smoking among teenagers. In this line of research, ambivalence is conceived as a step between the positive attitude and the expected endorsement of a negative one. In other terms, ambivalence is viewed as an intermediate between univalent positive attitudes and univalent negative attitudes, and thus as being proper in helping to change people's attitude. Focusing on health-related messages, Brömer (2002) reported that ambivalent individuals were more responsive than less ambivalent individuals. For instance, they had stronger intentions to follow low-fat diets or to exercise after being submitted to a negatively framed health message such as "not exercising regularly increases your risk of developing a serious heart disease". Zhao and Capella recently found similar effects (2008): ambivalent adolescents responded more importantly to negatively framed messages about marijuana use than less ambivalent ones. They reported more negative attitudes toward marijuana and lower intentions to smoke after message exposure such as "getting high makes you lazy and irresponsible". Thus, the pliability of ambivalent attitudes can sometimes lead to a greater good: for instance, being ambivalent

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about negative behaviors (such as behaviors that can cause health problems for instance) can facilitate the behavioral or attitudinal change in comparison with individuals who are only negatively opposed.

Hänze (2001) viewed the fact that ambivalent individuals suffer from decision-making situations as indicating that they are deeply thinking before acting. He indeed proposed that ambivalence could act as a "stop signal" when people deal with a complex situation (such as supporting a military intervention or not); for him, this signal would then prompt individuals to thoroughly consider the situation. Ambivalence could thus be adaptive in that it would help individuals pondering the pros and the cons about an issue.

Ambivalence can also be profitable in inter-personal relationships. In his article about prejudice expression, Costarelli (2011) claimed that expressing ambivalence toward the out-group could protect the self. By this means, it is possible to criticize members of the out-group and describe them in negative terms while acknowledging some of their competences at the same time. He observed that prejudice expression leads to more positive affect for the ambivalent participants. Out-group ambivalence was conceived as a more "defensible, balanced and realistic reaction" (pp. 51-52) to the relevant stereotypic traits of out-group members. Expressing ambivalence in a complex situation could thus be the optimal solution. Actually, it has been recently found that, as opposed to univalent influence message, mixed messages toward out-groups (immigrants or Arabs in France) were indeed evaluated as the most balanced, realistic and acceptable ones (Brauer, Er-Rafiy, Kawakami, & Phills, 2012). Pagliaro, Alparone, Pacilli and Mucchi-Faïna (2012) threatened the identity of their participants in their experiment and set two conditions for this purpose. In a low-threat condition, their Italian participants were opposed to Senegalese and presented as succeeding better. In a high-threat condition, they were compared to British and presented as succeeding worse. This experiment is rooted on previous research in inter-group relations that highlighted that low-status members tend to perceive members of their in-group as being similar (i.e. the in-group homogeneity effect, Simon & Brown, 1987) and on the fact that generally people prefer members of their in-group than members of the out-group (the intergroup bias, see Hewstone, Rubin, & Willis, 2002, for an account). Pagliaro and colleagues observed that participants in the high-threat condition tended to describe their group in a more ambivalent way than participants in the low-threat condition. Thus, participants who had to face an identity threat portrayed the in-group in an ambivalent way: instead of being univalently positive toward their in-group, as they would have been in a more neutral situation, they included some negative aspects in their in-group description. Ambivalence was again used as

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being protective for the image of the group; indeed, they still described their in-group positively while they were also acknowledging some weaknesses.

Lastly, ambivalence has been, mainly in the management literature, paired with mindfulness, knowledge and creativity. We have mentioned previously that ambivalence could lead to greater processing of the information, thus it is not absurd to imagine that such deep processing could have other positive consequences than “resolving the ambivalence”, that is conceived as merely siding with influence message. For instance, a greater processing of the information can lead people to being more cautious on an issue. For Weick (1998, 2002, 2004), ambivalence constitutes a wise attitude that represents the “optimal compromise” between knowledge and doubt. Fire crews that obey to the LCES system when they are fighting fires illustrate this reasoning; LCES stands for Lookouts, Communication links, Escape routes and Safety zones. Fire crews consistently have to evaluate the situation when they fight a fire and, notably, they have to take into account what they know (for instance, the placement of the exits) while keeping in their mind what they do not necessarily know (such as the location of safety zones or what will be behind a door for example). Thus, being cautious of the situation and recognizing the incomplete knowledge of the big picture is considered as being helpful in that it can allow a fast adaptation to varying situations and helps pondering the pros and the cons of each possible choice. Competing tendencies in a changing environment are seen as possibly preventing from unwarranted persistence while providing both confidence and cautiousness (Weick, 2004). Piderit (2000) argued that ambivalence could stem from changing situations (such as when a company merges with another) and that the mix of fear and excitement that results from them, could prevent from the oversimplification of an issue. Also, ambivalent individuals are expected to be more likely to raise their voice and express their concerns in debates; ambivalence could thus be useful as diverging opinions (and even dissent) can play a positive role for the renewal and the adaptation of organizations in changing situations (Piderit, 2000). Fiol & O’Connor (2003) also discussed ambivalence as potentially leading to mindful decisions. They mentioned for instance that bandwagon behaviors could be associated with both concerns about success and concerns about failure and that the co-occurrence of these two preoccupations could lead greater mindfulness.

Ambivalence can also be linked with knowledge and strategic decisions. For instance, Plambeck and Weber (2010) reported that strategic ambidexterity leads to more ambivalence; that is, the more an organization includes both offensive and defensive strategic orientations (strategic ambidexterity), the more ambivalent it will be when it will make a decision.

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Stoeckel (2013) recently observed that both objective knowledge and media consumption lead to more ambivalence. Results indicated that the more individuals knew about Europe, the more ambivalent they were about this issue. In sum, ambivalence and knowledge could be linked (see also Mutz, 2002; Meffert et al., 2004; Sawicki et al., 2013).

The link between ambivalence and knowledge could be tied up with the research of Grabowski, Wojciske and Brömer (2005), who reported that we tend to be more ambivalent toward individuals with whom we are still in contact, in comparison with individuals whom we no longer see. They reported for instance that when there is no more contact with someone, our attitude toward the person tends to be polarized (either positively or negatively as a function of how the individual is remembered) and thus, ambivalence decreases. Finally, Fong (2006) reported that ambivalent emotions (such as being happy and sad at the same time) allowed individuals to make more connections when they were asked to complete the Remote Associative Task (RAT; Mednick, 1962). In her experiment, Fong began by asking the participants to either recall an event of their lives that produces happiness, sadness or ambivalence. Participants then had to perform the RAT, that is a task where three words are displayed and people have to find a fourth word that is associated with the three first ones. For example, people who seen the words ENVY GOLF and BEANS had to write down GREEN as the solution. Fong argued that novelty arises from the ability to connect two elements that others did not see as related; this task is thus conceived as a creativity task. Results revealed that participants who recalled an ambivalent event (and thus where ambivalent emotions were primed) made more associations in comparison with participants who recalled a positive or a negative event. In other terms, emotional ambivalence has led them to more creativity.

In sum, ambivalence is not only linked with hesitations or delaying decision-making. As we have seen, ambivalence could also be resulting from complex and strategic situations.

### ***2.2.3 The function of (ambivalent) attitudes***

Attitudes have repeatedly been conceived of as helping people to appraise the attitude objects (Fazio, 2000; Fazio & Olson, 2003b). Indeed, once they have been formed, people can rely on their attitudes to efficiently process the numerous stimuli of the environment. For example, they can facilitate the categorization of attitude objects or persons (Fazio, 2001; Haire, 1950; Smith, Fazio, & Cejka, 1996). An illustration can be found in Haire (1950) where it was demonstrated that people's attitudes toward products could directly impact their perception of the buyer. In her study, participants were asked to describe a woman after reading her shopping list. Two experimental conditions were set; in a condition the shopping

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list contained "Maxwell House Coffee (drip ground)", whereas it contained "Nescafé Instant Coffee" in the other condition. The other elements of the list did not vary as a function of the condition. Haire (1950) observed that 48 % of the participants described the woman who bought "Nescafé instant coffee" as someone lazy and less organized, whereas only 4% and 12% of the sample respectively gave these descriptions when she bought "Maxwell House Coffee (drip ground)". Hence, participants categorized the target-individual based on their perception of the product; in 1950, instant coffee was likely to be perceived as indicating that people do not give enough attention to the other (sharing a coffee was indeed seen as sharing an intimate and relaxing moment, and thus, such moment required coffee-making to be made seriously).

The fact that attitudes facilitate the categorization process has further been described as freeing cognitive resources. Indeed, as people have to process information to a lesser extent when they rely on their pre-formed attitudes, they can allocate their cognitive resources elsewhere. Fazio and Powell (1997) observed that students who held attitudes toward diverse academic domains before their entry at University seemed to cope better with stressing factors during their first university year. Their study included a two-step paradigm. First, they measured the initial physical and mental state of their participants, as well as their attitude toward many academic domains. Then, participants were asked to fill the same mental and physical indicators two months later. The authors logically reported that participants with an initial bad state of health recovered as the amount of stress declined; however, interestingly, they observed that this was amplified by attitude accessibility. That is, the more participants held an accessible attitude toward the academic domains and the more likely they recovered. For the authors, this result supports the idea according to which holding an attitude freed some cognitive resources that were further used to cope with stressing events.

Attitudes can also ease decision-making (Blascovich, Ernst, Tomaka, Kelsey, Salomon, & Fazio, 1993; Fazio, Blascovich, & Driscoll, 1992). Fazio et al. (1992) reported for example that participants who developed an attitude toward abstract paintings in a first step were faster to indicate the painting they preferred when a set of paintings was presented in a second step. Attitudes also serve a social-identity function (Shavitt & Nelson, 2000; 2001). Through the expression of attitudes, people can affirm their core values and position themselves within social groups (Katz, 1960). Katz actually proposed that attitudes could serve four functions. The first one is the knowledge function, in that it helps individuals process their environment, as we just discussed. The second function is an ego-defensive function, in that an attitude can prevent the individual from having internal conflicts. Holding

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a negative attitude toward a minority outgroup can bolster people's self-esteem for instance (Falomir-Pichastor & Mugny, 2009). Attitudes also have a utilitarian function. People can adapt to their environment and hence, try to maximize the benefits and reduce the costs. It has been discussed that people develop a positive attitude toward attitude objects that are the most likely to be beneficial to them (such as developing a positive attitude toward job performance for instance). The fourth function is the value-expressive function. Attitudes can be beneficial for the people's self-concept in that it can help them to portray the image of themselves that corresponds the most to what they identify with. For instance, people who value power (i.e. human domination) have been found to be more likely to hold a positive attitude toward genetically modified food and a negative attitude toward organic food. The reverse pattern was found for people who value universalism (Dreezens, Martijn, Tenbült, Kok, & De Vries, 2005).

However, it is important to note that attitude objects can elicit different values and hence, that they can serve different functions (Maio & Olson, 2000). Furthermore, the expression of a certain kind of attitudes can be strengthened by social norms (as will be discussed in 3.1). McConahay, Hardee and Batz (1981) reported for instance that individuals are perfectly able to ponder their attitude toward Blacks when they are answering to a Black experimenter in comparison with when they are doing so with a White experimenter because they know that the expression of negative racial attitudes is socially perceived as negative. In sum, it is because attitudes help people to rapidly pick a side, hold a clear position and act in line with it, that attitudes are considered as functional. They facilitate the processing of the information as well as people's social adaptation.

These considerations directly suggest that ambivalent attitudes should be detrimental for individuals (Maio & Olson, 2000). Indeed, if univalent attitudes provide a useful predisposition, ambivalent attitudes should consequently be confusing. In fact, as we discussed above, the function of ambivalent attitudes is still not crystal-clear. We proposed to contribute in this debate by contending that ambivalent attitudes could act as a self-regulating device. By being associated with the two sides of an issue, ambivalent attitudes could in fact provide two possible ways to deal with the situation and hence, be more adaptive than univalent ones. Fazio and Ledbetter (1998; cited in Fazio, 2000) indeed reported that once a univalent attitude has been formed, individuals have trouble in processing counter-attitudinal information. Therefore, and as will be detailed in point 3, we proposed that a function of ambivalent attitudes could be to provide the opportunity to strategically portray the expected type of attitude in an evaluative situation. More precisely, we contended that ambivalent

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attitudes could serve a social function in that it could help people to adapt to a situation of influence as well as conveying a good image of themselves.

### **Concluding comments**

In this section, we discussed several articles that suggest that attitudinal ambivalence may not be socially perceived as positive. As mentioned above, cognitive consistency has been repeatedly been described as socially desirable, and picking a side also seems to be socially approved. Thus, univalent attitudes seem to be preferred to ambivalent attitudes. However, we have also discussed that ambivalent attitudes have been related to a profound comprehension and analysis of complex issues. They have been portrayed as wise attitudes and considered as being adaptive in rapidly evolving situations. Their perception thus does not seem to be so clear-cut. We concluded by introducing our reflection on what the function of ambivalent attitudes could be: namely, a self-regulating device that could help people adapt in evaluative situations.

### **3. Our approach**

« Ayant vécu 2 ans en Asie, je pense que les OGM pourraient être la solution à la famine...  
mais je suis dubitative car je pense que ça nuit en même temps à la biodiversité...  
J'ai donc des sentiments contradictoires, p-e suis-je mal informée »  
*Participante anonyme (2011).*

The above analysis of the literature on ambivalence points to a paradox. Indeed, ambivalence has been repeatedly portrayed as a negative form of attitude in many lines of research. However, if we follow such assessment, we can wonder why ambivalence is such a widespread phenomenon (Breckler, 2004). Indeed, the observed ratio of ambivalent individuals within a sample sometimes represents more than 40 % of the total. Breckler (2004) reported for instance that over 41.1% of his students' sample reported some degree of ambivalence toward nuclear power; Gutman and McConaughy (1978) highlighted that 42% of their participants were ambivalent toward television programs. Moreover, we also reported several lines of research showing that ambivalence can be related to discernment and critical thinking. Thus, depending of the line of research, ambivalent attitudes could be either weak attitudes that people want to suppress or attitudes that lead them to being more critical and wise.

We consequently proposed to cope with this paradox by studying the function of ambivalent attitudes. We considered that ambivalent attitudes could be negatively perceived in most cases, mainly because of the preference for consistency and the fact that we tend to

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arrive at conclusion; however, we also considered that ambivalence could suggest that people are pondering the pros and the cons of an issue. In other terms, we assumed that ambivalent attitudes could be socially valued. We supposed that, because of this potential value, displaying ambivalence or not could correspond to a self-presentation strategy. In other terms, it seemed plausible to think that people know when pondering an issue will be beneficial for them and when it should be less likely the case. We extended this reflection by studying how ambivalent individuals were effectively socially perceived. We wanted to make sure that indeed, the display of such attitudes could be socially perceived as positive. This reflection has been pursued in two lines of research that will be detailed in 3.3. Before presenting our specific hypotheses, we will present the common paradigms that are used by research that focuses on social norms and social values (part 3.1.1) and speak about the two fundamental dimensions of social judgment (part 3.1.2). In a second section (3.2), we will specify the conditions according to which ambivalence could be more or less likely to be displayed as well as being socially valued.

### **3.1 How to study social norms and their associated valued components.**

It has been reported that individuals could strategically adapt their behaviors or their answers in evaluative situations. For instance, people are more likely to fake their answers when they apply for a job: 15% of job applicants declared to have occupied jobs they did not in fact occupy (Goldstein, 1971). Likewise, individuals have been reported as being able to strategically alter their answers when they fill a questionnaire.

#### ***3.1.1 Social desirability***

Edwards and Horst (1953; cited in Lemaine, 1965) have approached this problem by focusing on personality tests (namely on the Minnesota Multiphasic Personality Inventory; MMPI). They noticed that several questions of this personality test were tainted by social desirability. In other terms, because what they were assessing was valued (either positively or negatively), individuals were more likely to answer according to such value instead of answering in line with their personality as expected. It has been later pointed out by Messick and Jackson (1961) that people are indeed motivated by gaining social approval through their answers on this questionnaire. Researchers have consequently attempted to identify and control the social desirability of questionnaires with the aim of obtaining more “sincere” answers.

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Crowne and Marlowe (1960) devised a social desirability scale for this purpose (an example of item could be “I am always willing to admit when I make a mistake”). This scale allows identifying the degree of variance in the answers due to social desirability effects and thus, after being controlled for, the observed responses should be more reliable. Several other studies were conducted in order to compare the tests to identify the more permeable questionnaires (i.e. the most subject to faking) and the ones that do not vary much as a function of social desirability effects (see Alliger & Dwight, 2000 for instance) whereas other focused on identifying the type of individuals who are more likely to fake (see McFarland & Ryan, 2000 for example). In sum, a lot of research has been devoted to identifying who would be the most likely to fake, as well as trying to control the degree of social desirability of questionnaires in order to obtain more reliable measures.

It is important to note that the function of such desirability effects has been recently criticized: Uziel (2010) proposed that social desirability scales could be indicative of people’s self-control. He reported that the propensity to easily adapt in social situations was done in order to gain social approval, and thus as being inter-personally oriented instead of being done for satisfying the self. Social desirability would thus be directed toward others and used to appear in a better light in the eyes of others. Notwithstanding the importance of such lines of research, they do not take into account what people decide to portray in order to gain social approval and though, do not help in identifying the socially valued constructs (Lemaine, 1965). Indeed, they simply highlighted that questions could be tainted by social desirability and that answers that depend on them could be faked without especially focusing on what is most likely to be presented when people are motivated in appearing in a good light in the eyes of others. We will now present researches that did aim at doing so.

### ***3.1.2 A presentation of the common paradigms***

Jellison and Green (1981) devised three paradigms to identify the value of the answers that are displayed when participants fake. However, we will only detail two of them in this section. Indeed, the third paradigm (i.e. the “identification paradigm”) is the paradigm that has been the least used of the three paradigms in the literature (Gilibert & Cambon, 2003) and furthermore, we did not took it into consideration in any of our experiments.

The first paradigm is the “self-presentation paradigm”. In this paradigm, individuals are either invited to answer a questionnaire in a self-enhancement condition (that is in order to give a good image of themselves) or in a self-depreciation condition (that is in order to give a negative image of themselves). The rationale is that, if people know what answer is valued

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(what the social norm is), then they should be able to purposely alter their answers as a function of the condition. Thus, through this means, it is possible to deduce if the answers are affected by social desirability by looking at the difference in the answers as a function of the condition. Indeed, a question can be considered as not being neutral (i.e. as being subject to social desirability) if people do not answer the same when they try to give a bad image of themselves in comparison with when they try to give a good image of themselves (Paulhus & Vazire, 2007). Furthermore, it is possible to identify the direction of the value: for instance, if people display more professional experience than they really have when they apply for a job, this suggest that professional experience is indeed positively perceived in such situation. By this mean, Jellison and Green (1981) observed for instance that individuals endorsed more internal explanations than external ones in a positive self-presentation condition. An example of an internal explanation could be to attribute success to hard work whereas an external explanation would be to attribute it to luck for instance. Consequently, internality (the attribution of the responsibility of events to the self) has been identified as a valued component. Numerous studies further replicated the fact that under evaluative conditions, people were more likely to display internal explanations in comparison with more external ones (Dubois, 2003; Dubois & Aubert, 2010; Cambon, 2006).

Dubois (1988, cited in Gilibert & Cambon, 2003) slightly modified this paradigm by adding a “standard” condition. Indeed, before being invited to answer in one of the two self-presentation conditions, individuals are requested to answer without any specific instructions. This condition serves as a baseline even if the answers of such conditions are generally quite close to the ones observed in the self-enhancement condition (see Jouffre, Py, & Somat, 2001 for instance). Indeed, even in a standard condition, individuals could already be motivated to present a positive image of themselves (Bressoux & Pansu, 2007). This paradigm can be used in two ways. First, the self-presentation conditions can be set as a between-participants variable: two groups will be randomly attributed to either the self-enhancement condition or the self-depreciation condition (Dubois, 2000). The difference between the two conditions will suggest what the participants have valued: in other terms, if individuals displayed more internal answers in the self-enhancement condition than they did in the self-depreciation condition, this suggests that they attributed some value to internality. Manipulating the person to whom one has to present oneself could also be an effective procedure. For instance, Esnard & Jouffre (2008) asked their pupils to answer in order to be evaluated by either their teachers, their parents, or their peers.

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A second way to proceed is to display such conditions as a within-participants variable. In this case, participants will have to fill in the questionnaire three times. First, they will answer in a standard condition and then, in turn, under a self-enhancing instruction or under a self-depreciation instruction. The two self-presentation conditions are commonly counterbalanced but the order does generally not impact the answers (see Jouffre et al., 2001 for instance). Using the self-presentation instructions as a within-participants variable allows identifying the respondents' "normative clear-sightedness" (i.e. the extent to which individuals are aware of the social norm). Individuals can indeed easily shift their answers as a function of the instructions and move from an opposite to the other (they can easily display an extremely positive answer on a socially valued item and then an extremely negative answer to the very same item for instance). The self-presentation paradigm set as a within-participants design presents an advantage in comparison with when it is set as a between-participants design. It is convenient to investigate the extent to which individuals answer strategically when they fill a questionnaire. By looking at the difference in the answers as a function of the condition it is possible to conclude that individuals did purposely portray a specific trait to a greater extent. When it is set in a between-participants design, it is not possible to be sure that the difference in the endorsement of a trait has indeed been done strategically and is not due to different samples for instance. However, both procedures allow the identification of the desirable component of a scale.

Thus, the self-presentation paradigm is helpful in identifying the type of component that people will display to a greater extent when they are motivated to appear positively. However, it does not tell anything about the efficacy of such behavior. Indeed, it is not because an individual decides to put a specific trait forward in a self-presentation condition that such trait is necessarily socially valued (Dubois & Beauvois, 2005). For instance, we can imagine a boy who describes himself as being aggressive, when aggressiveness is generally not accepted and negatively perceived. Trying to influence others by faking one's answers is thus not necessarily beneficial. The "judge paradigm" has been devised in order to test if the faking strategy is effective in influencing others.

The judge paradigm allows to directly identify the valued component or a social norm (Jellison & Green, 1981). In order to test if internal attributions were more socially approved and valued than external attributions as presumed, Jellison & Green (1981) asked their participants to give their impression of students who filled in the Rotter's Internal-External Locus of Control Scale that is composed of 23 items (Rotter, 1966). The experimenters in fact filled in the scale. It was done in such a way as to create a low-internality condition (one item

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reflecting an internal response out the 23 items was circled), a moderate-internality condition (thirteen items reflecting an internal response were circled), a high-internality condition (twenty items reflecting an internal response were circled) and a very-high internality condition (where all the items reflected internal responses). Thus, bogus answers to a questionnaire were presented to the participants and they were invited to judge the alleged former participants after reading how they answered a questionnaire. The comparison of the impressions as a function of the internality condition allowed the identification of the most valued component; internal explanations were evaluated as the most desirables in comparison with less internal ones. Hence, this paradigm lies on the same rationale than the self-presentation paradigm: people will know if a component is valued. In sum, the more this component is displayed in the answers and the more positive the individual will be evaluated. As the present paradigm involves a form of social judgment, it seems relevant to discuss the literature that has identified two dimensions in social judgment.

### ***3.1.3 The fundamental dimensions of social judgment***

Two main dimensions seem to shape people's perception of individuals, groups (stereotypes) and objects (for a recent review, see Kervyn, Yzerbyt, & Judd, 2010). Fiske (2011) argued for instance that it is essential to know other's intention when they are encountered. For instance, people need to know if they are dealing with a friend or a foe and hence, if the other holds sympathetic or hostile intentions. The other important characteristic is whether the other can be helpful or not or in other terms, if the other will display any kind of competence or not. These two dimensions have been variously termed across time, for instance value versus dynamism (Osgood, 1962); social desirability versus intellectual desirability (Rosenberg, Nelson, & Vivekananthan, 1968); self-profitability versus other-profitability (Peeters, 1992); communion versus agency (Abele & Wojciszke, 2007); warmth versus competence (Fiske, Cuddy, Glick, & Xu, 2002) and social desirability versus social utility (Dubois & Beauvois, 2005) to name a few designations. However, if these different terms refer to similar concepts, they lead to different approaches in the study of the social judgment (Beauvois & Dubois, 2009). Social desirability corresponds to the individuals' ability to engender a positive evaluation in others, while social utility corresponds to the ability to satisfy the requirements of a given social environment and thus to the individuals' chances of success in social life (Dubois & Beauvois, 2005).

The approach of Beauvois and collaborators (Beauvois, 1995; Beauvois & Dubois, 2009) has been highly influential among the researchers who used the judge paradigm.

## 2- Theoretical Part

Consequently, in most of these studies, participants were asked to rate the extent to which bogus participants appeared to be high on social desirability as well as on social utility as a function of their answers (see Cambon, Djouari, & Beauvois, 2006; Dompnier, Darnon, Delmas & Butera, 2008; Dubois & Beauvois, 2011 for instance). This distinction allows specifying the perception of traits displayed by a target. Indeed, people can evaluate that displaying more internal explanations for instance in comparison with another individual gives the impression of an agreeable individual. Such person should be more likely to appear desirable in the eyes of others. The other dimension assesses the extent to which people who display the same trait are evaluated as being competent. Social value is conceived as indicating that people who endorsed such valued trait are people who are the most likely to attain a position of power (i.e. to climb in the social hierarchy). In line with this, it has been observed that components that have been highlighted as valued and normative were valued on the social utility dimensions. For instance, people who agreed to a greater extent to items in favor of consistency or to items in favor of the belief in a just world were evaluated as the most competent (Sénémeaud, Mange, Gouger, Testé & Somat, 2011, Alves & Correia, 2010).

### **Concluding comments**

In this section, we started by pointing to a paradox in the literature on ambivalence. Ambivalence is on the one hand described as being aversive and unstable and on the other hand it is described as a wise form of attitude that is encouraged because it allows adaptation and increases mindfulness. Ambivalent individuals have been described as weak individuals who are easily influenced, but also as strategic individuals who adapt to the pressure of the environment, and thus, as individuals who could know when displaying ambivalence could be more or less likely to be accepted. We proposed to tackle this point by arguing that ambivalent attitudes could hold a specific social value. Indeed, we proposed to view ambivalence as indicating that one is pondering the pros and the cons about an attitude object; in this respect, individuals who display an ambivalent attitude could be positively judged. The two dimensions of social judgment allow to specify this reasoning: because ambivalent attitudes represent a compromise between knowledge and doubts as well as a wise attitude in relation to strategic issues, ambivalence could be evaluated positively on social utility. Voicing both positive and negative evaluations of an issue may be seen as a form of critical thinking, and could indeed sustain their image of competence in the domain, in comparison with voicing more univalent evaluations.

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The valorization of ambivalent attitudes should specifically be observed on the social utility dimension. Indeed, social norms and social desirability are often associated in the literature (Gilibert & Cambon, 2003; Johnson & van de Vijver, 2003), and therefore pro-normative attitudes should be evaluated as the most desirable. Ambivalent attitudes should be less valued than pro-normative ones in terms of desirability, as they represent a certain degree of deviance, and counter-normative attitudes should be the least valued on desirability, as they are the most deviant. Also, because of the above paradox, we do not believe that the expression of ambivalence will always be well perceived in terms of social utility. Ambivalent attitudes could only be valued when they are expressed on complex attitude objects, on issues where weighting would indeed indicate that people are reflecting on the issue and not contesting it. Controversial attitude objects appeared ideal for this purpose.

### 3.2 Controversy

As just mentioned, we assumed that ambivalence should not be positively perceived on any attitude objects but that it should be more likely the case on controversial ones. Indeed, when there is a controversy about an attitude object, positive and negative aspects of the issue are debated. For instance, the publication of the article by Séralini, Clair, Mesnage, Gress, Defarge, Malatesta, Hennequin and Spiroux de Vendômois (2012), which revealed that genetically modified maize could be detrimental for the health, has stimulated numerous articles about whether the results of research on genetically modified food and their health-related problems were reassuring or worrying (see Peeples, 2012, for instance). Thus, pondering over an issue could be socially valued. The reasoning is that, because controversy divides the opinions, the expression of ambivalent attitudes should be more positively perceived in such situations as it amounts to acknowledging both sides of an issue. For instance, being cautious about the publication of Séralini seems to be wise (ambivalence can indeed prevent from oversimplifications; Piderit, 2000). It is hence plausible to think that displaying an ambivalent attitude could make people appear more competent in comparison with people who are more extreme in their attitude.

The idea that ambivalence could be more positively perceived in case of controversial issues had been already mentioned by Maio and Haddock (2004): *“it is possible that social norms make it occasionally desirable to have high ambivalence in an attitude, such as when the issue is controversial. In this situation, people who appear ambivalent may give the impression of being fair and knowledgeable. These individuals may also be inoffensive to others because they “agree” with everyone to some extent”* (p. 435; see also Maio &

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Haddock, 2010, pp. 41-42). However, they simply evoked this possibility and neither provided any data in favor or against it, nor formulated an explanation for this possibility. In our work, we set out to experimentally account, and explain, this possibility. Thus, we decided to take into account the controversy associated with attitude objects in our experiments; a controversial issue was here conceived as one that elicited a heated debate and a polemic disagreement. As a reminder, we hypothesized that the expression of ambivalent attitudes could be more likely than that of univalent attitudes to be valued on social utility, but not on social desirability, when being expressed on controversial issues in comparison.

### 3.3 Overview of the studies

We will present two lines of research in this dissertation. The first of these was designed to investigate if, indeed, ambivalence could be strategically displayed to a greater or a lesser extent as a function of self-presentational concerns. Our general hypothesis was that, if people consider that ambivalence could have some value, then they would be able to adapt the expressions of their level of ambivalence to the situation. For this purpose, we decided to use the self-presentation paradigm (Jellison & Green, 1981; Dubois, 1988), as this paradigm is convenient to investigate the extent to which individuals answer strategically when they fill a questionnaire. Indeed, when the self-presentation conditions are set as a within-participants variable, participants have the opportunity to purposely shift their answer in line with instructions. If individuals are strategic when filling ambivalence measures, we should observe a difference as a function of the self-presentation conditions. Thus, we predicted that individuals could exert some control over the expression of attitudinal ambivalence (Hypothesis 1). This control was assumed to be exerted for self-presentation purposes, in that people could try to display a positive image of themselves when filling measures of ambivalence. Specifically, we hypothesized that the difference in the level of ambivalence should be observed in the self-depreciation condition in comparison with the standard condition and the self-enhancement one (Hypothesis 2). Indeed, it has been shown that individuals are generally already motivated to give a positive image of themselves in a standard condition and thus, there is either a high correlation between the score in the standard condition and the self-enhancement one (Bressoux & Pansu, 2007) or no difference at all (see Jouffre et al., 2001). The third hypothesis took the controversy of the attitude object into account. If it is true that ambivalence has some value because it may indicate that people are pondering the pros and the cons of an attitude object, then people should purposely decide to display more ambivalence in both a standard condition and a self-enhancement condition in

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comparison with a self-depreciation condition on controversial attitude objects. We hypothesized that the reverse should happen on more consensual issues as they strongly imply what should be expressed. Hence, we hypothesized that people should purposely decide to display less ambivalence in both a standard condition and a self-enhancement condition in comparison with a self-depreciation condition on consensual attitude objects.

These hypotheses have been tested in four experiments. The first two were devoted to testing hypotheses 1 and 2 on a controversial attitude object. We decided to focus on Genetically Modified Organisms (GMOs) in these studies. GMOs were chosen because controversies about them are quite vivid and frequent (see Peeples, 2012) and they were indeed evaluated as being controversial in a pilot study ran on a sample of Swiss students. The third experiment was run on a consensual attitude object in order to show that indeed, if people strategically adapt their level of ambivalence on this attitude object as well, they should display more ambivalence in order to give a negative image. The fourth experiment was run in order to manipulate the degree of controversy associated with the attitude object, and directly test hypothesis 3. We thus run a fourth experiment on GMOs but we set up two experimental conditions: in one condition, we introduced GMOs as being consensually negatively perceived in Switzerland whereas in a second condition GMOs were introduced as being subject to a heavy debate and thus as a controversial attitude object.

The second line of research has been carried out to extend the implications of the first line of research. We wanted to investigate how ambivalent individuals would be judged when expressing their ambivalence in comparison with univalent individuals, as we proposed that the expression of ambivalence could also be socially valued by an external perceiver. We thus reasoned that ambivalent individuals could be evaluated as more competent and intelligent (social utility) than their univalent counterparts (as this might signal that people have been pondering the issue), but not necessarily more nice and agreeable (social desirability). This was also rooted on the fact that social norms and social desirability are often tied (Gilibert & Cambon, 2003; Johnson, & van de Vijver, 2003). Moreover, as for the first line of research, we assumed that this effect should be more likely to happen on controversial attitude objects. More specifically, Hypothesis 1a specified that people displaying ambivalence on controversial attitude objects should be rated the highest on social utility in comparison with people displaying univalent attitudes (either in favor or against the attitude object). Hypothesis 1b predicted a linear effect on social desirability in that that people who display the pro-normative attitude on controversial attitude objects should be evaluated as the most desirable, the ambivalent one should be less valued (as it is a bit deviant from the pro-

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normative attitude) and the counter-normative one should be the least valued (as it is the most deviant attitude). We assumed that the valorization of ambivalent attitudes would be more likely to be observed on controversial attitude objects. Indeed, consensus implies that most people agree on what to think of the attitude object and, notably, in perceiving it positively or negatively (Pérez & Mugny, 1996; Krueger, 1998). We thus expected that pro-normative attitudes would be preferred to ambivalent ones on both dimensions. Hypothesis 2a thus specified that we should observe a linear effect on social utility for consensual attitude objects: people who display the pro-normative attitude should be evaluated as the most useful, the ambivalent one should be less valued and the counter-normative one should be the least valued. Hypothesis 2b postulated the same effect on social desirability: people who display the pro-normative attitude should be evaluated as the most desirable, the ambivalent one should be less valued and the counter-normative one should be the least valued.

These hypotheses have been tested in four experiments. We chose the attitude objects as a result of a pilot study and thus, ran Experiments 5 and 6 on controversial issues and Experiments 7 and 8 on consensual issues. More precisely, Experiment 5 dealt with death penalty, Experiment 6 on immigration, Experiment 7 on recycling and Experiment 8 on organic products.

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**3. EMPIRICAL PART**  
**FIRST LINE OF RESEARCH**

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## The Social Value of Being Ambivalent: Self-Presentational Concerns in the Expression of Attitudinal Ambivalence<sup>1</sup>

### 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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## **The Social Value of Being Ambivalent:**

### **Self-Presentational Concerns in the Expression of Attitudinal Ambivalence**

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 (Zembarain & 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

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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)

### 3- Empirical Part: First Research Line

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

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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 (Gilbert & 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,

### 3- Empirical Part: First Research Line

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

### 3- Empirical Part: First Research Line

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

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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.** A hundred and twenty-one 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

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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):  $\text{attitudinal ambivalence} = P + N - 2 | P - N | + k$ . 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).  $\text{POMP} = [(observed - minimum)/(maximum - minimum)] \times 100$ , 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-

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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  $F(1, 148) < 1, p > .05$ .

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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).*

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

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

### 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,  $F(1, 44) = 2.56, p > .05$ .

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**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,  $F(1, 32) = 2.88, p > .05$ .

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).*

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

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

## 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

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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 result 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

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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 ( $\alpha = .78$  for the standard condition,  $\alpha = .85$  for the self-enhancement condition and  $\alpha = .81$  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,  $F(1, 26) < 1, p > .05$ .

Table 3.

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

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

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

### 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,

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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

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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.

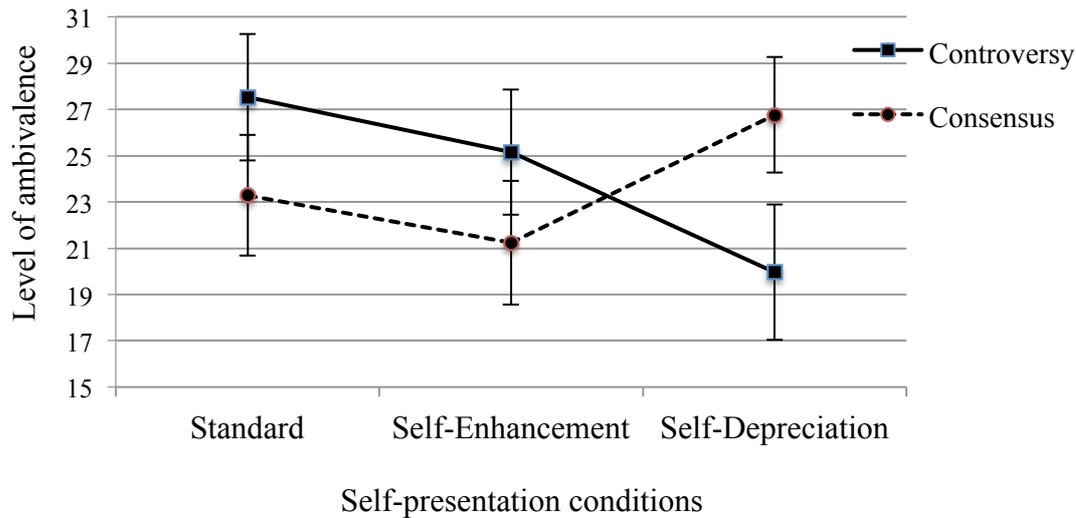
Because of time constraints, participants were asked to report the adjectives they associate with GMOs by selecting them from a list of ten positive and ten negative adjectives (cf. Cavazza & Butera, 2008). We selected the 10 most frequent positive adjectives and the 10 most frequent negative ones from 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.

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*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.

### 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

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(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-

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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., Tedeschi, 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

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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

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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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**3. EMPIRICAL PART**  
**SECOND LINE OF RESEARCH**

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# The Social Utility of Ambivalence: Being Ambivalent on Controversial Issues is Recognized as Competence<sup>2</sup>

## Abstract

We tested the contested hypothesis that the expression of attitudinal ambivalence could be positively valued, if it signals careful consideration of an issue. More specifically, we hypothesized that the expression of ambivalence should be judged higher than clear-cut attitudes on social utility (competence), but not on social desirability (warmth). This should be the case on controversial (vs. consensual) issues, where ambivalence can signal the expression of competence. Participants indeed evaluated ambivalence as higher than clear-cut (normative and counter-normative) attitudes on social utility, when expressed on controversial issues such as immigration (Experiments 1) and death penalty (Experiment 2), whereas pro-normative attitudes were evaluated highest on social desirability. On consensual issues, organic products (Experiment 3) and recycling (Experiment 4), pro-normative attitudes were judged as highest on both social utility and social desirability. Attitudinal ambivalence can thus be positively valued because perceived as indicating competence when the expression of criticism is socially accepted.

*Keywords:* ambivalence, attitudes, social value, judgment, controversy

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### **The Social Utility of Ambivalence:**

#### **Being Ambivalent on Controversial Issues is Recognized as Competence.**

It has been more than 40 years now that Scott (1968) and Kaplan (1972) introduced the concept of attitudinal ambivalence to describe the possibility that an individual could hold both positive and negative attitudes toward the same attitude object. Following their seminal work, an important body of research has been devoted to better understand the consequences of holding an ambivalent attitude on a wide range of outcomes, from predicting behavior to well being (e.g. Conner & Armitage, 2008); this has been a very valuable research effort, as it appears that ambivalent attitudes are a widespread phenomenon (Breckler, 2004). Notwithstanding the importance of the phenomenon and the wealth of research that has investigated the consequences for those who hold ambivalent attitudes, only a limited number of studies provide insights about how the expression of ambivalence could be socially perceived, and none has focused on whether it could be perceived as having some social value. The present paper aims at filling this gap in the literature by directly examining how individuals expressing attitudinal ambivalence are judged in comparison with individuals expressing univalent attitudes; more precisely, we hypothesize that ambivalence could be valued on controversial attitudes objects in that pondering the pros and cons of an issue signals a competent judgment.

#### **Attitudinal Ambivalence: Strength or Weakness?**

Attitudinal ambivalence has primarily been studied as a dimension of attitude strength (Thompson, Zanna, & Griffin, 1995; for a review, see Conner & Sparks, 2002). In comparison with univalent attitudes, ambivalent attitudes have been shown to be less stable over time, more pliable, less likely to guide information processing and less predictive of intentions and further behavior (for a review; see Armitage & Conner, 2004). In this perspective, ambivalent attitudes are presented as weak attitudes (Sawicki, Wegener, Clark, Fabrigar, Smith, & Durso, 2013). Furthermore, as ambivalence derives from mixed attitudes that rely on conflict and indecision, it has often been associated with cognitive dissonance (Priester & Petty, 1996; Clark, Wegener, & Fabrigar, 2008; van Harreveld, van der Pligt, & de Liver, 2009). Consequently, as for individuals in cognitive dissonance, ambivalent individuals have been described as willing to "solve their ambivalence" (Festinger, 1957; Hodson, Maio, & Esses, 2001; Newby-Clark, McGregor, & Zanna, 2002). In line with this view, holding an ambivalent attitude has been considered as an aversive state (Nordgren, van

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Harreveld, & van der Pligt, 2006), that potentially generates psychological discomfort in decision-making situations (van Harreveld, Rutjens, Rotteveel, Nordgren, & van der Pligt, 2009). Thus, the above results, combined with the finding that ambivalent individuals seem to be motivated to reduce their ambivalence (e.g., Bell & Esses, 1997, 2002), should lead to predict that the expression of an ambivalent attitude may be negatively viewed. However, other lines of research discussed attitudinal ambivalence in a more positive light.

Mixed attitudes can also lead to some benefits. If attitudinal ambivalence is generally known to be a poor predictor of further behavior, as discussed above, it can increase the likelihood of changing some specific behaviors (Armitage & Conner, 2000; Armitage & Arden, 2007). For example, Lipkus, Pollak, McBride, Swartz-Bloom, Lyna and Bloom (2005) reported that attitudinal ambivalence was positively linked with the desire to quit smoking among teen smokers. Ambivalence can then be seen as adaptive when it focuses on contributing to changing negative behaviors. Ambivalence can also provide advantages in intergroup relations: Pagliaro, Alparone, Pacilli and Mucchi Faina (2012) investigated how low-status individuals can cope with social identity threats (namely, when Italians were disadvantageously compared to the British) as a function of their identification toward their ingroup, and found that low-identifiers, as compared with high-identifiers, perceived their ingroup as more variable (consisting of various positive and negative, as opposed to only positive traits). Interestingly, these authors interpret such attitudes as an adaptive form of social creativity in the face of identity threat. Finally, Costarelli (2011) recently described ambivalence toward out-groups as a more "defensible, balanced and realistic reaction" to the relevant stereotypic traits of the out-group members (pp. 51-52). The reasoning behind this statement is that endorsing an ambivalent attitude allows the individuals to express negative attitudes that fulfill their "need to be prejudiced" toward out-group members while at the same time expressing positive attitudes, which results in a balanced position that might be positively perceived by others. Therefore, some recent research suggests that the expression of ambivalent attitudes could also be positively perceived in some cases. Which cases?

#### **The Social Value of Attitudinal Ambivalence**

Some attitude objects are more likely to arouse ambivalence than others (Conner, Povey, Sparks, James, & Shepherd, 1998; Dahl, Darke, Gorn, & Weinberg, 2005). For example, Breckler (2004) reported that 41.1% of the students identified themselves as ambivalent on nuclear power whereas they were only 11% to be ambivalent about legalized abortion and 15.1% about gun control laws. Such different ratios could be the result of the

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saliency of the social norm associated with the attitude objects: When there is a clear social norm (consensus), an ambivalent attitude could then be seen as a deviant attitude in comparison with the socially valued (univalent) one, and subsequently could be less positively perceived. Conversely, when there is a strong debate and competing arguments regarding an issue, holding a certain degree of ambivalence could be positively valued, as it might signal that one is aware of the complexity of the issue.

Thus, as Maio and Haddock (2004, 2009) suggested it, ambivalent attitudes could be valued when being expressed on controversial issues. And indeed, recent research by Pillaud, Cavazza, and Butera (2013) provides direct support for this reasoning. These authors reported that individuals displayed a more ambivalent attitude when they had to present themselves in a positive way, and that they did so especially when they had to express themselves on a controversial attitude object, as opposed to a consensual attitude object. In sum, contrary to a longstanding tradition that views attitudinal ambivalence as a weak form of attitudes and an aversive state, recent research revealed that individuals could express ambivalent attitudes when they want to be positively evaluated, to the extent that the attitude object is controversial.

#### **Why Can Attitudinal Ambivalence Provide Value?**

Why can one be positively valued when expressing ambivalent attitudes? In the reasoning presented above, we suggested that expressing ambivalence when treating a controversial issue might signal that one is pondering the pros and the cons, which might imply some sort of competence. However, to date no research has demonstrated that attitudinal ambivalence is associated with competence. This lack of direct evidence notwithstanding, research on social judgment might provide indirect support for this hypothesis.

A now well established line of work has shown that people's judgments about individuals, groups (stereotypes) and objects tend to be organized according to two main dimensions (for a recent review, see Kervyn, Yzerbyt, & Judd, 2010). These two dimensions have been variously termed, for instance value versus dynamism (Osgood, 1962), social desirability versus intellectual desirability (Rosenberg, Nelson, & Vivekananthan, 1968), self-profitability versus other-profitability (Peeters, 1992), communion versus agency (Abele & Wojciszke, 2007), warmth versus competence (Fiske, Cuddy, Glick, & Xu, 2002), and social desirability versus social utility (Dubois & Beauvois, 2005). If these different terms cover similar concepts, they lead to different approaches in the study of the social judgment

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(Beauvois & Dubois, 2009). The approach proposed by Beauvois and Dubois (Beauvois, 1995; Dubois & Beauvois, 2005) better fits the general purpose of the present research, to the extent that social desirability and social utility refer to the “social worth” conveyed by individual during an evaluative process (Beauvois & Dubois, 2009), and in the present research we want to study precisely why individuals expressing attitudinal ambivalence can be valued. Social desirability corresponds to the individuals’ ability to engender a positive evaluation in others, while social utility corresponds to the ability to satisfy the requirements of a given social environment and thus to the individuals’ chances of success in social life (Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Dubois & Beauvois, 2005). On the basis of this distinction, it is then possible to argue that—if it is true that expressing ambivalence on a controversial issue may be understood by an observer as evidence that one is pondering the pros and cons, in other words, displaying competence—it should be found that attitudinal ambivalence can be valued in terms of social utility, but not necessarily in terms of social desirability.

An analysis of the literature on the effects of attitudinal ambivalence provides some indirect support to this idea. On the one hand, research in which ambivalence has been studied for its higher proclivity to being influenced by the others could be linked with social desirability. In particular, some research by Bell and Esses (1997, 2002) is in line with this reasoning. These researchers reported in a first study that ambivalent individuals are more influenced by positive and negative information (i.e. response amplification) than less ambivalent individuals: They strongly endorsed a positive/negative attitude after the presentation of positive/negative information. More interestingly, response amplification was further proven to be motivated by social desirability, to the extent that it was greater when ambivalence was described as negative than when it was described as positive (Bell & Esses, 2002, Study 2). In other words, individuals complied with the influence message only when ambivalence was presented as being negative. In support to this reasoning, Cavazza and Butera (2008) reported that more ambivalent individuals purposely sided with a normative source of influence on topics that were directly related to the source’s message, but not on topics more indirectly related to this message, unlike less ambivalent individuals. Thus, the proclivity of ambivalent individuals to being influenced—quite a frequent phenomenon (see Armitage & Conner, 2000; Hodson et al., 2001 for instance)—might be a sign of the attempt to avoid the social undesirability of attitudinal ambivalence.

On the other hand, the aforementioned research by Cavazza and Butera (2008) also suggests that attitudinal ambivalence may be linked to social utility, to the extent that it may

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be instrumental to adapting to the social environment, for instance to resisting persuasive pressure of the majority, since ambivalent participants comply at a direct, but not indirect level. Similarly, Weick (2002, 2004) approached the concept of ambivalence as being an "optimal compromise" in his theoretical papers. Ambivalence was conceived of as a wise attitude that allows equilibrium between knowledge and doubts (Weick, 1998, 2004). Indeed, in a changing environment (such as fire crews fighting fires for instance), competing tendencies can prevent from unwarranted persistence, while providing both confidence and cautiousness. In other terms, ambivalence is considered as being helpful in that it can allow a fast adaptation to varying situations. In line with this idea, it also has been suggested that ambivalence could be linked with critical thinking, namely by enhancing mindfulness (Fiol & O' Connor, 2003). For instance, Piderit (2000) argued that the expression of ambivalence is more likely to generate dialogue in comparison with the expression of support or opposition. Likewise, Green, Visser and Tetlock (2000) reported that the coexistence of conflicting attitudes could lead to higher message scrutiny and integrative complexity. Focusing on creativity, Fong (2006) reported that emotional ambivalence could lead individuals to make more associations (i.e. to be more creative) in comparison with happy or sad participants. Finally, ambivalence toward Europe was recently found to be positively related with objective knowledge and news media consumption (i.e. political sophistication; Stoeckel, 2013). Attitudinal ambivalence could therefore be perceived as a form of competence, and then be perceived as socially useful.

If it appears possible that attitudinal ambivalence is associated with competence, it still needs to be determined in which cases, and in particular whether it is plausible that attitudinal ambivalence would be associated with competence in case of controversial issues, as proposed above. This idea is indirectly supported by the recent work of Stoeckel (2013), who reported that the disagreement among the elites on the attitude towards Europe did increase the citizens' probability of being ambivalent by 16.5 percent. The reasoning is that if elites are divided over an issue, their positions will be more differentiated and more likely to be in competition with one another. In return, citizens will be more likely to be ambivalent toward the issue. Similarly, Plambeck and Weber (2010) observed that strategic ambidexterity in an organization (i.e. the inclusion of both offensive and defensive strategies) lead to more ambivalence in a decision-making situation. Indeed, as Larsen pointed out, ambivalence can indicate that one is "coming to grips with the complexity of the world" (Larsen, cited in Wang, 2010).

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In sum, the vast majority of research to date in social psychology considers that attitudinal ambivalence is a weak form of attitude and an aversive state; in other words, a form of attitude that should not be valued by individuals. However, some recent research (in social psychology and in other research areas) has shown that attitudinal ambivalence may have a positive impact (such as enhancing mindfulness, wisdom or creativity) and allow resisting influence. Furthermore, a recent article reported that individuals might express attitudinal ambivalence to achieve a positive image of themselves, when the issue is controversial (Pillaud et al. 2013). To the best of our knowledge, no research has investigated whether expressing attitudinal ambivalence in case of controversial issues does indeed generate a positive image in observers, and if it does, why. Four experiments have been designed for this purpose.

#### **Hypotheses and Overview**

On the basis of the reasoning presented in the previous section, we hypothesized that the expression of ambivalence should be judged higher on social utility in comparison with univalent attitudes, when ambivalence is expressed on *controversial* attitude objects (Hypothesis 1a). This should not be the case on social desirability: Given that social norms and social desirability are often associated in the literature (Gilibert & Cambon, 2003; Johnson & van de Vijver, 2003), and as we view ambivalent attitudes as potentially indicating competence, we reasoned that ambivalent attitudes cannot be judged higher on social desirability than pro-normative attitudes. Thus, we hypothesized that we should observe a linear effect on social desirability as a function of the displayed attitude: the pro-normative attitude should be evaluated as the most desirable, ambivalence should be less valued (as it is a bit deviant from the pro-normative attitude) and the counter-normative attitude should be the least valued (as it is the most deviant attitude) (Hypothesis 1b).

As non-controversial, *consensual* attitude objects imply that there is a strong consensus on what the expressed response should be (Pérez & Mugny, 1996), we reasoned that the pro-normative attitude should be evaluated the highest, regardless of the judgment's dimension. Thus, we hypothesized that pro-normative attitudes should be evaluated as higher on social utility than the ambivalent ones, which should in turn be evaluated as more useful than the counter-normative one (Hypothesis 2a). We expected to find the same linear effect on social desirability (Hypothesis 2b).

In order to test our hypotheses, we used the so-called "judge paradigm" (Jellison & Green, 1981; Dubois, 1988). This paradigm has been widely used to study the value of

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psychological constructs. For instance, it has been successfully used to investigate the social value of the preference for consistency (Channouf & Mangard, 1997; Sénémeaud, Mange, Gouger, Testé, & Somat, 2011), of intrinsic motivation (Cassignol-Bertrand, Baldet, Louche, & Papet, 2006), of the belief in a just world (Alves & Correia, 2010), of individualism and collectivism (Dubois & Beauvois, 2005; Green, 2006), of achievement goals (Darnon et al., 2009), and of organizational citizenship behavior (Esnard & Jouffre, 2008). In one of the versions of this paradigm, participants are invited to evaluate several targets who vary in their endorsement of the investigated trait (see Cambon, Djouari, & Beauvois, 2006). In our research, we presented three profiles of three alleged previous participants (namely, a bogus attitude questionnaire supposedly filled in by the target), presenting a target with a positive attitude, one who holds a negative attitude and one displaying ambivalence. Participants were required to judge each profile on both social desirability and social utility.

Our two hypotheses will be tested on different attitude objects (Experiments 1 to 4). More precisely, Experiments 1 and 2 will test Hypothesis 1 on controversial attitude objects (immigration and death penalty), and Experiments 3 and 4 will test Hypothesis 2 on non-controversial attitude objects (organic products and recycling). The level of controversy of these attitude objects has been assessed in a pilot study with a sample of Swiss students comparable to that of the main experiments. Furthermore, an analysis of the literature revealed which, of the positive or the negative attitudes, are pro or counter-normative, which may be evident for consensual issues, but needs to be studied for controversial issues. As far as controversial issues are concerned, it has been found that, although this issue is recognized as controversial, Swiss citizens are on average in favor of new immigration and hence, tend to hold a positive attitude towards it (Meuleman, Davidov, & Billiet, 2009). Moreover, like most Europeans, Swiss citizens predominantly reported to hold a negative attitude toward death penalty (Unnever, 2010). As far as consensual issues are concerned, several papers convincingly highlighted the social normativeness of holding a positive attitude towards recycling and pro-environmental behaviors (e.g. Turaga, Howarth, & Borsuk, 2010; Schwab, Harton, & Cullum, 2013). This effect was also observed on organic products (Aertsens, Verbeke, Mondelaers, & Van Huylenbroeck, 2009), where most consumers were shown to hold a positive attitude (Saba & Messina, 2003; Kihlberg & Risvik, 2007).

#### **Pilot Study**

We conducted a pilot study to ascertain that immigration and death penalty are indeed considered as controversial issues and that organic products and recycling are considered as

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non-controversial issues by a sample comparable to the participants recruited in the main experiments.

**Participants and Method.** A hundred and twenty-one students of a medium-size Swiss university volunteered in this pilot study ran on the Internet with LimeSurvey. Among several other attitude objects, participants were asked to indicate their perception of controversy or consensus toward immigration, death penalty, organic products, and recycling. More precisely, they were asked to fill in three 7-point bipolar scales devised for this pilot study, for each attitude object. The first bipolar scale ranged from *consensus* (1) to *controversy* (7), the second from *no debate* (1) to *debate* (7), and the third from *a mutual agreement* (1) to *a polemic disagreement* (7). The Cronbach's alphas were comprised between  $\alpha = .75$  (for immigration) and  $\alpha = .90$  (for death penalty); therefore, we averaged the answers provided on the three items for each attitude object and considered it as our dependent variables. The range of the scale varies from 1 (*perception of consensus*) to 7 (*perception of controversy*).

**Results and Discussion.** To test whether these attitude objects should be perceived as controversial or as consensual, we conducted t-test analyses against the mid-point of the scale (i.e. 4). The analyses revealed that immigration and death penalty were evaluated as being controversial. We respectively obtained ( $M = 5.92$ ,  $SD = .90$ ),  $t(120) = 23.52$ ,  $p < .001$ ,  $\eta_p^2 = .82$  for immigration and ( $M = 4.38$ ,  $SD = 1.88$ ),  $t(120) = 2.20$ ,  $p = .030$ ,  $\eta_p^2 = .03$  for death penalty. Moreover, organic products and recycling were evaluated as consensual. We respectively obtained ( $M = 3.26$ ,  $SD = 1.22$ ),  $t(120) = -6.69$ ,  $p < .001$ ,  $\eta_p^2 = .27$  for organic products and ( $M = 3.20$ ,  $SD = 1.65$ ),  $t(120) = -5.31$ ,  $p < .001$ ,  $\eta_p^2 = .19$  for recycling.

## Experiment 1

### Method

**Participants and design.** This web-based experiment was run on LimeSurvey. The students of a medium-size Swiss university have been solicited to participate in the experiment as part of psychology tutorials. Fifty-two participants (34 females, 18 males) filled in the questionnaire; their mean age was 22.06 years ( $SD = 2.91$ ). Preliminary analyses revealed that sex and age had no impact on the studied effects, all  $ps > .1$ . The type of attitude profiles was set as within-participants variable, with a random presentation order: Participants had to evaluate three alleged previous participants with a positive attitude, a negative attitude and an ambivalent attitude toward the same attitude object. No effect of the order was

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observed on the evaluations, all  $ps > .1$ . Therefore, order of presentation has not been included in the reported analyses, as for age and sex. This is true for all the other experiments and this information will not be repeated.

**Procedure and materials.** The experiment was introduced as the follow-up of a previous study about attitudes. In this bogus study, participants were allegedly asked to fill eight items to assess their attitude toward immigration using 7-point Likert scales (from 1 = *not at all* to 7 = *very much*). In fact, the experimenter had filled out the questionnaire in advance and generated three specific profiles of participants. A first profile displayed a univalent positive attitude toward immigration (positive condition) by always circling either 6 or 7. A second profile reported a univalent negative attitude (negative condition) by only circling 1 or 2. The third profile presented an ambivalent attitude by agreeing on four of the items (circling 6 or 7) and disagreeing on the four others (circling 1 or 2). This profile constitutes the ambivalent condition.

Participants were asked to report their evaluation of each profile on the basis of the answers provided (i.e. as a function of the profile). To do so, 8 traits were presented: four measured social desirability (nice, likable, appreciable and pleasant) and 4 other assessed social utility (competent, smart, gifted and likely to succeed academically), using the same materials as Dompnier, Darnon, Delmas and Butera (2008). Evaluations were made on a 7-points Likert scale ranging from 1 (*not at all*) to 7 (*very much*) for each of these traits. The Cronbach's alpha for social desirability ranged from .96 to .98, depending on the profile; alphas varied between .94 and .97 for social utility. Therefore, we averaged the four traits for each dimension and used them as dependent variables.

### **Results and Discussion.**

Since immigration has been shown in the Pilot Study to be a controversial attitude object, we hypothesized on the one hand that the ambivalent profile should be rated the highest on social utility in comparison with the two other profiles (H1a). On the other hand, given that on average Swiss individuals are open to new immigration (Meuleman et al., 2009), we hypothesized that we should observe a decreasing linear trend on social desirability from the positive to the ambivalent and to the negative profiles (H1b).

**Social utility.** To test our hypothesis 1a, we designed a within-participant planned contrast whereby the score in the ambivalent condition (2) has been tested against both the score in the positive (-1) and in the negative condition (-1). Moreover, the score in the positive condition (1) was tested against the score in the negative condition (-1) in an orthogonal contrast; the score in the ambivalence condition was set as 0. The proper use of

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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).

The test of this planned contrast reached significance,  $F(1, 51) = 4.93, p = .031, \eta^2_p = .08$ . In comparison with both the positive ( $M = 4.00$ ) and the negative ( $M = 3.75$ ), the ambivalent profile ( $M = 4.31$ ) was evaluated as significantly higher in social utility. The orthogonal contrast was not significant,  $F < 1$ .

**Social desirability.** To test our hypothesis 1b on this dimension, we designed a within-participant planned contrast whereby the score in the positive condition (1) has been tested against the score in the negative condition (-1), the score in the ambivalent condition was set as 0 in order to test the expected linear relation. Moreover, the score in the ambivalence condition (2) was tested against the score in the negative (-1) and in the positive condition (-1) in an orthogonal contrast.

The test of our planned linear contrast yielded a significant effect on social desirability,  $F(1, 51) = 12.44, p < .001, \eta^2_p = .19$ . Being in favor of immigration was rated as more desirable ( $M = 4.40$ ) than being ambivalent ( $M = 4.10$ ), than being against immigration ( $M = 3.28$ ). The test of the orthogonal contrast did not reach significance,  $F(1, 51) = 2.43, p > .10$ . These results provide support for our first hypothesis: The ambivalent profile was judged the highest on social utility whereas we observed a linear decrease on social desirability moving from the positive attitude to the negative one (see Figure 1a).

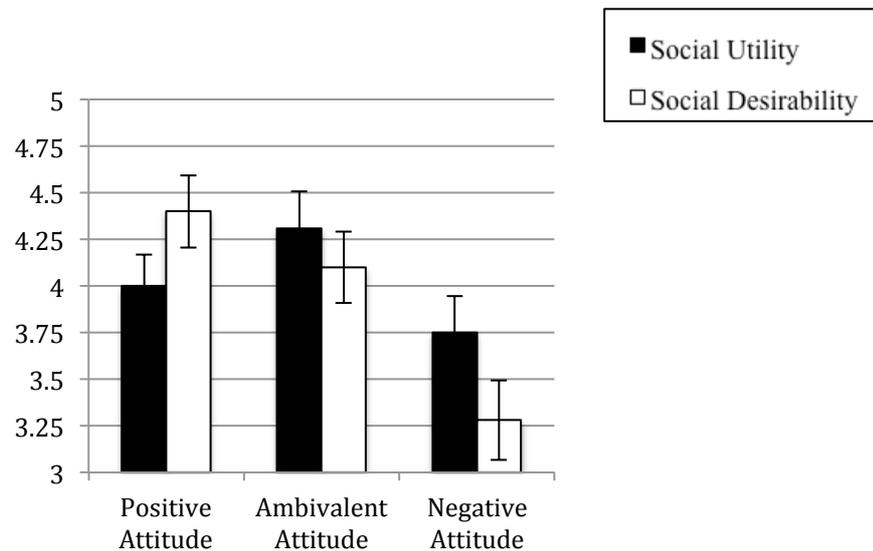


Figure 1a. Social Utility and Social Desirability as a function of the profiles' attitude and the controversy level of the attitude object. Error bars are based on Standard Error of the mean.

## Experiment 2

### Method

**Participants and design.** This web-based experiment was run on LimeSurvey, and tested the same hypotheses as Experiment 1. Participants have been solicited to contribute in an experiment about death penalty—again a controversial issue according to the pilot study—through social network websites. Sixty-nine participants filled in the questionnaire; their mean age was 23.96 years ( $SD = 6.55$ ). The design was identical to that of Experiment 1. Four participants have been dropped from the analysis because of too large a Cook's distance (Hutcheson & Sofroniou, 1999). The final sample consisted of 45 females and 20 males; their mean age was 24.08 years ( $SD = 6.72$ ).

**Procedure and materials.** The experiment was introduced as a study about attitudes toward death penalty. The same procedure was used as for Experiment 1, that is to judge three alleged participants of a previous study. A profile displaying a positive attitude, an ambivalent attitude and a negative attitude were presented in a random order to the participants who had to evaluate each profile with the same four social desirability and four social utility traits as before. The Cronbach's alphas for social desirability ranged from .95 to .97 depending on the profile; alphas varied between .92 and .95 for social utility. Therefore, we averaged the four traits for each dimension and considered these variables as our main dependent variables.

### Results and Discussion.

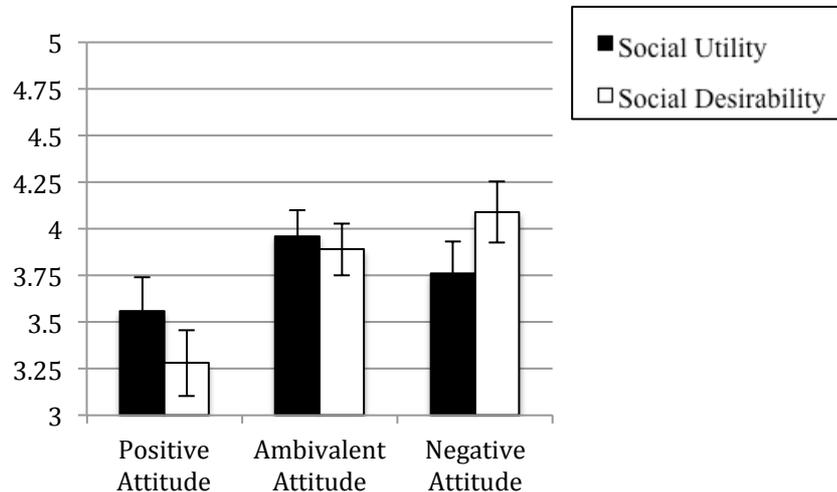
Since death penalty has been shown in the Pilot Study to be a controversial attitude object, we hypothesized on the one hand that the ambivalent profile should be rated the highest on social utility in comparison with the two other profiles (H1a). On the other hand, given that most Swiss individuals are against death penalty (Unnever, 2010), we hypothesized that we should observe a decreasing linear trend on social desirability across the positive, the ambivalent and the negative profiles.

**Social utility.** The score in the ambivalent condition (2) has been tested against both the score in the positive (-1) and in the negative condition (-1). The test of this planned contrast (H1a) yielded a significant effect,  $F(1, 64) = 4.74, p = .033, \eta^2_p = .06$ . In comparison with both the positive ( $M = 3.56$ ) and the negative ( $M = 3.76$ ), the ambivalent profile ( $M = 3.96$ ) was evaluated the highest on social utility. The evaluation of the positive profile and the negative profile, the orthogonal contrast, did not differ significantly,  $F < 1$ .

**Social desirability.** The test of a linear contrast (H1b) yielded a significant effect on social desirability,  $F(1, 64) = 8.33, p = .005, \eta^2_p = .11$ . Being against death penalty was rated as more desirable ( $M = 4.09$ ) in comparison with being ambivalent ( $M = 3.89$ ) or favorable

### 3- Empirical Part: Second Research Line

( $M = 3.28$ ). The test of the orthogonal contrast did not reach significance,  $F(1, 68) = 2.65, p > .10$ . These results provide support for our first hypothesis with a different controversial attitude object: The ambivalent profile was again judged the highest on social utility whereas we observed a linear decrease on desirability moving from the negative attitude to the positive one (see Figure 1b).



*Figure 1b.* Social Utility and Social Desirability as a function of the profiles' attitude and the controversy level of the attitude object. Error bars are based on Standard Error of the mean.

## Experiment 3

### Method

**Participants and design.** This web-based experiment was run on LimeSurvey, to test Hypothesis 2. This time participants have been solicited to contribute, through social network websites, to an experiment about organic products, a non-controversial attitude object. Thirty-five participants (28 females, 7 males) filled in the questionnaire; their mean age was 29.49 years ( $SD = 16.38$ ).

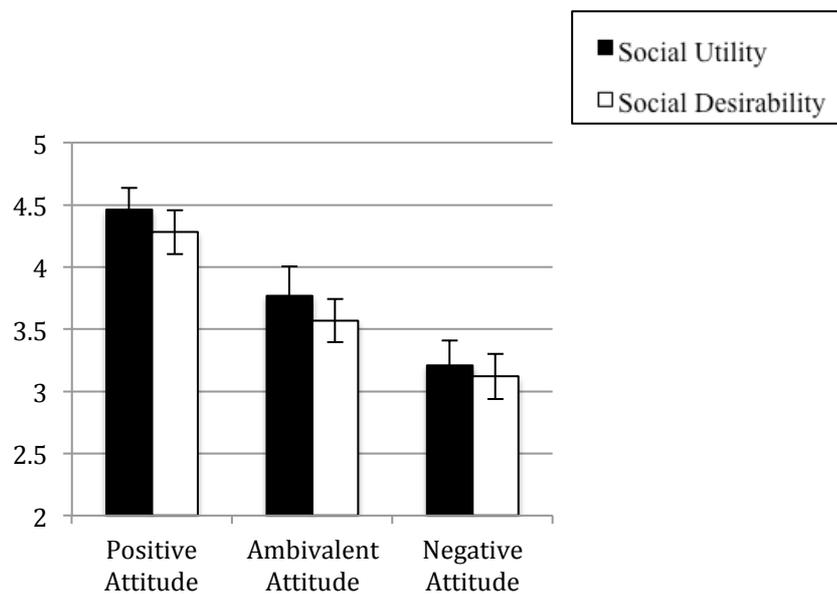
**Procedure and materials.** The experiment was introduced as a study about attitudes toward organic products. The same procedure was used as for previous experiments; a profile displaying a positive attitude, an ambivalent attitude and a negative attitude were presented in random order to the participants who had to evaluate each profile with the same four social desirability and four social utility traits as before. The Cronbach's alpha for social desirability ranged from .96 to .98, depending on the profile; alphas varied between .89 and .97 for social utility.

### Results and Discussion.

**Social utility.** In Hypothesis 2, we predicted that for a non-controversial attitude objects we should observe a linear trend on both social utility and social desirability. Consequently, the score of social utility should be the highest for the positive profile—a positive attitude toward organic products is pro-normative (Aertsens et al., 2009)—and the lowest for the negative profile, with the ambivalent profile in the middle. Contrast analyses revealed that the linear contrast was indeed significant,  $F(1, 34) = 31.93, p < .001, \eta^2_p = .48$ . Participants evaluated the positive profile the highest ( $M = 4.46$ ), followed by the ambivalent profile ( $M = 3.77$ ), and the negative profile ( $M = 3.21$ ). The orthogonal contrast did not reach significance,  $F < 1$ .

**Social desirability.** The test of a linear contrast yielded a significant effect,  $F(1, 34) = 22.68, p < .001, \eta^2_p = .40$ . Being in favor of organic products was judged as being more desirable ( $M = 4.28$ ) in comparison with an ambivalent ( $M = 3.57$ ) and a negative profile ( $M = 3.12$ ). The orthogonal contrast did not reach significance,  $F < 1$ .

As predicted by Hypotheses 2a and 2b, the positive profile was rated the highest on both social desirability and social utility, followed by the ambivalent and the negative profiles (see Figure 1c).



*Figure 1c.* Social Utility and Social Desirability as a function of the profiles' attitude and the controversy level of the attitude object. Error bars are based on Standard Error of the mean.

## Experiment 4

### Method

**Participants and design.** This web-based experiment was run on LimeSurvey, again to test Hypothesis 2. This time participants have been solicited to contribute, through social network websites, to an experiment about recycling, a non-controversial attitude object. Fifty-one participants (38 females, 13 males) filled in the questionnaire; their mean age was 25.39 years ( $SD = 10.08$ ).

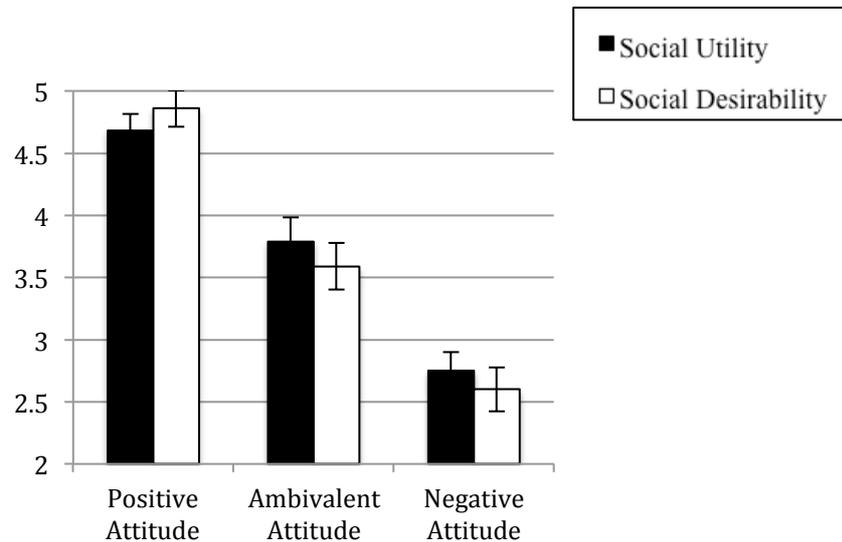
**Procedure and materials.** The participants were told that we were conducting a study about attitudes toward recycling. The same procedure was used as for previous experiments; three profiles displaying a positive attitude, an ambivalent attitude and a negative attitude were presented in a random order to the participants who had to evaluate each profile with the same four social desirability and four social utility traits as before. The Cronbach's alpha for social desirability ranged from .92 to .96, depending on the profile; alphas varied between .83 and .82 for social utility. Therefore, we calculated the mean of the four traits for each dimension, and used them as our dependent variables.

### Results and Discussion.

**Social utility.** We hypothesized a linear trend on both social utility and social desirability, as recycling appeared as non-controversial in the Pilot Study, with the positive attitude being the most positively evaluated since social norms encourage pro-environmental behaviors (Turaga et al., 2010; Schwab et al., 2013). The test of a linear contrast yielded a significant effect,  $F(1, 50) = 67.04, p < .001, \eta^2_p = .57$ . Being in favor of recycling was judged as more useful ( $M = 4.68$ ) in comparison with an ambivalent profile ( $M = 3.79$ ), which in turn was judged more useful than a negative profile ( $M = 2.75$ ). The orthogonal contrast was not significant,  $F < 1$ .

**Social desirability.** The test of a linear contrast yielded a significant effect,  $F(1, 50) = 64.23, p < .001, \eta^2_p = .56$ . The profile presenting a positive attitude was evaluated more desirable ( $M = 4.86$ ) than the ambivalent profile ( $M = 3.59$ ), which in turn was evaluated more desirable than the negative profile ( $M = 2.61$ ). The orthogonal contrast did not reach significance,  $F < 1$ . As for organic products, the positive pro-normative profile was rated the highest on both social utility and social desirability, followed by the ambivalent and the negative profile (see Figure 1d).

### 3- Empirical Part: Second Research Line



*Figure 1d.* Social Utility and Social Desirability as a function of the profiles' attitude and the controversy level of the attitude object. Error bars are based on Standard Error of the mean.

### General Discussion

The vast majority of research on attitudes to date considers that attitudinal ambivalence is a weak form of attitude and an aversive state; in other words, a form of attitude that should not be valued by individuals. However, some recent research has shown that individuals may express attitudinal ambivalence to achieve a positive image of themselves, when the issue is controversial (Pillaud et al., 2013). Therefore, the present research was designed to provide an answer to this riddle, and investigate the social perception of ambivalence. Two elements make this research necessary. First, the fact that individuals display ambivalence in the attempt to achieve positive self-presentation (Pillaud et al., 2013), although interesting in and of itself, does not imply that such attempt is successful and that the display of ambivalent attitudes is indeed socially valued by an observer (Beauvois & Dubois, 2005). Second, we have noted above that, although some theoretical analyses have suggested that ambivalence may be valued, no research so far has provided empirical evidence that this may be the case, nor investigated why expressing attitudinal ambivalence may generate a positive image in observers. We devised this research program to overcome this gap in the literature.

In this article, we proposed that ambivalence could fill a specific function when being expressed on controversial issues: that of signaling competence. This reasoning has been rooted on several studies that linked ambivalence and a wide array of cognitions, such for instance critical thinking and wisdom (Piderit, 2000; Weick, 1998, 2004), amount of knowledge (Stoeckel, 2013), and strategic thinking (Plambeck & Weber, 2010). Furthermore,

### 3- Empirical Part: Second Research Line

ambivalence has been shown to achieve some adaptive function. Indeed, ambivalent attitudes were discussed as providing equilibrium in complex situations (Costarelli, 2011; Pagliaro et al., 2012), and allowing individuals to resist majority influence (Cavazza & Butera, 2008). Thus, we hypothesized that on controversial issues individuals expressing ambivalent attitudes could be valued on social utility, as compared with individuals expressing univalent attitudes.

More specifically, we hypothesized that an individual expressing ambivalent attitudes on controversial attitude objects should be judged higher on social utility in comparison with an individual expressing univalent attitudes, be them pro-normative or counter-normative, as ambivalence could be perceived as the expression of critical thinking (Hypothesis 1a). We consequently predicted that the benefit of the display of ambivalent attitudes should not be observed on social desirability. We indeed hypothesized that pro-normative attitudes should be preferred to them and expected to observe a decreasing linear effect from the pro-normative to the ambivalent attitude, the counter-normative attitude being the less desirable (Hypothesis 1b). Because consensual attitude objects imply a strong consensus on what the expressed response should be (Pérez & Mugny, 1996), we hypothesized that the pro-normative attitude should be rated the best on both social utility and social desirability. Hence, we predicted that they should be evaluated as more useful than the ambivalent one, which should in turn be evaluated as more useful than the counter-normative one on consensual attitude objects (Hypothesis 2a). The same trend was expected for social desirability (Hypothesis 2b).

Results supported both hypotheses. On controversial attitude objects, namely both immigration and death penalty (Experiments 1 and 2), we observed that ambivalence was significantly evaluated the highest on social utility when compared to univalent positive and univalent negative attitudes, in line with Hypothesis 1a. However, in line with Hypothesis 1b, we observed a linear decrease going from the pro-normative attitude, to the ambivalent one and finally to the counter-normative one, on both immigration and death penalty <sup>a</sup>. The pattern of result was different on consensual attitude objects, namely organic products and recycling (Experiments 3 and 4). We found the expected linear trend on both social utility and social desirability, whereby the univalent positive attitude (in both cases the pro-normative attitude) was rated higher than ambivalent attitudes, which in turn was evaluated higher than univalent negative attitude.

These results contribute to the recent literature on attitudinal ambivalence by providing for the first time the evidence that the expression of ambivalent attitudes could be socially

### 3- Empirical Part: Second Research Line

valued by an observer, while providing insight as per the mechanism responsible for this attribution of value. The present results, indeed, reveal that the expression of attitudinal ambivalence is recognized as competence (i.e. more socially useful) when it is expressed on a controversial attitude object. It has recently been reported that individuals could display more ambivalence on controversial issues with the aim to gain social approval (Pillaud et al., 2013); the present research complements these findings by showing that indeed, by doing so, individuals are evaluated as more competent than individuals displaying univalent attitudes (both pro- and anti normative ones).

In fact, our results allow going a step further as they show that ambivalence may indeed be perceived as bearing some social value, to the extent that it can be interpreted as a form of competence, as it is the case for attitudes regarding controversial issues. Such results are directly in line with, and provide the lacking empirical evidence for, the literature that portrayed ambivalence as being linked with wisdom, mindfulness and knowledge: By acknowledging both sides of controversial attitude objects, the expression of ambivalence is recognized as competence. They also may help in interpreting the results of Costarelli (2011) and Brauer, Er-rafiy, Kawakami and Phills (2012), who showed that the expression of ambivalence or mixed messages is considered as the most balanced, realistic and acceptable when being expressed toward out-groups: As attitude expression toward out-groups is quite complex, mixed attitudes could then have been perceived as the most competent solution.

The above reasoning is sustained by the result that ambivalent attitudes have been valued on social utility only when they were expressed on controversial issues: when consensual issues were at stake, pro-normative attitudes were preferred over ambivalent and anti-normative attitudes. Such results could contribute to understand why, in the history of research on attitudes, ambivalence has mainly been studied as something negative. First, if ambivalent attitudes are quite prevalent (Breckler, 2004), controversies around attitude objects are quite rare: although the media may depict many of the daily reported issues as controversial for marketing reasons, most people strive for holding consensual positions, to such an extent that Moscovici and Faucheux (1972) have termed this tendency a “conformity bias”. We thus believe that in most cases, ambivalent individuals could feel a social pressure that would push them to pick a side. It has been argued by Laponce (1974) that we tend to dichotomize the world and then to view its parts as being opposed. Because ambivalence is associated with inconsistencies and fluctuations (see Lavine, 2001; Fabrigar, MacDonald, & Wegener, 2005) and because consistency is valued (for a review see Guadagno & Cialdini, 2010), ambivalence can therefore be seen as "abnormal" when it is held on consensual issues.

### 3- Empirical Part: Second Research Line

Consequently, ambivalent individuals could be motivated not to present themselves as ambivalent, and therefore be more likely to express univalent attitudes.

Such reasoning can also provide a better understanding of why ambivalent individuals can indeed feel conflicted. If we acknowledge that decision-making situations could generate discomfort in themselves (as sustained by van Harreveld et al., 2009), discomfort could also stem in part from social considerations. In line with the above argument, ambivalent individuals could see themselves as deviant individuals on consensual issues, and decision-making situations could highlight this feeling (Janis, 1972). Future research should consequently address this question by assessing discomfort of ambivalent individuals in decision-making situations by taking the level of controversy of the attitude object into account. It seems plausible to expect that individuals should experience more discomfort when they perceived a strong consensus on the attitude to be expressed, but less so when the attitude object is perceived as controversial.

A limitation needs to be mentioned as it could open avenue for new research. In this article, we used different attitude objects, chosen after a pilot study that revealed their different level of controversy; however, future research could aim at manipulating the perception of controversy within the same attitude object, as in Pillaud et al. (2013). Furthermore, it would be interesting to pursue the present research with a longitudinal perspective, to study how the perception of ambivalence could fluctuate as a consequence of controversies. For instance, it would be interesting to focus on political figures or on social issues (such as gay marriage or gun control) that are more or less controversial at different times. The study of such phenomena could represent a dynamic approach to the study of the perception of ambivalence.

Notwithstanding these limitations, the present results bring convergent and robust support to a view of attitudinal ambivalence as useful attitudes. When being expressed on controversial issues, ambivalent attitudes were recognized as signaling competence over and above univalent attitudes. After more than two decades of research that mainly focused on its weaknesses and negative consequences, the present research might open the way to the functional study of attitudinal ambivalence.

#### <sup>a</sup> Footnote

Two further experiments, not reported in full here because of their redundancy, perfectly replicated the findings of experiments 1 and 2. Forty participants participated in an experiment about repeating school years, and a hundred participants in another experiment about having children, two controversial attitude objects. Performing the same contrast analyses as in Experiments 1 and 2, results showed that participants judged the ambivalent profile as higher on social utility than the univalent profiles in both studies, respectively  $F(1, 39) = 4.67, p = .037, \eta_p^2 = .10$  for repeating school years, and  $F(1, 99) = 11.26, p = .01, \eta_p^2 = .09$  for having children. The orthogonal contrasts were not significant, all  $ps > .10$ . As for social desirability, the linear trend was also replicated, with the univalent pro-normative profile being evaluated higher on social desirability than the ambivalent profile, in turn higher than the univalent anti-normative profile,  $F(1, 39) = 9.99, p = .003, \eta_p^2 = .20$  for repeating school years, and  $F(1, 99) = 139.38, p < .001, \eta_p^2 = .58$  for having children. The orthogonal contrasts were not significant, all  $ps > .10$ . For additional information, please contact the authors.

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## **4. GENERAL DISCUSSION**

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## 4- General Discussion

In this final part, we will begin by reviewing the results of our two research lines and discussing their relative contribution to the literature on ambivalence. We will then evoke their limitations, and finally elaborate on the implications of the work conducted in this dissertation.

### **1. Ambivalent attitudes are useful attitudes**

#### **1.1 Highlights of the results**

In this dissertation, we proposed to view ambivalent attitudes as useful attitudes. We inspired our reflection from recent studies that depicted such attitudes as potentially linked to adaptation and strategic behaviors. This work has been conducted in order to emphasize the fact that ambivalence attitudes could not only lead to negative consequences as well as to define some of the circumstances where they could be beneficial. Indeed, right before the beginning of this doctoral work, Cavazza & Butera (2008) challenged the dominant position that conceived ambivalent attitudes as unstable and weak attitudes (see Conner & Sparks, 2002), by pointing out that ambivalent individuals could adapt to influence situation. We took up from this research in order to investigate if, as hypothesized, the level of ambivalence can be purposely controlled and displayed as a function of the situation. We also aimed at reporting that such shift in the attitude expression was done for self-presentational reasons and that ambivalence was more likely to be expressed when it concerns a controversial social issue in comparison with a consensual one. Seven Experiments have been reported in this first research line.

Experiment 1 was run on the Internet on a controversial issue (e.g. Genetically Modified Organisms; GMOs). Experiment 1a assessed Felt ambivalence whereas Experiment 1b assessed Potential ambivalence in both its cognitive and affective components. All two Experiments convincingly supported our hypotheses. Regardless of the type of ambivalence, participants displayed more ambivalence in both the standard and the self-enhancement condition in comparison with the self-depreciation condition. The level of ambivalence in standard and self-enhancement condition was not significantly different. Thus, this first Experiment provided support for our hypothesis according to which individuals could be strategically controlling their level of ambivalence as a function of the situation (as the level of ambivalence varied as a function of the self-presentation condition). It also pointed out that such control was done for self-presentational concerns. Indeed, individuals reported a similar level of ambivalence in the standard and self-enhancement conditions, but less so in the self-depreciation condition.

#### 4- General Discussion

Experiment 2 aimed at replicating these results using a paper-and-pencil paradigm, as we were concerned about the possibility that our results of Experiment 1 could have been method dependent. Experiment 2 led to the same results as Experiment 1. Again, more ambivalence toward GMOs was reported in both the standard and the self-enhancement condition in comparison with the self-depreciation one. The level of ambivalence did not significantly differ between these two first conditions. This was found using Felt ambivalence (Experiment 2a) as well as using Potential ambivalence in its cognitive component (Experiment 2b) and in its affective component (Experiment 2c). Hence, our results have not been affected by the assessment method. We did find the same results when the Experiment was set in a web-based or in a paper-and-pencil format. The current literature seems to go in line with this observation: web-based studies and paper-and-pencil studies can be used indifferently (see Huang, 2006; Weigold, Weigold, & Russell, 2013 for the most recent paper on the issue).

Experiment 3 was designed for the test of the hypothesis that displaying ambivalence could be done to appear positively on controversial issues whereas the opposite was expected on consensual ones. Experiment 3 was consequently run on a consensual issue (e.g. tooth brushing). We replicated the fact that individuals were able to intentionally display a different level of ambivalence in the self-depreciation condition in comparison with the standard and self-enhancement condition but of interest, they displayed more ambivalence in the self-depreciation condition. Because of the strong consensus on this attitude object, people reported to be doubtful in order to appear negatively. Hence, this Experiment clearly supported our hypothesis according to which displaying ambivalence on consensual issues is less likely to be done to foster a positive image of oneself. However, despite this convincing evidence, the difference in the observed patterns could be attributable to another variable than controversy. We designed Experiment 4 to address this question.

Experiment 4 was again run on GMOs but in addition to the usual three self-presentation conditions, we directly manipulated the level of controversy. In one condition, GMOs were introduced as a consensual issue, in that most Swiss allegedly hold a consensual negative attitude (89% were presented as being against GMOs and 11% in favor). In a second condition, GMOs were introduced as a controversial social issue where nearly the half of the Swiss was said to hold a positive attitude (49% of the population) and the other half a negative one (51% of the population). Our results supported the central role of controversy in the direction of the effect: participants displayed more ambivalence in both the standard and self-enhancement conditions than in the self-depreciation condition when GMOs were

#### 4- General Discussion

introduced as being controversial whereas they displayed less ambivalence in both the standard and self-enhancement conditions in comparison with the self-depreciation condition when GMOs were introduced as being a consensual issue. This first line of research demonstrated that ambivalent attitudes could be strategically displayed and controlled, as well as identified one of the possible factors that drive the effect. Indeed, the level of controversy associated with the attitude object significantly affected the pattern of result: people displayed ambivalence in order to gain social approval on controversial issues whereas the exact reverse was found on consensual issues.

The second line of research has been devised in response to this first line of research. We repeatedly observed that individuals were displaying more ambivalence to give a positive image of themselves on Genetically Modified Organisms. This suggested that ambivalence was used to appear as positive in the eyes of others. In response to that, we decided to investigate if such strategy was effective, and if ambivalent individuals could be socially valued when they display ambivalence. We proposed that ambivalence could suggest that people are knowledgeable on the issue, and thus that they are displaying their competence when they display ambivalent attitudes. We consequently ran four Experiments in order to test if, as predicted, ambivalent individuals could be evaluated higher on social utility than individuals who hold clear-cut attitudes.

Experiment 1 focused on attitudes toward immigration (a controversial social issue). Our results supported our hypotheses according to which (1) an individual displaying an ambivalent attitude should be rated the highest on social utility (competence) in comparison with individuals holding more clear-cut attitudes, and (2) we should observe a decreasing linear trend on social desirability moving from the pro-normative positive attitude to the counter-normative negative attitude (ambivalent attitudes being in the middle). Experiment 2 replicated the results of Experiment 1 with another controversial social issue (death penalty).

Experiment 3 tested the other side of our hypothesis as it focused on a consensual social issue (organic products). Contrary to Experiments 1 and 2, we found a decreasing linear trend on social utility as well as on social desirability, moving from the pro-normative positive attitude to the counter-normative negative attitude (ambivalent attitude being in the middle). Experiment 4 replicated the findings of Experiment 4 on recycling, another consensual social issue.

This second line of research revealed the potential efficiency of the strategic expression of ambivalent attitudes that has been observed in the first research line. Indeed, we previously pointed out that individuals tended to display more ambivalence on controversial

#### 4- General Discussion

issues when trying to gain social approval, and here we reported that, indeed, such behavior was socially well perceived. Ambivalent attitudes have been valued on the social utility dimension to the extent that they were displayed on a controversial attitude object. Indeed, pro-normative attitudes have been rated the highest when being expressed on a consensual attitude object, and so on both social utility and social desirability. Hence, the perception of ambivalence seems to be contextual: on the one hand, it seems to be mainly negative on consensual issues since pro-normative attitudes are preferred to them, but on the other hand, individuals acknowledged that the expression of ambivalent attitudes could represent competence on controversial issues and hence, they favored ambivalence in comparison with more clear-cut attitudes. In sum, the expression of ambivalence can be valued when criticism is possible (i.e. when there is no strong consensus on an issue).

#### **1.2 Concluding and extending**

We believe that these two lines of research convincingly demonstrated that ambivalent attitudes could be considered as useful attitudes, and hence that the negative picture widespread in the literature is unwarranted.

The first research line revealed that such attitudes could be deliberately controlled and used for self-presentation concerns; in other terms that ambivalent attitudes could be adaptive. To our knowledge, displaying more ambivalence in order to gain social approval has never been observed in previous research. Indeed, research on the pliability of ambivalent attitudes actually always observed less ambivalence as a result of an influence situation (see Conner & Sparks, 2002; Conner & Armitage, 2008 for reviews). Here we found a situation in which people purposely displayed more ambivalence as a result. We believe that historical reasons could explain why such an effect has not been previously researched and illustrated. If it is possible to notice that the function of ambivalent attitudes, as well as the motivational conflicts underlying its expression, have been questioned (Maio & Olson, 2000; Crano & Prislin, 2006), we would like to bring attention to the fact that both aspects could have been investigated in a biased way. Indeed, research on the pliability of the ambivalent attitudes almost exclusively conceived the expected pliability as an indicator of its weakness in comparison with clear-cut attitudes (see Hodson et al., 2001 for instance); hence, it is not surprising to notice that the experimental plans were designed in order to reveal such weakness and, apart from Cavazza and Butera (2008), to only highlight the cases where highly ambivalent individuals could be affected when low-ambivalent individuals could resist. Situations where highly ambivalent individuals could also resist have consequently

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been left aside. In most studies, ambivalent individuals have been considered as willing to arrive at conclusion, and hence they failed to focus on situations where its expression could be adaptive and socially well perceived (see Laponce, 1975, for a discussion of this type of research bias). The first research line of this dissertation addressed this aspect by revealing that the pliability of ambivalent attitudes could be useful for self-presentational concerns.

The second line of research revealed the efficiency of this behavior: people who displayed ambivalence have indeed been rated higher on social utility than people holding more clear-cut attitudes on controversial issues. This line of research contributes to the literature on ambivalence by several aspects. First, to our knowledge, no research had investigated the social perception of ambivalence before. Even if ambivalent attitudes were repeatedly presented with a negative connotation in the literature (as detailed in the sections 2.1 and 2.2.1), they hitherto have never been subject to direct comparison with univalent attitudes. This line of research revealed that ambivalent attitudes could be socially valued and recognized as competence. This finding could be seen as contradictory with most research on ambivalence in Social Psychology as ambivalent attitudes have been commonly linked with hesitation (Mutz, 2002; Jewell, 2003) and conceived as inconsistencies (Newby-Clark et al, 2002; Fabrigar, MacDonald, & Wegener, 2005). As a reminder, consistency has traditionally been described as normative and hence, as strongly socially valued (see Cialdini et al., 1995; Channouf & Mangard, 1997, and part 2.2.1 for more details). We believe, however, that our results could be compatible with this work in spite of this apparent contradiction. More precisely, it seems possible to merge the above-mentioned literature with the literature that viewed ambivalence as indicating mindfulness and reflection: the expression of ambivalence could be fostered and well perceived when people deal with a complex and evolving attitude object (such as companies for instance; see Piderit, 2000, or Fiol & O'Connor, 2003) whereas this could be less the case when people deal with more consensual attitude objects (e.g. recycling or physical training; see Costarelli & Colloca, 2003, or Sparks, Harris, & Lockwood, 2004). Ambivalence could thus be perceived as accounting for the understanding of the complexity of controversial issues whereas it could appear as a contradiction when it is expressed on consensual ones. In other terms, the consideration of the level of controversy associated with the attitude object could lead to a better understanding as it allows the inclusion of both approaches.

We believe that our two sets of research could bring to the development of a new approach for the study of attitudinal ambivalence. Indeed, its function has been repeatedly questioned in the literature and this question is quite understandable if people only conceive

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ambivalence as leading the individual to the avoidance of decision-making situations and discomfort. Why would people be ambivalent if this only brings negative consequences for them? In fact, the picture seems to be more complicated than that: with the growth of society and media communication, people are confronted to more and more information as well as more and more choices and decision-making situations, and as a result ambivalence is quite ubiquitous (Weisbrode, 2012). For instance, the political environment can directly affect people's political attitudes and notably their level of ambivalence (Keele & Wolak, 2008). In comparison with more neutral periods, the times of election campaigns have been described as a source of ambivalence in the population. Indeed, during such periods, several political sides are represented and consequently, different points of views on a same issue are salient in people's environment. Ambivalence can stem from such periods of elections (for a similar reasoning; see Stoeckel, 2013). Thus, people could become ambivalent as a result on the abundance of information.

We mentioned in Chapter 1 that the concept of attitudes has been brought to the literature in order to predict behaviors, and hence it is not surprising to notice that most research on ambivalence has been conducted to assess how reliably it could predict behaviors. However, if it appears quite clearly that ambivalent attitudes can torment people in decision-making situations as they either postpone their choice when possible (Lavine et al., 2001; Jewell, 2003; Nir, 2005) or feel discomfort when they have to decide (Nordgren et al., 2006; van Harreveld et al., 2009a, 2009b), ambivalent attitudes could be beneficial in non decision-making situations. Indeed, people do not always have to act or to decide in real life. For instance, it seems plausible to imagine that people could be ambivalent on the question of death penalty even if they live in a country where death penalty is forbidden (such as Switzerland for instance). Thus, they will never have to vote in favor or against death penalty. Their ambivalence could therefore be detrimental if they had to face such situation one day in the future, but as ambivalence seems to be tied up with critical thinking and knowledge, they could also currently know a lot on the subject. Hence, they could be more likely to be wise when they have to express themselves on the subject and help the others to make up their mind.

Therefore, we think that future researches should aim at designing studies that view ambivalence as consequential to critical thinking in order to further highlight its benefits on non decision-making situations (such as the research of Fong that linked ambivalence and creativity for instance; Fong, 2006). We believe that by showing that ambivalence could be controlled and portrayed as a function of the demands of the environment, as well as by

#### 4- General Discussion

showing that people could be socially valued when they express their ambivalence, we contributed in reporting that ambivalence could also be beneficial.

### 2. Critical thoughts

#### 2.1 A quick comment on our samples

Only students of the University of Lausanne composed our sample of participants for the first line of research. Even if we did have students from 14 different disciplines in Experiment 1, most participants were studying Social Sciences and, in a sizable part, Psychology. The second line of research has been conducted on a more various sample. It has included participants who were not students of the University of Lausanne and aimed at obtaining a wider age range. However, these two variables (namely, being a student or not, and age) could be important variables to consider in future studies of ambivalence. We argued in Chapter 2 that it is possible to think that, as university tends to value criticism (Guiller, Durndell, & Ross, 2008), this could indirectly lead to a more positive perception of ambivalence. However, we did not test such hypothesis and to our knowledge, no research has been conducted in order to do so.

Similarly, age has sometimes been mentioned in the literature on ambivalence. However, its effect is unclear. For instance, focusing on the Americans' attitudes toward United States of America, Citrin and Luks (2005) found a negative relation between the age of their participants and their ambivalence toward USA ( $r = -.11$ ). They proposed that this could be due either to the fact that patriotism tends to increase with age or to the fact that people get more interested in politics getting older. Thus, as they know more on the issue, they can more easily pick a side. However, this second possibility goes against the more recent observation of Stoeckel (2013) who found that more knowledge leads to more ambivalence. Williams and Aaker (2002) focused on ambivalent emotions and reported the exact opposite relationship than Citrin and Luks (2005). They predicted that older individuals should have greater propensity to accept contradictions and duality in comparison with comparably educated younger adults. They indeed observed in their Experiment 3 that older participants ( $M_{\text{age}} = 73.2$  years) felt less discomfort when feeling ambivalent than younger ones ( $M_{\text{age}} = 21.1$  years). They proposed that this was due to the fact that older adults tend to engage in more relativistic processing. Such reasoning has also been formulated by Mikulincer (cited in Wang, 2010) as he reported, "*a certain degree of ambivalence is a sign of maturity*". Future research could be carried out in order to better understand the relationship between age, education and ambivalent attitudes.

### **2.2 Comments on the First Research line**

#### ***2.2.1 Ambivalent attitudes and attitude change***

Our first research line originated from research that revealed the greater sensitivity of ambivalent attitudes toward influence, and brought the debate on the function of their shift. We have mentioned that ambivalent attitudes may have an adaptive function in that they help individuals to display a positive image of themselves when expressing their attitudes on a controversial attitude object. However, we have to acknowledge that our set of studies did not provide any information about real attitude change. Indeed, unlike studies on attitude change that include a measure of attitude before and after a message of influence, our studies simply varied the type of impression that participants had to give when expressing themselves (either a good one or a bad one). What would happen with our paradigm if we measured attitude change? We can imagine two cases. If individuals are motivated to appear positively in the eyes of others, they could side with a message of influence that contains only weak arguments. However, if they are motivated to resolve their ambivalence as previously discussed, they should need convincing arguments to be able to pick a side (as reported by Maio et al., 1996 for instance). Future research could tackle this issue by integrating an evaluative component in its paradigm. For instance, it could mirror Maio et al.'s study (1996) on the attitude toward immigrants by adding two experimental conditions. The participants will either report their attitude privately after the message of influence (as it was originally done) or they will have to report it publicly (and thus be appraised by the others). We would hypothesize that, as ambivalent individuals tend to be strategic, they would only side with convincing arguments. However, it is plausible to think that they will do so to a greater extent when expressing publicly in comparison with when they have to do it privately.

#### ***2.2.2 A comment on Experiment 3***

In this Experiment that focused on a consensual attitude object, we observed that people did display a lower level of ambivalence in both the standard and the self-enhancement condition than in the self-depreciation one. Even if this pattern of results supported our hypothesis, this finding could appear quite "logical", as the experiment only considered Felt ambivalence as a dependent variable. In fact, in this measure, people answer a set of questions using traditional 7-point Likert scales (e.g. to what extent do you feel conflicted on...). The items are directed so that a high average score indicates that people feel highly ambivalent whereas a low score indicates the reverse. In other terms, this scale uses a continuum that ranges from 1 (*not at all ambivalent*) to 7 (*extremely ambivalent*). Hence, it could be not

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particularly surprising to observe that when people display an attitude on one side of the continuum to appear positive (e.g. as nearly not at all ambivalent,  $M_{self-enhancement} = 1.64$ ), they display an attitude on the other side of the continuum to appear negative ( $M_{self-depreciation} = 6.11$ ). Experiment 4 has been designed to cope with this problem. Despite this criticism, we believe that the fact that we observed that people indeed shifted their level of ambivalence as a function of the self-presentation conditions on both measures (the above-mentioned measure of felt ambivalence as well as via an open-ended measure) in a similar manner provides a convincing support for our first set of hypotheses.

### 2.3 Comments on the Second Research line

Our second research line focused on the social perception of ambivalent attitudes as a function of the type of the attitude object. If our results seem to be supportive of our hypotheses, one limitation needs to be mentioned; that is, the control of the participants' attitude. Indeed, if it is plausible to think that positive attitude toward immigration are valued in Switzerland (as mentioned in Meuleman et al., 2009) and hence, that most individuals value the expression of a positive attitude toward immigration, we have to acknowledge that political attitudes may moderate this effect. It is indeed very likely that participants who endorse extreme right-wing attitudes would not do so even if those are socially well perceived (see Thomsen, Green & Sidanius, 2009 for instance). The same reasoning can be applied to other attitude objects. Hence, in addition to the consideration of the socially valued attitude in the reported experiments, we should also have integrated the participants' initial attitude in our analyses.

However, if controlling the participants' attitude in the analysis makes perfect sense, the moderation of the evaluation of the profiles' attitude as a function of the participants' attitude should be difficult to find; notably when the attitude object is not socially debated. For instance, we hardly imagine that a representative sample of individuals who hold a strong negative attitude toward recycling or organic products should be easily achievable. The moderation of our reported results by the participants' attitude should consequently either require a lot of participants or to specifically contact different social groups (such as political groups for instance or individuals who tend to value human domination over universalism; see Dreezens et al., 2005). Indeed, we mentioned that social desirability and social norms are positively linked (Gilibert & Cambon, 2003). More precisely, the link between attitudes and the social norms seem to be circular: a majority of individuals hold the type of attitude that is socially valued and an attitude is socially valued because most of the individuals tend to hold

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it. It is thus more likely to find individuals who hold an attitude that is socially valued than individuals who hold a counter-normative one. For this reason, we believe that our results portray the most frequent type of social judgment even if we acknowledge that a small sample of the population could have judged in a reverse way on the social desirability dimension. Lastly, the focal point of our second research line was to highlight the fact that ambivalent attitudes were valued on the social utility dimension; we believe that this should be the case regardless of the participants' initial attitude. Indeed, in this research line we proposed that the cause of the value of ambivalent attitudes over univalent ones would derive from the perception of controversy. Hence, regardless of the individuals' attitude and thus regardless of whether they support or oppose the attitude object, ambivalent attitudes should be valued when they are expressed on an attitude object that is perceived as socially debated and controversial.

### **2.4 A projection of the potential relationships between decision-making, ambivalence and controversy**

Even if we did not plan to work on decision-making situations in this doctoral work, an important amount of research has been devoted to articulating ambivalence with such situations; it seemed therefore interesting to try to link our research with decision-making. Indeed, we intended to highlight that ambivalent attitudes could be functional and perceived as useful in this doctoral dissertation. Notably, our second set of research aimed at investigating if, indeed, ambivalent individuals could be valued and judged as competent on controversial attitudes, and we found evidence that it seemed to be the case that, as far as competence is concerned, the expression of ambivalence was more valued than the expression of more clear-cut attitudes. However, if displaying such attitude could be profitable for the individual, we have to acknowledge that the behavior of ambivalent individuals in a decision-making situation is hardly predictable on controversial issues. In fact, we found no studies that have focused on predicting how ambivalent individuals would pick a side on a controversial issue. However, since older studies can be informative for this reflection, this possible relation will be represented and summarized in the Figure 2 below; we will try to predict what should be likely to be observed in this specific situation. This reflection will be split up in three smaller parts, where we will (1) present the link between controversy and decision-making situations, (2) briefly evoke the link between ambivalence and decision-making situations, and (3) discuss the relationship between ambivalence and controversy. We

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will speak of the case where ambivalent individuals have to take a stand on controversial issues in a final part.

##### ***2.4.1 Controversy and decision-making***

Sapolsky (1968) was interested in understanding the voters' behavior on the referendum about fluoridation in his comprehensive paper. In the 60's, the United States of America started a campaign about fluoridation that was supported by the authorities (such as the Presidents Eisenhower and Kennedy for instance). Fluoridation is "*the addition of a fluoride compound to the public water in order to reduce tooth decay in children*" (p. 427). Fluoridation has repeatedly been discussed for its positive aspects on social health (about 95% of the USA population suffered or had suffered from tooth decay according to the article), as well as for its economic implications (notably by reducing the national dental bill by a half; about \$1.5 billion in 1968). However, this campaign became controversial with the appearance of the "antifluoridationists" who raised arguments against the introduction of fluoride into the public water supply. In fact, they doubted its efficiency on the prevention of tooth decays, raised possible health problems (such as the fact that a too high concentration of fluoride can cause ailments such as fluorosis or even cancers) and viewed this mass medication as going against individual liberty. Despite the evident benefit of such implementation, its public acceptance has been quite low. More precisely, 566 on the 952 held referenda rejected the issue (59.45 %). Sapolsky interpreted this decline as possibly being due to two reasons. The first possible reason could be that most people were not enough knowledgeable to understand the benefits of this campaign. The second point (the most interesting for us) is that people could be concerned about making the wrong choice and hence, they voted against the reform in a self-protective way. Mazur and Conant (1978) also observed that people who had low knowledge about the issue voted no as a consequence of a public controversy (the implementation of a local nuclear waste repository). They summarized this behavior as follow: "*if there is a possibility that it is dangerous, why take the risk?*" (p. 236). Hence, it looks like controversy can easily frighten individuals and, as a consequence, lead them to vote against a reform. In sum, controversy should be a negative predictor of behaviors (relation a in Figure 2).

##### ***2.4.2 Ambivalence and decision-making***

We mentioned some of the numerous studies that were interested in studying the link between ambivalence and decision-making / behavior (see Chapter 2.1.1) and most of them

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also observed a negative relationship. Indeed, nearly all of them found that more ambivalence toward a behavior led to a less extensive adoption of the behavior (relation b in Figure 2). Broëmer (2002) refers to this link as attesting for a "negativity bias". We believe that such bias could be tied the abovementioned argument by Mazur and Conant (1974), and the importance that people attribute to negative aspects. It has indeed been pointed out that "bad is stronger than good" (see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001) and that people are way more cautious of negative events than they are toward positive ones. Hence, when people hesitate between doing something and not doing it, they are more likely to decide not to do it.

##### *2.4.3 Controversy and ambivalence*

The link between controversy and ambivalence has also been briefly discussed in the literature. We reported in the empirical sections that controversies associated with attitude objects enhanced both its expression and its perception. The existence of a direct link between ambivalence and controversies has been recently studied. Stoeckel (2013) observed that elite division around Europe yielded more ambivalence for the citizens. The idea of a link between controversy and ambivalence is also present in 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. Hence, there could be a positive link between controversies and the subsequent level of ambivalence associated with attitude objects (relation c in Figure 2). This reflection is reinforced by the work of Haugtvedt and Wegener (1994), who reported that people tend to process interesting or involving messages (e.g. controversial) more systematically than less interesting or involving ones. However, this link has only been reported once (in Stoeckel, 2013) and consequently it would require more studies to be confirmed.

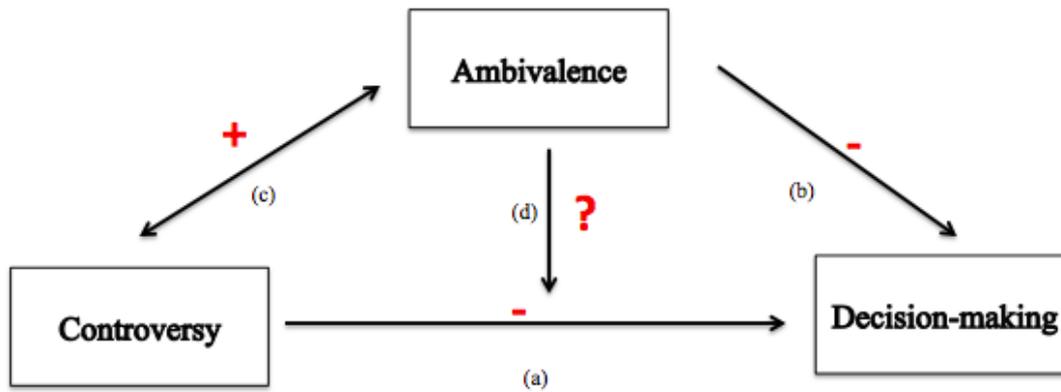


Figure 2. Representation of the relationship between controversy, ambivalence and decision-making.

#### ***2.4.4 Controversy, ambivalence and decision-making***

We did not find any study that focused on controversial issues, ambivalence and decision-making (relation d in Figure 2). However, several studies suggest that ambivalent individuals could support the right position when they have to decide in a complex situation, as they could be well informed on the issue; the right position is conceived as the most rational one or the one that is officially promoted. Thus, knowledge could represent a key factor in the relationship between controversy, ambivalence and decision-making. Fiol and O'Connor (2003), and Weick (1998, 2002, 2004) argued that ambivalence represented a wise attitude that could prevent from persistence or bad investments (such as buying an ineffective innovation for example). Hence, criticizing social issues could lead to a deeper comprehension of the issue and better choices as a consequence. The link between knowledge and ambivalence has been reported by Stoeckel (2013) who observed that as objective knowledge on Europe increased, the level of ambivalence toward Europe increased. Fabrigar et al. (2005) also hypothesized this relationship. In their theoretical paper they wrote "*people are likely to express little ambivalence when they know very little about an attitude object*" (pp. 88-89). As a consequence, it seems plausible to expect that ambivalent individuals would also support the beneficial initiatives such as in the above-mentioned study on fluoridation. Indeed, Sapolsky (1968) observed that people who were knowledgeable on the complex issue of fluoridation supported the issue regardless of the controversy.

Hence, if we consider that ambivalence is positively associated with knowledge, it is plausible to think that ambivalent individuals could similarly be wise and make the right choice. In spite of this, other studies proposed a negative relationship between ambivalence

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and knowledge. For instance, Citrin and Lucks (2005) proposed to interpret their negative effect of the age on ambivalence as the indicating that as knowledge improves across time, picking a side on the issue becomes easier. Thus, more knowledge leads to less ambivalence in their reasoning. Sawicki et al. (2013) also recently reported a negative link between knowledge and ambivalence toward euthanasia in their Experiment 2 ( $r = -.22$ ). However, they only considered "subjective knowledge" in their experiment. This was assessed via a single-item that asked the participants to indicate the extent to which they considered to "know much" on the issue, on a 7-point Likert scale. However, as ambivalence is linked with hesitations, this negative relation could simply result from the feeling that one does not know enough in comparison with univalent individuals. Thus, we believe that more studies should be devoted to assess the link between ambivalence and knowledge, by both considering the feeling of knowledge as well as the objective knowledge.

### 3. Practical implications

#### 3.1 Ambivalence and discomfort

Ambivalence and discomfort has often been tied up together, notably in decision-making situations. For instance, van Harreveld et al. (2009b) discussed the "agony of ambivalence" that results from such situations. We believe that actually three factors could contribute to this feeling of discomfort. First, ambivalent individuals have to neglect one side and give more prominence to the other when they decide and this can be quite painful (van Harreveld, 2009a; Weisbrode, 2012). It has been demonstrated that deciding leads ambivalent individuals to turn their back to the neglected side when they arrive at conclusion, and hence that they can fear they may make a wrong decision when they are committing to an issue. This fear could be the cause of discomfort. However, we believe that a part of this discomfort could also be due to social factors. In fact, the second factor could stem from the fact that it has been shown that people are reluctant to express undesirable information (e.g. this has been called the "MUM effect" since people tend to be silent, to "keep mum about undesirable messages to the recipient"; see Rosen & Tesser, 1970). This effect has also been illustrated in Manis, Cornel and Moore (1974) where participants had to hear several talks on marijuana legalization and then to summarize it to an audience. They reported that participants purposely altered their message accordingly with the attitude of an audience (as either being favorable or unfavorable toward a specific topic). In other terms, regardless of what they heard, they adapted their message as a function of the audience's attitude. The idea is that

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people filter the information that they transmit in order to reduce the discrepancy between the views of the other and the information contained in the shared message.

We believe that concern in avoiding displeasing the others could also affect individuals holding ambivalent attitudes when they have to take a stand. The experiments of van Harreveld et al. (2009b) provide support for this reasoning. They included three experimental conditions in their paradigm: a condition without ambivalence and without choice, one where participants read a text that contained both positive and negative aspects about a fictitious law (thus, a condition that induces ambivalence) but with no choice, and the third where ambivalence was also induced but where participants also had to choose. Right after reading the text, participants were invited to write an essay to summarize it. They then had to choose if they would defend the law in their text or write in its disfavor. However, for an unknown reason, these researchers told their participants that some of the written essays would be published in the students' newspapers of the University of Amsterdam. Hence, if deciding represents the most important reason of the discomfort as sustained by these researchers, participants could also have been concerned by the possible publication of their essays. In other words, they could have apprehended how they will be perceived by the others and hence, be torn between agreeing with the proposal and going against it. In such a situation, it is indeed quite complicated not to express undesirable information to the others because people have no idea of what is desirable (the issue was fictitious). Thus, it is plausible to think that individuals holding ambivalent attitudes could feel uneasy when they have to reach a conclusion, since for them there is no easy answer. They could consequently be concerned about how they will appear in the eyes of others after committing themselves. This could be even more complicated on a complex or a controversial issue.

The third factor that potentially plays a role in the feeling of discomfort relies on the social perception of ambivalence. We briefly argued in the introduction that there seems to be a human tendency to view the world in dichotomies and to impose a polarity to each part (Laponce, 1975; Weisbrode, 2012). A consequence of such tendency is that the opposite poles are intuitively considered as mutually exclusive (e.g. the fact that people are positive towards an issue implies that they are also less negative towards it) even if this presumed bipolarity is not necessarily observed (see Laponce, 1975; Cacioppo & Berntson, 1994; Cacioppo, Gardner, & Berntson, 1997). In other terms, people could expect to be able to arrive at stand on any issue, and hence ambivalence could be intuitively not likely to happen. The feeling of discomfort of ambivalent individuals could thus result from the perception that, in comparison with people who affirmed their position, their ambivalence is seen abnormal. Results of Bell

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& Esses (Study 2) support this reasoning. As a reminder, they obtained the usual response amplification only in the condition where ambivalence was perceived as something negative (the *negative motive* condition) but not when ambivalence was perceived as something positive (the *positive motive* condition). Such perception could be reinforced by the fact that individuals could be pushed to pick a side in their everyday life. A current advertising campaign of Marlboro illustrates this reflection. In this campaign, the company aimed at influencing undecided smokers through a motto that says "*don't be a maybe, be Marlboro*". It has been quoted as "*one of the most catchy recent cigarette campaign advert*" in the *Frankfurter Rundschau* (cited in the Local, 2012). They derived their slogan in numerous little sentences such as "*maybe never fall in love*" or "*maybe never made history*". We believe that such campaign illustrates how being undecided could be socially not well perceived and that individuals should rather pick a side. Furthermore, our studies revealed that ambivalence was socially perceived as bad on non-complex and consensual cases. It is consequently possible to think that, indeed, ambivalent individuals feel that their ambivalence is abnormal, which could contribute to their feeling of discomfort when they have to make up their mind on consensual issues.

However, if there is indeed a social pressure that would make people reach a conclusion, it could be less likely to be the case of controversial social issues; we observed that ambivalent attitudes were more likely to be expressed on controversial attitudes objects, and as well that they were positively perceived in terms of social utility. Therefore, it would be interesting to replicate van Harreveld et al.'s study (2009a) by considering both controversial and non-controversial attitudes objects in order to identify the extent to which deciding as well as the concern about the others play a role in the ambivalent individuals' feeling of discomfort. If the perception of ambivalence and the concern of the others are generating discomfort, ambivalent individuals should be at pain in decision-making situations on both controversial and consensual issues. However, if the social pressure to pick a side is responsible of the effect, ambivalent individuals should be less likely to feel uneasy on controversial issues in comparison with consensual ones. We would like to mention that only the first factor has been taken up in the literature so far. This question could be tackled by a 2X2 experiment where participants would either have to defend a point of view or not on either a controversial or a consensual issue. We would predict that ambivalent individuals should feel discomfort only when they have to arrive at conclusion on a consensual issue. Indeed, the feeling of discomfort should be experienced to a lesser extent in the three other

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conditions (since both choices could be understandable; i.e. a controversial issue; or no choice is involved).

### **3.2 Ambivalence and social norms**

The final point that we would like to raise concerns social norms. During the whole dissertation, we mentioned the fact that social norms drive people's attitude, and that they are indirectly affecting the perception of ambivalence. If this tends to be true on consensual social issues (i.e. where the social norms are clear), we observed a different picture on controversial social issues, where individuals who displayed ambivalence were most likely to be valued on the dimension of social utility. We believe that this finding deserves to be discussed as previous research on social norms observed a valorization of the considered object on social utility and not on social desirability; this is true for the norm of internality (Jouffre et al., 2001), for the preference for consistency (Channouf & Mangard, 1997; Sénémeaud, Mange, Gouger, Testé, & Somat, 2011), for intrinsic motivation (Cassignol-Bertrand, Baldet, Louche, & Papet, 2006), the belief in a just world (Alves & Correia, 2010), individualism and collectivism (Dubois & Beauvois, 2005; Green, 2006), and organizational citizenship behavior (Esnard & Jouffre, 2008), to name a few.

The dimension of social utility refers to the social worth of the individual (Beauvois & Dubois, 2009). In other terms, this dimension gauges the extent to which individuals meet the requirements of the society, and hence the extent to which people is likely to access a high hierarchical social position (Dubois & Beauvois, 2005). The fact that ambivalent attitudes have been valued on the dimension of social utility supports the idea according to which individuals who express ambivalence may be evaluated as the ones who have the highest chances of success in social life. Moreover, this finding also suggests that the expression of ambivalence could be "normative" when people deal with controversial attitude objects. Cambon et al. (2006) indeed reported that individuals who were the most normative were also the most described with terms associated with social utility (such as authoritative or ambitious). In other terms, our results imply that people should display ambivalent attitudes in order to be positively perceived when they deal with controversial issues. We believe that future research should focus more thoroughly on this aspect in order to confirm whether indeed ambivalent attitudes are normative when people deal with controversial complex attitude objects. It should also determine the social environments in which the expression of ambivalence is valued: for instance, as argued before, it seems interesting to try to replicate our findings outside university, as university could value critical thinking. We believe that the

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investigation of the social value of ambivalence on controversial social issues would open new avenues for research on attitudinal ambivalence.

#### **4.4 Conclusion**

Research on ambivalence stemmed from a critique of the bipolar conceptualization of attitudes (Scott, 1969; Kaplan, 1972). As a consequence, most studies on ambivalence have been conducted in this research tradition: they mostly focused on attitude change and its link with behavior or behavioral intentions and all nearly arrived at concluding that univalent attitudes should be preferred to them. We believe that this thesis provides support for the idea that, as claimed by Thompson, Zanna and Griffin (1995), we should not be indifferent toward ambivalence. Indeed, if society could pressure people to pick a side and then to stick to it, it seems that before deciding, people could benefit from taking their time and pondering the pros and the cons when they deal with a debated attitude object. In other terms, contrarily to most of the literature, the fact of not being able to easily pick a side could be profitable when the subject of the research deal with complex / controversial attitude objects. Research on attitudes should thus systematically include ambivalence measures in their experimental paradigm; this would indeed allow a better understanding of the potential positive consequences of such type of attitude.

#### **4.5 Coda**

We tried to promote a view whereby ambivalence was conceived as socially valued. As a conclusion of this dissertation, we would like to quote Weisbrode (2012), whose words perfectly summarize the idea that we tried to defend.

"For no matter how much we feel that making a clear choice, even the wrong choice, and putting our best energies behind it is always better than vacillating, ambivalence may in the end get the better of us"

Weisbrode (2012, p. 45)

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**6. APPENDIXES**

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### Instructions of the first research line

#### Standard condition

Nous vous demandons de bien vouloir faire **la liste de tous les adjectifs** que vous associez aux OGM dans la partie gauche du tableau ci-dessous (10 au maximum).

Adjectifs	Extrêmement négatif							Extrêmement positif							
1)	-3	-2	-1	0	1	2	3								
2)	-3	-2	-1	0	1	2	3								
3)	-3	-2	-1	0	1	2	3								
4)	-3	-2	-1	0	1	2	3								
5)	-3	-2	-1	0	1	2	3								
6)	-3	-2	-1	0	1	2	3								
7)	-3	-2	-1	0	1	2	3								
8)	-3	-2	-1	0	1	2	3								
9)	-3	-2	-1	0	1	2	3								
10)	-3	-2	-1	0	1	2	3								

Reprenez à présent la liste d'adjectifs que vous venez de créer.

Pour chacun d'entre eux vous allez devoir attribuer un score allant de +3 à -3 en fonction de l'image positive ou négative que celui-ci vous évoque, en utilisant la partie droite du tableau :

**-3** signifie que vous trouvez l'adjectif **extrêmement négatif**,

**-2** signifie que vous trouvez l'adjectif **négatif**

**-1** signifie que vous trouvez l'adjectif **plutôt négatif**

**0** signifie que vous trouvez l'adjectif **ni négatif, ni positif**

**1** signifie que vous trouvez l'adjectif **plutôt positif**

**2** signifie que vous trouvez l'adjectif **positif**

**3** signifie que vous trouvez l'adjectif **extrêmement positif**

## 6- Appendices

### *Self-enhancement condition*

Merci d'avoir rempli ce premier questionnaire.

Parfois, quand on donne son opinion, on veut créer une image particulière chez son interlocuteur. Nous voudrions savoir comment les gens font cela sur la question des OGM

Nous voudrions que vous essayiez de **donner une bonne image de vous** en répondant de telle manière à être **jugé(e) de façon positive** par vos enseignants en répondant à ces mêmes questions. Plus précisément, en indiquant les adjectifs et en les évaluant, vous devriez essayer de **donner une bonne image** de vous-même.

Adjectifs	Extrêmement négatif							Extrêmement positif
1)	-3	-2	-1	0	1	2	3	
2)	-3	-2	-1	0	1	2	3	
3)	-3	-2	-1	0	1	2	3	
4)	-3	-2	-1	0	1	2	3	
5)	-3	-2	-1	0	1	2	3	
6)	-3	-2	-1	0	1	2	3	
7)	-3	-2	-1	0	1	2	3	
8)	-3	-2	-1	0	1	2	3	
9)	-3	-2	-1	0	1	2	3	
10)	-3	-2	-1	0	1	2	3	

Nous vous demandons à nouveau de bien vouloir reprendre la liste d'adjectifs que vous venez de créer afin d'attribuer un score allant de +3 à -3 en fonction de l'image positive ou négative que celui-ci vous évoque comme précédemment.

## 6- Annexes

### *Self-depreciation condition*

Merci d'avoir rempli ce second questionnaire.

Nous voudrions à présent que vous essayiez de **donner une mauvaise image de vous** en répondant de telle manière à être **jugé(e) de façon négative** par vos enseignants en répondant à ces mêmes questions. Plus précisément, en indiquant les adjectifs et en les évaluant, vous devriez essayer de **donner une mauvaise image** de vous-même.

Adjectifs	Extrêmement négatif				Extrêmement positif		
1)	-3	-2	-1	0	1	2	3
2)	-3	-2	-1	0	1	2	3
3)	-3	-2	-1	0	1	2	3
4)	-3	-2	-1	0	1	2	3
5)	-3	-2	-1	0	1	2	3
6)	-3	-2	-1	0	1	2	3
7)	-3	-2	-1	0	1	2	3
8)	-3	-2	-1	0	1	2	3
9)	-3	-2	-1	0	1	2	3
10)	-3	-2	-1	0	1	2	3

Nous vous demandons à nouveau de bien vouloir reprendre la liste d'adjectifs que vous venez de créer afin d'attribuer un score allant de +3 à -3 en fonction de l'image positive ou négative que celui-ci vous évoque comme précédemment.

### **Instructions of the second research line**

Vous allez devoir **évaluer trois profils de réponses**, fournis par des participant(e)s, **lors d'une étude antérieure** décrite ci-dessous :

#### **Description de l'étude antérieure**

Nous avons conduit une étude dans laquelle les étudiants étaient invités au laboratoire pour participer à une étude portant sur le recyclage. Ainsi, en remplissant les items ci-dessous, les individus devaient nous indiquer leur attitude globale quand au recyclage.

Ci-après, nous vous présentons trois profils de réponses correspondant aux différents profils de réponse que nous avons observé suite à cette étude.

Votre tâche sera d'évaluer les réponses de trois participant(e)s différent(e)s.

## 6- Annexes

Ci-dessous, nous vous présentons **les réponses scannées d'un(e) premier(-ière) participant(e)**.

### RÉPONSE DU PARTICIPANT n°1

	Pas du tout						Tout à fait
	1	2	3	4	5	6	7
Le recyclage permet de mieux respecter notre environnement							7
C'est grâce au recyclage et au traitement des déchets que nous pouvons économiser nos ressources naturelles							7
Le recyclage aide à maintenir correctement notre écosystème						6	7
Le recyclage évite de gaspiller des matériaux et des ressources naturelles							7
Tout ce qui peut-être recyclé devrait l'être, peu importe le prix auquel cela revient						6	7
Nous devrions éviter de créer de nouveaux matériaux si nous pouvons nous servir de matériaux recyclés							7
Quand j'ai le choix, je préfère acheter un produit recyclé qu'un produit neuf							7
Je serai favorable à ce que l'on réduise le développement de nouveaux produits afin de favoriser le recyclage							7

Au regard de ses réponses, à quel point le participant n°1 vous semble-t-il être quelqu'un... :

	Pas du tout						Complètement
	1	2	3	4	5	6	7
...de sympathique							
...de doué							
...ayant de fortes chances de réussir ses études							
...d'agréable							
...d'appréciable							
...d'intelligent							
... de compétent							
... d'aimable							

**Pilot Study**

*Perception of controversy / consensus*

A propos de X, il y a:

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Consensus</b>	( )	( )	( )	( )	( )	( )	( )	<b>Controverse</b>
<b>Pas débat</b>	( )	( )	( )	( )	( )	( )	( )	<b>Débat</b>
<b>Un accord général</b>	( )	( )	( )	( )	( )	( )	( )	<b>Polémique</b>

## 6. Annexes

### Expérimentation 1 (Immigration)

#### Profil d'attitude positive

	Pas du tout	Tout à fait
1 - Je suis favorable à la construction de minarets en Suisse.	<input type="radio"/>	<input checked="" type="radio"/>
2 - Je désapprouve l'interdiction du port du voile intégral dans l'espace public	<input type="radio"/>	<input checked="" type="radio"/>
3 - Il me semble être acceptable de dispenser des élèves pour certaines branches ou activités pour des motifs religieux (comme des cours de natation ou d'éducation sexuelle par exemple)	<input type="radio"/>	<input type="radio"/>
4 - Le renvoi des criminels étrangers ne me paraît pas être une bonne solution.	<input type="radio"/>	<input checked="" type="radio"/>
5 - Je suis favorable à ce que le droit de vote au niveau communal soit instauré pour les étrangers qui vivent en Suisse depuis au moins 10 ans.	<input type="radio"/>	<input checked="" type="radio"/>
6 - La naturalisation devrait être facilitée	<input type="radio"/>	<input type="radio"/>
7 - Il ne me semble pas acceptable que les places de travail soient accordées prioritairement aux personnes de nationalité Suisse en temps de crise.	<input type="radio"/>	<input checked="" type="radio"/>
8 - Je suis favorable à propos de l'accord sur la libre circulation qui existe avec l'Union Européenne	<input type="radio"/>	<input checked="" type="radio"/>

## 6. Annexes

### Expérimentation 1 (Immigration)

#### Négative attitude profil

	Pas du tout	Tout à fait
1 - Je suis favorable à la construction de minarets en Suisse.	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
2 - Je désapprouve l'interdiction du port du voile intégral dans l'espace public	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
3 - Il me semble être acceptable de dispenser des élèves pour certaines branches ou activités pour des motifs religieux (comme des cours de natation ou d'éducation sexuelle par exemple)	( ) (x) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
4 - Le renvoi des criminels étrangers ne me paraît pas être une bonne solution.	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
5 - Je suis favorable à ce que le droit de vote au niveau communal soit instauré pour les étrangers qui vivent en Suisse depuis au moins 10 ans.	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
6 - La naturalisation devrait être facilitée	( ) (x) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
7 - Il ne me semble pas acceptable que les places de travail soient accordées prioritairement aux personnes de nationalité Suisse en temps de crise.	( ) ( ) (x) ( ) ( )	( ) ( ) ( ) ( ) ( )
8 - Je suis favorable à propos de l'accord sur la libre circulation qui existe avec l'Union Européenne	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )

## 6. Annexes

### Expérimentation 1 (Immigration)

#### *Ambivalente attitude profile*

	Pas du tout			Pas du tout		Tout à fait
1 - Je suis favorable à la construction de minarets en Suisse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2 - Je désapprouve l'interdiction du port du voile intégral dans l'espace public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3 - Il me semble être acceptable de dispenser des élèves pour certaines branches ou activités pour des motifs religieux (comme des cours de natation ou d'éducation sexuelle par exemple)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
4 - Le renvoi des criminels étrangers ne me paraît pas être une bonne solution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5 - Je suis favorable à ce que le droit de vote au niveau communal soit instauré pour les étrangers qui vivent en Suisse depuis au moins 10 ans.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 - La naturalisation devrait être facilitée	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 - Il ne me semble pas acceptable que les places de travail soient accordées prioritairement aux personnes de nationalité Suisse en temps de crise.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 - Je suis favorable à propos de l'accord sur la libre circulation qui existe avec l'Union Européenne	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 6. Appendixes

### Experiment 2 (Death Penalty)

#### *Positive attitude profile*

	Pas du tout		Tout à fait	
1 - Je pense que la peine de mort permet d'éviter le risque de récidive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2 - La peine de mort amène un sentiment de justice aux victimes et à leur famille	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3 - Grâce à la peine de mort, on diminue le taux de criminalité	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 - La peine de mort dissuade les individus de commettre des crimes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5 - La peine de mort coûte moins cher à la société	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
6 - Les conditions de vie des personnes détenues pour des faits mineurs peuvent être améliorées de par l'application de la peine de mort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 - La peine de mort permet de lutter contre la surpopulation carcérale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## 6. Appendixes

### Experiment 2 (Death Penalty)

#### *Negative attitude profile*

	Pas du tout	Tout à fait
1 - Je pense que la peine de mort permet d'éviter le risque de récidive	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
2 - La peine de mort amène un sentiment de justice aux victimes et à leur famille	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
3 - Grâce à la peine de mort, on diminue le taux de criminalité	( ) (x) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
4 - La peine de mort dissuade les individus de commettre des crimes	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
5 - La peine de mort coûte moins cher à la société	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )
6 - Les conditions de vie des personnes détenues pour des faits mineurs peuvent être améliorées de par l'application de la peine de mort	( ) ( ) (x) ( ) ( )	( ) ( ) ( ) ( ) ( )
7 - La peine de mort permet de lutter contre la surpopulation carcérale	( ) ( ) (x) ( ) ( )	( ) ( ) ( ) ( ) ( )
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	(x) ( ) ( ) ( ) ( )	( ) ( ) ( ) ( ) ( )

## 6. Appendices

### Experiment 2 (Death Penalty)

#### *Ambivalent attitude profile*

	Pas du tout	Tout à fait
1 - Je pense que la peine de mort permet d'éviter le risque de récidive	(x)	( )
2 - La peine de mort amène un sentiment de justice aux victimes et à leur famille	(x)	( )
3 - Grâce à la peine de mort, on diminue le taux de criminalité	( )	( )
4 - La peine de mort dissuade les individus de commettre des crimes	(x)	( )
5 - La peine de mort coûte moins cher à la société	( )	(x)
6 - Les conditions de vie des personnes détenues pour des faits mineurs peuvent être améliorées de par l'application de la peine de mort	( )	(x)
7 - La peine de mort permet de lutter contre la surpopulation carcérale	( )	( )
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	( )	(x)

## 6. Annexes

### Expérimentation 3 (Produits Organiques)

#### Profil d'attitude positive

	Pas du tout			Tout à fait		
1 - Les produits bio évitent l'emploi de pesticides	<input type="radio"/>	<input checked="" type="radio"/>				
2 - Les produits bio empêchent la dégradation du sol	<input type="radio"/>	<input checked="" type="radio"/>				
3 - Au niveau environnemental, l'agriculture bio me semble être une bonne alternative par rapport à une agriculture plus conventionnelle	<input type="radio"/>	<input checked="" type="radio"/>				
4 - Les produits bio contribuent à un meilleur respect des ressources naturelles de la planète	<input type="radio"/>	<input checked="" type="radio"/>				
5 - Les produits bio contiennent plus de vitamines et de minéraux que les produits plus conventionnels	<input type="radio"/>	<input checked="" type="radio"/>				
6 - Les produits bio sont meilleurs pour la santé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
7 - Les produits bio permettent de renforcer le système immunitaire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	<input type="radio"/>	<input checked="" type="radio"/>				

## 6. Annexes

### Expérimentation 3 (Produits Organiques)

#### Négative attitude profil

	Pas du tout				Tout à fait
1 - Les produits bio évitent l'emploi de pesticides	(x)	( )	( )	( )	( )
2 - Les produits bio empêchent la dégradation du sol	(x)	( )	( )	( )	( )
3 - Au niveau environnemental, l'agriculture bio me semble être une bonne alternative par rapport à une agriculture plus conventionnelle	( )	(x)	( )	( )	( )
4 - Les produits bio contribuent à un meilleur respect des ressources naturelles de la planète	(x)	( )	( )	( )	( )
5 - Les produits bio contiennent plus de vitamines et de minéraux que les produits plus conventionnels	(x)	( )	( )	( )	( )
6 - Les produits bio sont meilleurs pour la santé	( )	(x)	( )	( )	( )
7 - Les produits bio permettent de renforcer le système immunitaire	( )	(x)	( )	( )	( )
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	(x)	( )	( )	( )	( )

## 6. Annexes

### Expérimentation 3 (Produits Organiques)

#### Profil d'attitude ambivalente

	Pas du tout				Tout à fait
1 - Les produits bio évitent l'emploi de pesticides	(x)	( )	( )	( )	( )
2 - Les produits bio empêchent la dégradation du sol	(x)	( )	( )	( )	( )
3 - Au niveau environnemental, l'agriculture bio me semble être une bonne alternative par rapport à une agriculture plus conventionnelle	( )	(x)	( )	( )	( )
4 - Les produits bio contribuent à un meilleur respect des ressources naturelles de la planète	(x)	( )	( )	( )	( )
5 - Les produits bio contiennent plus de vitamines et de minéraux que les produits plus conventionnels	( )	( )	( )	( )	(x)
6 - Les produits bio sont meilleurs pour la santé	( )	( )	( )	( )	( )
7 - Les produits bio permettent de renforcer le système immunitaire	( )	( )	( )	( )	( )
8 - En exécutant les condamnés, d'avantage de moyens peuvent être investis pour la réinsertion des autres détenus	( )	( )	( )	( )	(x)

## 6. Annexes

### Expérimentation 4 (Recyclage)

#### Profil d'attitude positive

	Pas du tout		Pas à fait	Tout à fait
1 - Le recyclage permet de mieux respecter notre environnement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2 - C'est grâce au recyclage et au traitement des déchets que nous pouvons économiser nos ressources naturelles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3 - Le recyclage aide à maintenir correctement notre écosystème	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 - Le recyclage évite de gaspiller des matériaux et des ressources naturelles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5 - Tout ce qui peut être recyclé devrait l'être, peu importe le prix auquel cela revient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
6 - Nous devrions éviter de créer de nouveaux matériaux si nous pouvons nous servir de matériaux recyclés	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
7 - Quand j'ai le choix, je préfère acheter un produit recyclé qu'un produit neuf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 - Je serai favorable à ce que l'on réduise le développement de nouveaux produits afin de favoriser le recyclage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## 6. Annexes

### Expérimentation 4 (Recyclage)

#### Négative attitude profil

	Pas du tout		Pas à fait	Tout à fait
1 - Le recyclage permet de mieux respecter notre environnement	(x)	( )	( )	(x)
2 - C'est grâce au recyclage et au traitement des déchets que nous pouvons économiser nos ressources naturelles	(x)	( )	( )	(x)
3 - Le recyclage aide à maintenir correctement notre écosystème	( )	(x)	( )	( )
4 - Le recyclage évite de gaspiller des matériaux et des ressources naturelles	(x)	( )	( )	(x)
5 - Tout ce qui peut être recyclé devrait l'être, peu importe le prix auquel cela revient	(x)	( )	( )	( )
6 - Nous devrions éviter de créer de nouveaux matériaux si nous pouvons nous servir de matériaux recyclés	( )	(x)	( )	( )
7 - Quand j'ai le choix, je préfère acheter un produit recyclé qu'un produit neuf	( )	(x)	( )	( )
8 - Je serai favorable à ce que l'on réduise le développement de nouveaux produits afin de favoriser le recyclage	(x)	( )	( )	( )

## 6. Annexes

### Expérimentation 4 (Recyclage)

#### Profil d'attitude ambivalente

	Pas du tout		Pas à fait	Tout à fait
1 - Le recyclage permet de mieux respecter notre environnement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2 - C'est grâce au recyclage et au traitement des déchets que nous pouvons économiser nos ressources naturelles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3 - Le recyclage aide à maintenir correctement notre écosystème	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 - Le recyclage évite de gaspiller des matériaux et des ressources naturelles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5 - Tout ce qui peut être recyclé devrait l'être, peu importe le prix auquel cela revient	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 - Nous devrions éviter de créer de nouveaux matériaux si nous pouvons nous servir de matériaux recyclés	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 - Quand j'ai le choix, je préfère acheter un produit recyclé qu'un produit neuf	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 - Je serai favorable à ce que l'on réduise le développement de nouveaux produits afin de favoriser le recyclage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>