IUL School of Social Sciences

Department of Social and Organizational Psychology

Being aware of our own implicit prejudice – A study on implicit attitudes and self-awareness

Jorge da Silva

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Orientador(a):

Doctor Elizabeth Collins, Research Fellow,

Department of Social and Organizational Psychology, ISCTE - IUL

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Chapter I: Introduction

Behavior is and always will be one of the most studied constructs in Psychology. Some define behavior as any action an organism performs, others put emphasis on the internal processes that generate the action, while others underline the external influences that surround the organism (Lazzeri, 2014). The complete list of external and internal factors that influence behavior is rather long and difficult to compile. We know behavior is influenced by personality, values, genetics, social norms, temperament, motivation, age, health, culture, et cetera. This means that an organism's behavior will adapt to myriad factors both internal and external.

Attitudes, like behavior, are also widely studied in the field of social psychology. The definition of this concept has been hotly debated ever since Allport (1935) defined attitudes as a mental state of readiness. Over the years other issues have arisen such as the relationship between attitudes and behavior, with a great variability of results across different studies leading investigators to specify the conditions that would allow attitudes to predict behavior (Glasman & Albarracín, 2006). Other aspects that have been extensively discussed include attitudes' relative stability, whether they are implicit or explicit and even if they really exist at all.

Another construct that is added to the long list of factors that influence behavior is human's ability to direct attention towards themselves, in other words, self-awareness. The construct of Objective Self-Awareness (OSA), developed by Duval & Wicklund (1972), asserts that when humans direct attention to themselves, under certain conditions, their behavior may change to meet their own explicitly held attitudes. The question we addressed in the current research was whether and how attitudes that people hold unconsciously, also called implicit attitudes, might influence behavior more when people are self-aware.

Attitudes

Lapiere (1934, p. 230) defined a social attitude as "a behavior pattern, anticipatory set or tendency, predisposition to specific adjustment to designated social situations, or, more simply, a conditioned response to social stimuli".

When psychologists began investigating attitudes, they worked under the assumption that attitudes were permanent predispositions that deeply influenced a person's cognitive process and behavior. However, as investigation began to mount, it became clear that this was not the case, some attitudes would match the classic description, as they would influence cognition and action, others had very little impact on a person's actual behavior (Krosnick & Smith, 1994). For example, LaPiere traveled America with a couple of Chinese friends, visiting 67 hotels and 184 restaurants, six months later LaPiere wrote all these establishments asking if they would accept Chinese people as customers. The results showed that although LaPiere and his friends were only refused attendance at one of these hotels, 91% of these establishments replied they were unwilling to accept Chinese guests. With this LaPiere concluded that attitudes do not always predict behavior. He noted that many factors may contribute to the inconsistency between attitudes and behavior, for example, if the Chinese couple presented themselves neatly and confidently, the establishment owners could possibly overlook their attitudes towards the race in general and attempt a more positive approach to the individual. LaPiere theorized that strange features (such as being Asian in America during the 30s) combined with more "human" features would heighten sympathetic responses.

Festinger (1964), with his cognitive dissonance theory, further supported this notion that the relationship between attitudes and behavior, while seemingly obvious, might not be true at all. He even suspected that the inverse might have been true, in other words, behaviors could influence attitudes. Festinger believed that a behavior would only change if a change in attitudes and context occurred, otherwise the factors

that contributed to a certain attitude would remain in place and no behavioral change would occur.

In the end, how is it possible that researchers aren't able to find a link between attitudes and behaviors although this relation seemed so obvious? Over the years new answers have emerged to explain why the relation between attitudes and behavior are not as simple and linear as early research suggested.

It was believed that one of the reasons researchers failed to find definitive proof of attitudes' predictive power was response bias. This reaction to the attitude-behavior inconsistency explained that people's responses to verbal attitude measures were sometimes biased and did not represent the person's true attitudes. For this reason researchers began to develop indirect measures in order to avoid biased responses, but the relationship between these measures and behavior was similar to that of direct measures (Ajzen & Fishbein, 2005). It's also worth noting that some researchers have identified different dimensions of attitudes, such as the Three component approach (Affective, Cognitive and Conative) (Ajzen I. , 1989). Others argue that the same attitudes may result in different behaviors, depending on the people who hold them (Thurstone, 1931), and that the consistency between attitudes and behavior increases when the participants in a study are given more options on how to act rather than limiting them to a small number of actions (Ajzen & Fishbein, 2005).

Krosnick & Smith (1994, p. 1) suggested that an attitude's strength, defined as "the degree to which an attitude is resistant to change and influences cognition and behavior," might be an important factor in the attitude-behavior relationship. Certain attributes can influence attitude strength (Krosnick & Smith, 1994), such as:

- Direct experience – One's activities that relate to the object, personal experiences involving the actual social object.
- Certainty – One's confidence in his own attitude's correctness.
- Importance – One's perception of the importance of a certain attitude

- Knowledge – One's knowledge stored in memory regarding the attitude
- Accessibility – One's strength of access between a social object and their own evaluation of it.
- Extremity – One's distance from neutrality regarding an object. The farther one is from neutrality towards an object the closer he is to having extreme predispositions towards said object.
- Evaluative-cognitive consistency – One's perception of the object and cognitions about how the object is related to the attainment of valued goals. (Krosnick & Smith, 1994)

The accessibility and direct experience notions as factors that strengthen the attitude-behavior correlation were explored by Regan and Fazio (1977). The more one thinks about an issue, the higher its' accessibility, meanwhile, direct experience implies that the attitude was formed through direct behavioral experience with the object. It is also expected that repetition of expression and direct behavioral experience grant more attitude accessibility and, therefore, a stronger relation between attitude and behavior (Glasman & Albarracín, 2006). Stability has also been shown to strengthen the attitude-behavior link, in the sense that people attempt to retrieve previous attitudes when it is time to take action. People will also adjust their attitudes considering the contextual information that is available to them at the moment. Thus, in people whose attitudes have past information associated with them in a given context, attitudes will be more likely to predict behavior (Schwarz & Bohner, 2001).

In short, although the relationship between attitudes and behaviors seemed to be weak after early investigations on the issue, a large body of research has tried to understand exactly under what circumstances attitudes influence future behavior. It seems that attitudes that are stable and easy to retrieve are related to future behavior. Expressing attitudes in public, instead of in private and having direct experience with the object will also contribute to the higher accessibility of an attitude. The stability of one's attitudes can also be increased if the subject receives homogeneous information

about the object. Confidence in one's attitudes and forming attitudes based on behavior-relevant information will also increase attitude stability. All of these factors contribute to an attitude's stability, thus creating stronger relations between attitudes and actual behavior (Fazio, 1990).

Intention is yet another factor that might influence the predictive power of attitudes, more specifically, whether or not the individual intends to engage in a certain action. Research realized on this premise revealed robust correlations between intention and behavior. However it should be noted that certain conditions weaken this relation, such as time, the lower the stability of a certain intention the more likely it is not to predict behavior. Asking people to specify when, where and how they will carry out a certain intention will increase the probability of them doing so. If one feels in control of the performance of a behavior, they will act according to their intentions (Ajzen & Fishbein, 1980).

Self-Awareness

In 1972, Duval and Wicklund developed Objective Self-awareness theory. This was one of the earliest Self-theories (Silvia & Duval, Objective Self-Awareness Theory: Recent Progress and Enduring Problems, 2001). This theory focused on the ability of our consciousness to reflect on itself, or, self-reflection. In other words, consciousness allows us to reflect on environmental stimuli and ourselves as a separate entity from the rest of the world, hence the name "objective" self-awareness, because the human self becomes an object to the consciousness. There are, however, some animals that do show signs of self-awareness, such as Dolphins (Marten & Psarakos, 1994), none-the-less later reviews concluded that the tests performed in the studies of Marten and Psarakos did not confirm the existence of self-awareness or consciousness in dolphins. These tests confirm that dolphins can indeed control the visual stimulus on mirrors but were unable to find proof that dolphins recognize their reflected image as their own (Harley, 2013), implying that humans might be the only animal capable of self-awareness.

OSA is opposed by Subjective self-awareness in which the individual "experiences himself as the source of perception and action" (Duval & Wicklund, 1972). OSA stimulated a large body of research topics in both social and clinical psychology, such as: Emotion, Attribution, Attitude-behavior consistency, Pro-social behavior, Stereotyping, et cetera (Silvia & Duval, Objective Self-Awareness Theory: Recent Progress and Enduring Problems, 2001). This theory states that self-awareness enables self-evaluation, in which we automatically compares the current self to a standard. Standards refer to certain mental representations of what is 'correct,' for example, a correct attitude or behavior. According to the principle of consistency, if a discrepancy is found between the self and the principle, the individual may experience an aversive state (Festinger, 1962). If, in fact, the self does not fulfill the requirements of being consistent, the person has two possible choices: avoid self-awareness or attempt to shorten the distance between self and standards. Although it was first believed that self-awareness would always be an aversive state, it was later found that being self-aware can also cause a positive state if the people feel congruent with their standards (Silvia & Duval, Objective Self-Awareness Theory: Recent Progress and Enduring Problems, 2001). However people will only try to reduce discrepancy between their attitudes and standards if they believe the discrepancy is small enough (Duval and Wicklund, 1972) and if they feel it is relatively easy to reduce that discrepancy (Duval, & Mulilis, 1992).

One of the most utilized methods to inflict Self-awareness has been through the use of a mirror, but anything that moves someone's attentional focus onto themselves (having one's picture taken, being videotaped, having a spotlight turned on oneself, etc.) can have the effect. According to the original OSA theory (Duval & Wicklund, 1972) we can assume that individuals feeling discrepant will attempt to avoid sitting in front of a mirror, while subjects with consistent attitudes will not hesitate to. This notion has been empirically proven by Greenberg & Musham (1981). Children tend to be more obedient in front of mirrors as exemplified by Beaman, Klentz, Diener, & Svanum (1979) experiment, when a mirror was placed in a bowl, during trick-or-treating

children took less candy from the bowl, especially when the investigator combined the effect of the mirror with a verbal warning to only take one piece of candy. Scheier's (1976) angry aggression experiment also supports the use of a mirror to induce self-awareness. In this experiment, people exposed to a mirror aggressed more intensely than those who were not exposed to a mirror. Scheier concluded that self-aware participants had greater awareness of their own anger, thereby increasing their level of aggression. Batson, Thompson, Seuferling, Whitney & Strongman, (1999) used a mirror to eliminate the moral hypocrisy effect: while in front of a mirror people attributed tasks in a fair fashion to themselves and to the other "participant" because participants wouldn't want to be incongruent the standard of morality. We can conclude from these experiments that seeing one's reflection in a mirror is enough to effectively cause self-awareness.

Being self-aware has a multitude of effects on the individual. According to the Escape Theory, failing to meet one's standards may force people to try and "escape the self" via many routes, most commonly focusing their attention on immediate stimulus in a desperate attempt to shut down self-awareness, this shift of focus might cause effects such as binge eating (Heatherton & Baumeister, 1991), watching more TV (Moskalenko & Heine, 2003), alcohol abuse (Hull, 1981) and even suicide (Baumeister, 1990). Schaller even suggests this to be the reason why famous people tend to engage more regularly in borderline behaviors compared to normal people, as they experience higher than average focus and resort to this type of behavior to escape their own emotions towards themselves (Schaller, 1997). Self-awareness also has an emotional effect, in the sense that it amplifies one's subjective experience, for example, as we've already seen, Scheier (1976) discovered that when provoked, self-aware people tend to have higher levels of anger, compared to people who were not in a self-aware state.

The self was very loosely defined as the information one has about oneself in the original OSA theory (Duval & Wicklund, 1972). Consciousness is described as focusing attention outward to the environment, while in self-awareness attention is directed

inwards, to the self. By being conscious, an organism is able to process information and respond to it. The opposite of consciousness, is unconsciousness, in which there is a total absence of information processing from either the self or the context. While focusing attention on oneself, the individual should be able to identify, process and store information that is closely related to the self. In recent theories of human's automatic activity, human behavior is characterized by the duality between automatic behavior vs. controlled behavior (Langer, 1978; Shiffrin & Schneider, 1977). Macrae & Johnston (1998) argue that our behavior is controlled by unconscious processes, triggered by external stimuli to which we implicitly adapt our behavior, as being conscious of our every action would certainly tire us out. While it is still possible to control our behavior consciously, we don't have to be completely conscious of every action to function. Therefore, one could assume that focusing attention on one's self would break automatic functioning. This is exemplified in Dijksterhuis & van Knippenberg's (2000) experiment, in which they argue that high self-focus hinders the behavioral effects of stereotype activation. However, it is possible that the very process of self-awareness is not, in fact, conscious and might be automatic, as the comparison process occurs spontaneously and is hardly regulated by consciousness. The person's attention is diverted to the discrepancy between self-standard, which might motivate him to do something about it. Self-awareness happens when the individual reflects on this experience, otherwise the individual will be unconsciously processing information related to the self, such as one's past or future, emotions, thoughts, goals, et cetera, without actually being aware of this process. The same process can be applied to attitudes, not all of our attitudes can be explicitly measured and reported.

Implicit Attitudes

Historically, attitudes were largely assumed to be a conscious construct, however it is entirely possible that our behavior is influenced by past experiences, social context, emotions, information, etc., that we cannot access in a conscious manner. This is the basic premise of implicit attitudes, attitudes with unknown origin that can influence

behavior automatically, without the individual being aware of them, or even being able to self-report them (Greenwald & Banaji, Implicit Social Cognition: Attitudes, Self-esteem, and Stereotypes, 1995). Bargh, Chaiken, Govender, & Pratto's (1992) concluded that most evaluations made by individuals about social and nonsocial objects are conceived preconsciously, these attitudes activate so rapidly that consciousness cannot mediate them. As we noted before, attitudes were considered one of the most important aspects in understanding human behavior however subsequent studies revealed that the attitude-behavior correlation wasn't as strong as previously thought. However, a significant number of recent studies have shown a link between attitudes and behavior under certain conditions. Greenwald & Banaji (1995) argue that despite the already existing proof of the predictive power of accessible and stable attitudes on future behavior, the opposite is also valid: implicit attitudes, attitudes of which the individual is not aware during the moment of action, can also strongly influence an individual's course of action. Greenwald & Banaji note that although research on attitudes has been a major area in social and behavioral psychology, there was a remarkable lack of concern for the distinction between conscious and unconscious operations of attitudes. By definition, implicit attitudes cannot be measured directly, since the individual is unable to self-report on them. For this reason, investigators must resort to indirect methods of measurement such as the Implicit Association test (Greenwald, McGhee, & Schwartz, 1998). The subject might be informed that a certain factor is being evaluated while, in fact, the researcher is evaluating something else, such as an implicit attitude. Implicit attitudes may be consistent with explicit attitudes, however it is possible for an implicit attitude to oppose an explicit attitude, which is called a dissociation of implicit and explicit attitudes. The implicit attitude theory can be applied to a large number of social phenomena such as stereotyping, persuasion, self-esteem, et cetera. For example, white male Americans in the 80's were much more prejudiced towards black people when implicit attitudes were measured in comparison to when explicit attitudes were measured, suggesting a continued negative implicit association with black people (Crosby, Bromley, & Saxe, 1980). Despite the decline in

explicitly stated prejudiced attitudes towards African-Americans, there is still plenty of discrimination towards this minority in the US. This phenomena is generally explained by implicit attitudes (Ajzen & Fishbein, 2005)

The MODE (Motivation and Opportunity as Determinants) model of attitude-behavior processes is a dual-process model concerning how attitudes guide behavior. These processes are characterized by a conscious and deliberative process (explicit) and an automatic and immediate process (implicit). During the deliberative process the individual may ponder the results of an action and consider other possibilities before making a behavioral decision. The automatic process is much more spontaneous, and the individual may not be aware of an attitude's influence. The activation of implicit attitudes does not require conscious effort, is not intentional and is difficult to control. This model reasons that while the automatic process is hardly controlled consciously, individuals are still able to control their reactions (e.g. discriminatory reactions towards African-Americans) if they have the motivation and opportunity to do so (Fazio & Towles-Schwen, 1999). Another aspect of automatic attitudes is their malleability. People's implicit attitudes will be more negative or more positive based on previous experience with a certain member of a social group. For example, a white man who is reminded of a black person he admired in the past will, at least temporarily, modify his implicit evaluations towards the black minority (Dasgupta & Greenwald, 2001).

It is assumed that implicit attitudes, due to their automatic nature, will influence behavior unless overridden by consciousness, which requires cognitive effort. Dovidio, Geartner, & Kawakami (2002) discovered that white people's implicit association significantly predicted their nonverbal behavior. Since this type of action is nearly impossible to control, it follows logically that implicit associations will be reflected by nonverbal communication: both are non-conscious, thus consciousness is not able to mediate between them.

Currently, many studies reveal a link between implicit attitudes and behavior (Bessenoff & Sherman, 2000; Dijksterhuis, Aarts, Bargh, & Knippenberg, 2000;

Spalding & Hardin, 1999; McConnell & Leibold, 2001). Wegener & Petty (1997) developed the Flexible Correction Model, noting how, despite the large body of research on bias, there has been little attention given to the "correction of bias." In other words, at times people try to correct their behavior if they feel it is somewhat biased, sometimes resulting in "overcorrections" However, much like the research on explicit attitudes, the implicit attitudes field of research is starting to ask not only when do implicit attitudes predict future behavior but how: what are the factors that will allow an implicit attitude to predict behavior. According to the MODE model two of these factors are low opportunity and low motivation, as we have seen. However many other factors may influence implicit attitudes, such as one's mood, working memory capacity, impulsiveness, cognitive capacity, et cetera (Friese, Hofmann, & Schmitt, 2009).

Continuing Controversy

Fazio & Olson (2003) questioned the lack of awareness in implicit attitudes, because at the time researchers had no methods to measure whether participants were truly unaware of their implicit attitudes. They argued that, for example, when applying the IAT, just because an individual has longer gaps of time associating positive words with an outgroup and negative words with the ingroup, does not mean that the individual is necessarily unaware that he has a less-than-positive attitude towards the outgroup. Wegener and Petty's (1997) Flexible Correction Model seems to imply some degree of awareness, because one cannot correct responses unless one is aware of the possibility of a biased attitude. Congruent with this notion, Hahn, et al. (2014) discovered people were surprisingly good at predicting their own IAT results, even though there was generally low correlation between implicit and explicit attitudes, which suggests that people possess a certain level of self-awareness when it comes to their own implicit attitudes. Gawronski, Hofmann, & Wilbur, (2006) attempted to understand what parts of implicit attitudes are actually unconscious, this research revealed that people often lack awareness of the source of their attitudes, but,

compatible with Hanh et al.'s (2004) research, people seemed to be aware of these attitudes. The authors blame methodological, motivational and cognitive factors for the generally low correlation between measures of implicit and explicit attitudes. The authors also suggest that there is empirical evidence that indirectly-assessed attitudes impact people's psychological processes without them being aware of this.

Current Research

Recently, the awareness of implicit attitudes has received some focus, however we're still left to wonder how being aware of one's self may alter one's behavior while taking in relation to their implicit attitudes. As research has shown that explicit attitudes impact behavior more when people are self-aware, our main objective in the current research was to understand if and how implicit attitudes will impact behavior – and whether a self-awareness manipulation would influence that. More specifically we want to understand how the individual will adjust their behavior taking in consideration their implicit attitudes when their attention is directed at their own self. People might abide to their implicit attitudes ("Well, these are my attitudes, I might has well follow them") or avoid them at all costs ("I know I have these attitudes, but I'll make up for it with acceptable behavior") when a mirror is present.

To test this, we gave our participants a resource allocation task and then measured either their implicit or explicit attitudes, with or without the presence of a mirror.

H1: Replicate the self-awareness findings with explicit attitudes

We expect to find a self-awareness effect of the mirror on the resource allocation task, exploring the explicit attitudes' scales and the use of a mirror to evoke self-awareness. We presume, considering the various studies on this issue, that when the mirror is present (high self-awareness) attitudes will be more highly correlated with behavior than when the mirror is not present (low self-awareness). In other words, if the participant has negative attitudes towards refugees, fewer resources will be distributed in the resource allocation task when the mirror is present than when it is absent;

whereas, if the participant has positive attitudes towards the refugees, more resources will be distributed when the mirror is present than absent. In this hypothesis, we are essentially try to replicate the classical OSA theory assumption that when people are self-aware their explicit attitudes will influence their behavior.

H2: People's behavior will be related to implicit attitudes when they are self-aware.

H2a: People's behavior will contradict their implicit attitudes when self-aware

In accordance with Wegener & Petty's (1997) model, it is possible that participants, upon being made self-aware will try to overcompensate with contradictory behavior when they feel their attitudes do not meet the standards, such as the standard of being a tolerant person. For example, people who are implicitly biased against refugees, when they become self-aware, might try to act more positively towards this group by allocating more resources to refugees.

H2b: People's behaviors will become more consistent with their implicit attitudes when self-aware.

Alternatively, upon becoming self-aware, people might act according to their implicit attitudes. For example, people who are aware of themselves might act more congruently with their implicit attitudes towards refugees, whether they are positive or negative, thus allocating more or less resources to refugees in the resource allocation task.

Pre-test: People's implicit attitudes towards the refugees will be negative

We performed a pre-test trying to understand the general implicit attitudes of our participants, using only the implicit association test.

Chapter II: Pre-test

Pre-test

We built an implicit association test (Greenwald & Banaji, Implicit Social Cognition: Attitudes, Self-esteem, and Stereotypes, 1995) to use on the main test. On the pre-test we tried to understand the general implicit attitudes of the Portuguese population on refugees and whether the measure was working correctly or not.

Participants

We had 51 responses to the Pre-test. All participants were of Portuguese nationality and had Portuguese as their first language. We did not collect gender or age information about these participants.

Measures

Single category implicit association test (SC-IAT). The SC-IAT (Karpinski & Steinman, 2006) is a modified version of the implicit association test (IAT) without a second contrasting category, in other words, while the regular IAT has 4 contrasting categories, the SC-IAT has 2 contrasting categories and 1 target category. Our contrasting categories were unpleasant (including the terms “Ofensa” (Offense), “Ódio” (hate), “Constrangedor” (Awkward), “Feio” (Ugly), “Enfadado” (Bored), “Fracasso” (Failure), “Abominável” (Awful), “Malvado” (Evil)) and pleasant (including the terms “Adorável” (Adorable), “Amor” (Love), “Amigo” (Friend), “Simpatia” (Sympathy), “Lindo” (Beautiful), “Elogio” (Complement), “Inspirador” (Inspiring), “Deleito” (Pleasure), “Contente” (Happy)). Our target group was refugees (“Sírio” (Syrian), “Exilado” (Exiled), “Médio Oriente” (Middle East), “Pessoa deslocada” (Displaced person), “Muçulmano” (Muslim), “Asilo” (Asylum)). Our SC-IAT had 4 blocks, 2 for practice and 2 for the actual responses. On the first 2 blocks (one practice followed by one test block) the Refugee category was paired with either the unpleasant or the pleasant category on the same key (either “A” or “L”). On the last 2 blocks the refugee category was paired with the other category. The responses were scored through the

reaction times of the participants, a short reaction time between a target and a category implies a stronger associative relation i.e., if a participant associated Refugee words, such as the word “Sírio” (Syrian) with Pleasant than Unpleasant, when Refugee and Pleasant were paired on the same key, the responses would be faster than when Refugee was paired with Unpleasant. The strength of the implicit associative relation can be described as “slight” (.15), “moderate”(.35), or “Strong”(.65) (Greenwald, Nosek & Banaji, 2003).

Results and Discussion

In order to analyse the SC-IAT data, we followed the data analysis description laid out by Karpinski and Steinman (2006). Of our sample of 51 participants, 3 participants were removed for having an error rate higher than 20% and 9 non-response trials were removed, next we calculated the mean of all the correct trials in block 2 and 4 and added 400 ms. We replaced all incorrect trial reaction times with this value. Next, we calculated the adjusted mean of all the trials of each test block separately and the standard deviation of all the correct responses. Finally, we subtracted the adjusted mean of block 2 from block 4 and divided by the standard deviation of all the correct responses, thus calculating the D-score (Greenwald, Nosek, & Banaji, 2003; Karpinski & Steinman, 2006). The results were within our expectations, the D-score presented a slight negative implicit association (D=-.1974824) towards refugees among our pre-test sample. The IAT seemed to preform without any great issue, few participants reported minor issues that could probably be attributed to their own computers rather than the coding of the test.

Chapter III: Main Study

Method

Participants

The sample utilized for this investigation was a convenience sample composed of 125 participants, mostly students from ISCTE. Most participants reported having Portuguese nationality except for one, who was excluded from the sample. Also, data from 2 participants were excluded due to high error rate (above 20%) on the IAT, and one for not completing the IAT test. As such, we analyzed data from 121 participants. Sixty two participants received partial course credit for participation, the remaining 63 participants were entered in a lottery for a gift certificate worth 50 euros. The sample was 20,8% male and 76,8% female, ranging in age from 18 to 34 (M = 21,2, SD = 2,76).

Measures

Single category implicit association test (SC-IAT). The SC-IAT (Karpinski & Steinman, 2006) from the Pre-test was used again in the experiment.

Explicit Attitude Measures.

To measure explicit attitudes, we used Portuguese versions of four standard scales: Realistic Threat (Stephan, Bachman, & Ybarra, 1999), Symbolic Threat (Stephan, Bachman, & Ybarra, 1999), Intergroup Anxiety (Stephan & Stephan, 1985), and Prejudiced Attitudes (Stephan, Ybarra, Martínez, & Tur-Kaspa, 1998)

Realistic threat scale. Due to a technical mistake only 7 of the usual 8 items from this scale were presented to our participants and are presented here. The Realistic threat scale by Stephan, Bachman & Ybarra (1999) and translated by Murteira, & Golec de Zavala (*in-press*), assesses explicit attitudes towards immigrant groups. In this project we adapted Stephan, Bachman & Ybarra's scale to Portuguese with reference to the target group refugees. The realistic threat scale we used included seven statements (e.g., "Os refugiados da Síria recebem mais de Portugal do que contribuem" ("Syrian refugees receive more from Portugal than they contribute"); "As crianças refugiadas da

Síria devem ter os mesmos direitos que as crianças portuguesas para frequentar o ensino público." (Syrian refugee children should have the same public school rights as Portuguese children"). Responses were given on a 1 ("Completely Disagree") to 10 ("Completely Agree") scale (α = .650).

Symbolic threat scale. The symbolic threat scale by Stephan, Bachman & Ybarra (1999) and translated by Murteira, & Golec de Zavala (*in-press*), also assesses explicit attitudes towards immigrant groups. Participants were asked to rate seven items (e.g. "Os refugiados da Síria não têm que aceitar os costumes portugueses" ("The Syrian refugees do not have to accept Portuguese customs"); "A chegada dos refugiados da Síria coloca em risco a cultura Portuguesa" ("The arrival of the Syrian refugees presents a risk to the Portuguese culture"). The participants could evaluate each statement from 0 ("Completely disagree") to 10 ("Agree completely") (α = .823).

Intergroup Anxiety. The intergroup anxiety scale was adapted from Stephan & Stephan (1985) and translated by us. On this scale participants were asked to evaluate their emotions when imagining themselves in a situation where they, as Portuguese individuals, had to interact with a group of refugees compared to interacting with a group of Portuguese People. Participants answered on a scale from -5, (I strongly feel the opposite of the emotion) to 5 (I strongly feel the emotion). The 11 emotional responses were: Determinado (Determinate), Constragido (Awkward), Auto-Consciente (Self-conscious), Feliz (Happy), Aceite (Accepted), Confiante (Confident), Irritado (Annoyed), Impaciente (Impatient), Defensivo (Defensive), Desconfiado (Suspicious), Cuidadoso (Careful) (α = .742)

Prejudicial attitudes scale. The Prejudicial attitudes scale was adapted from Stephan, Ybarra, Martínez, & Tur-Kaspa, (1998) and translated by us, this scale was composed of 12 attitudes, the participants were asked to evaluate each attitude on a scale of 0 (I do not have this attitude toward refugees) to 10 (I strongly hold this attitude towards refugees). The list of attitudes were: "Ódio" (Hate), "Cordialidade" (cordiality), "Hostilidade" (hostility), "Antipatia" (Antipathy), "Afeto" (Affect), "Desdém"

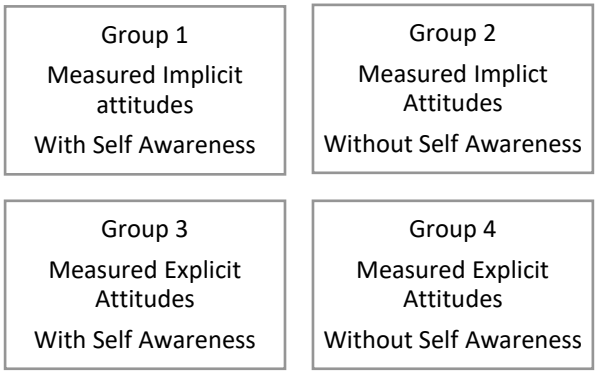
(Disdain), “Simpatia” (Sympathy), “Admiração” (Admiration), “Aceitação” (Acceptance), “Rejeição” (Rejection), “Superioridade” (Superiority), “Aprovação” (Approval). (α = .850)

Allocation task. We developed this task for this project, but it is similar to others used for similar purposes (Neves & Guerra, 2016)**.** In this task participants were asked to allocate 10 different resources to the refugees. Participants could choose from distributing “0” to “100” of a given resource. This task was created with ambiguity in mind, as such we did not specify the effects of what giving “0” or “100” of a resource to refugees were, or even how much was being given to the refugees. We decided to keep this task as ambiguous as possible so that participants would not be sure of what the correct answer was. The list of resources were services available to people in need in Portugal, including “Formação Profissional” (Professional training), “Subsídio de Renda” (Rent subsidies), “Tarifa social de Água” (Social assistance for water), “Serviços Públicos de Saúde” (Public Healthcare), “Educação Pública” (Public Education), “Rendimento social de inserção” (social integration income), “Tarifa Social da EDP” (EDP’s social tariff), “Formação em Línguas” (Language training), “Complemento Solidário para Idoso” (Supplemental income for the Elderly). (α = .921)

Experimental design

For this project we adopted a between subject design, which resulted in 4 distinct groups. In 2 of these groups we measured explicit attitudes with or without the presence of a mirror, while in the other 2 we measured implicit attitudes also with or without a mirror. Our two manipulations were fully crossed as we can see in the following chart:

Figure 3.1



Materials

For this experiment we had 2 identical desks, each with a computer where the task was completed. Each of the desks had a mirror to the right of the computer screen. This mirror was covered with a white cloth or uncovered, depending on the condition. The desks were separated by a movable wall of 1,5m x 1,5m so that the participants would not be able to see what each other were doing. The participants were greeted at the door of the room by the investigator, who explained the study before seating them and randomly assigned the participants to the desks.

Procedure

The 62 participants who received partial course credit for the study registered online up to 4 days ahead of time. These participants were psychology and sociology undergraduate students. The remaining 65 Participants volunteered to take part in the study in exchange for being entered in a lottery for 50€ in gift certificates that could be used at a number of shops. These individuals were approached on campus by the investigator and asked if they were willing to participate in a study about refugees and told about the lottery. The data were collected in a small room in the university psychology lab, with space for up to 2 participants to answer the survey simultaneously.

Before participants arrived at the lab, the investigator established the condition for each of the desks, which was randomly assigned by the computer program used for the survey, Qualtrics (Qualtrics, Provo, UT).

The investigator greeted participants at the door to the room and gave a brief description of the study, before guiding the participants to the desks. In this description, he said that the participants would be subject to a set of tasks related to the arrival of Syrian refugees in Portugal. To increase the perceived importance of the study, the investigator asked participants to answer thoughtfully because the results of the study would be shared with Portuguese politicians and could have some impact on policies toward refugees. The investigator also explained the presence of the mirrors, attributing them to another study that was being held in the same room. Before initiating the survey the participants had to sign the informed consent, made available by the investigator. The survey took 10 to 15 minutes. The investigator stayed in the room with the participant(s) in case they had any questions during the procedure.

All participants first read and signed the informed consent form on paper. Following this they began the survey, which was programmed in Qualtrics (Qualtrics, Provo, UT), on the computer. Regardless of condition, participants first completed the resource allocation task. Those in the explicit attitudes condition then completed the four explicit attitudes scales (Intergroup anxiety scale, Realistic threat scale, Symbolic threat scale and Prejudicial attitudes scale), in a randomized order; whereas, those in the implicit attitude condition completed the SC-IAT. When all the participants in a session (1 or 2) had finished the survey, the investigator initiated the debriefing. In the debriefing the investigator explained the real reason why there were mirrors on the desks and why they were or were not covered with white cloth. The investigator also explained that the results of the study were not actually going to be sent to a political entity, but that the data would be used in a dissertation instead. The investigator then explained the study and the expected results to the participants. Finally, the volunteering

participants were asked to leave their e-mail addresses so that they could participate in the selection of the participant for the 50 € voucher.

Chapter IV: Results

Variable Creation. To proceed with the analysis we first had to create the correct variables, namely, it was necessary to create a standardized score for both the explicit and implicit attitudes' scores, which enabled us to create a variable of the attitudes of all participants, in addition to a separate implicit attitude score for half the participants and an explicit attitude score for the other half. We also created a variable for the resource allocation task and two binary variables for the experimental manipulations: attitudes (implicit or explicit) and mirror (present or not).

For participants in the implicit attitude condition, we calculated the individual D-score of each participant on the SC-IAT (Greenwald, Nosek, & Banaji, 2003; Karpinski & Steinman, 2006). This followed the same procedure described for the pre-test, but we split by individual respondent to obtain individual D-scores.

For participants in the explicit attitude condition, we reversed the score of some items by computing new variables where we subtracted their score from the highest score possible plus the lowest score possible (If the participant's score was 7 in a scale of 1 to 10, we'd subtract 7 from 11), this way, a participant with an overall higher score should have more positive attitudes towards refugees. However to perform an analysis using these scores we had to standardize them so that we could compare their means and standard deviations. We used Z-scores to standardize these variables. Plus, we also computed one variable with all the explicit attitudes scales score to combine with the standardized individual D-score of that IAT as the attitudes variable. To do this we created a composite score using all the standardized explicit attitude scales' scores variables and standardized it.

Hypothesis Testing

Our first hypothesis was that when a mirror was present, the participant's explicit attitudes would be more closely related to the amount of resources they attributed to refugees than when a mirror was not present. This was based on the assumption that the presence of a mirror would result in higher self-awareness, leading to more attitude-behavior consistency. To test this hypothesis, we conducted a multiple regression analysis with the resource allocation task as the dependent variable. We added the explicit attitudes variable in the first step, on the second step we added the mirror condition variable (now coded as -1 = no mirror and 1 = mirror) and, in the last step, we added the interaction variable between explicit attitudes and mirror condition, which was created by calculating the product of explicit attitudes and mirror condition. We did not find a significant effect on the first step, R^2=.01, F(1,16)=.788, p = .378; the second step, R^2=.042, F_{change}(1,60)=1.847, p = .179 nor the final step, R^2=.044, F_{change} (1,59)=.14, p = .71. We also employed another method to test for this effect (Gibson, 1978) by preforming two correlations between the explicit attitudes scales and the resource allocation task, in one of these we included all participants that were exposed to the mirror R= .065 N= 30, and in the other, all participants that were not exposed to a mirror R= .173 N= 33. On a following step we used Richard Lowry's tool (2016) to check for a significant difference between the two correlations. Again, no significant difference was found, z= 0.41, p = .0238.

Table 4.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,113[a]	,013	-,003	22,35334	,013	,788	1	61	,378
2	,206[b]	,042	,010	22,19972	,029	1,847	1	60	,179
3	,211[c]	,044	-,004	22,36059	,002	,140	1	59	,710

a. Predictors: (Constant), zExAtt

b. Predictors: (Constant), zExAtt, newmirrorconditionvar

c. Predictors: (Constant), zExAtt, newmirrorconditionvar, ZEAttXMir

The primary experimental question was split between two competing predictions. It might be that in the presence of a mirror, explicit attitudes would be more predictive of the resource allocation task's results, while the implicit attitudes would be negatively related to the resource allocation task's results, implying people would adhere to their explicit attitudes but avoid acting on their implicit attitudes. On the other hand, it might be that both implicit and explicit attitudes would be predictive of the resource allocation task's results, implying people's behavior would be guided by their implicit and explicit attitudes.

In order to test which of these possible results, or neither, occurred, we performed a multiple regression analysis with the resource allocation task results as the dependent variable and introducing on the first step the overall attitudes variable, on the second step the mirror condition, on the third step the attitude condition (implicit or explicit), on the forth step an interaction variable created from the product of the overall attitudes and the mirror variables, on the fifth step the interaction variable created from the product of attitude condition and mirror variables, on the sixth step the interaction variable created from the product of the overall attitudes and attitude condition variables and, finally, a step in which we included an interaction variable created from the product of the attitudes, attitude condition and mirror variables. If the 3-way interaction between attitude, attitude condition and mirror condition was significant, the results would imply that the first half of our hypothesis would be true, people would avoid

acting no their implicit attitudes. If, on the contrary, the 3-way interaction yielded no significant results, but instead the 2-way interaction between mirror condition and attitudes was found to be significant, the results would imply the latter half of our hypothesis was correct and people's behavior would be guided by their implicit attitudes. However, neither the 3-way interaction, nor the 2-way interaction between mirror condition and attitudes yielded significant results. Both results for the 3-way interaction effect, R^2_{change} = -.006, $F_{change}(1,114)$=.764, p = .384 and the 2-way interaction between the mirror condition and attitudes R^2_{change} =.001, $F_{change}(1,117)$=.753, p = .387 suggest that our second hypothesis is not true.

Despite our somewhat disheartening results we did find that the mirror had an effect on the resource allocation task, R^2_{change}=.023, $F_{change}(1,119)$= 2.815, p = .096. These results seem to imply that when the mirror was present, participants allocated more resources to the refugees than when the mirror was not present. To analyse this effect we performed an independent-sample t-test comparing just the mirror condition with the no-mirror condition, controlling no other variables. That analysis found a weaker effect of the mirror on resource allocation, $t(123) = -1.51$, p = .134.

Table 4.2
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,008[a]	,000	-,008	21,54987	,000	,008	1	120	,928
2	,152[b]	,023	,007	21,38872	,023	2,815	1	119	,096
3	,167[c]	,028	,003	21,42633	,005	,583	1	118	,447
4	,185[d]	,034	,001	21,44883	,006	,753	1	117	,387
5	,187[e]	,035	-,007	21,53192	,001	,099	1	116	,754
6	,214[f]	,046	-,004	21,50641	,011	1,275	1	115	,261
7	,228[g]	,052	-,006	21,52848	,006	,764	1	114	,384

a. Predictors: (Constant), attall
b. Predictors: (Constant), attall, mirrorcondnum
c. Predictors: (Constant), attall, mirrorcondnum, attcondnum
d. Predictors: (Constant), attall, mirrorcondnum, attcondnum, AAttXMir

e. Predictors: (Constant), attall, mirrorcondnum, attcondnum, AAttXMir, AttCXMir
f. Predictors: (Constant), attall, mirrorcondnum, attcondnum, AAttXMir, AttCXMir, AAttXAttC
g. Predictors: (Constant), attall, mirrorcondnum, attcondnum, AAttXMir, AttCXMir, AAttXAttC, AttXAttCXMir

Chapter V: Discussion

In this study, our main objective was to observe the impact self-awareness had on people's actions, taking into consideration their implicit and explicit attitudes. Namely we wanted to understand how people would adjust their behavior in reaction to being made self-aware, hypothesizing that individuals might try to compensate for their (unpopular) implicit attitudes or act according to them (as they do with explicit attitudes) in a self-aware state.

Unfortunately we were unable to replicate the standard OSA effect (Duval & Wicklund, 1972). We expected that when a mirror was present the participant's explicit attitudes would be predictive of their behaviors, however we did not observe that. The presence or absence of the mirror did not influence the relationship between the explicit attitudes and the resource allocation task.

Our second hypothesis was composed of two competing hypothesis, either participants would become self-aware and try to avoid their implicit associations with the refugees, thus granting more resources to this group, or, contrarily, they would become self-aware and attempt to keep consistency with their implicit attitudes, resulting in less resources for the refugees. The IAT results revealed that the participants had, generally, a slight negative association with refugees, both in the pre-test and in the final study. Still, we did not observe a significant relation between implicit attitudes and the resource allocation task, nor between explicit attitudes and the resource allocation task with or without the presence of the mirror. These results might seem to imply that either way the participants were not self-aware, however, we cannot conclude that the participants did not felt some kind of effect from the presence of the mirror, after all, we did find a small effect on the mirror variable which seems to have influenced the results of the resource allocation task.

Limitations

A possible limitation of our study and why we probably could not prove our hypothesis would be the lack of salience of the participant's own attitudes. It is possible that another construct other than personal attitudes became more salient when the mirror was present. We speculate that the presence of a mirror may have influenced the participants to become more aware of social norms, thus increasing the rate of resources distributed. These results are congruent with Objective Self-Awareness (1972) notion of standards, more specifically, that when people become aware of themselves, they also become aware of their standards. However, for us to find a strong consistency between attitudes and behaviors, our participants need their self-awareness to be directed specifically to their attitudes. It is reasonable to assume that the mirror created a self-awareness effect, which in addition to the participants' concern with the context cues became more focused on the specific standard of what they considered to be socially acceptable.

Another possible explanation is that, perhaps, a resource allocation task is not a viable mean of quantifying behavior, at least in this particular scenario. Although our participants were warned that the results of the resource allocation task would be sent to a political party in an attempt to create new policies regarding the arrival of the refugees, it is totally possible that our participants simply did not believe this story and thus did not place the "correct" emphasis on the resource allocation task.

Another possible limitation to our study may have been the refugee crisis itself. When we began designing this project the refugee's crisis was very prominent in the media and highly ambiguous. However when we later collected the data it became clearer that very few refugees were actually interested in entering Portugal and the greater clarity of the whole crisis may have changed some people's attitudes towards the refugees and consequently started seeing them as less of a cultural or real threat. We began this study assuming there were certain negative implicit attitudes towards the

refugees outgroup, however the shift of opinions towards the migration of refugees may have enabled participants to feel the need to be charitable towards this outgroup, instead of channelling their less positive behavior.

Chapter VI: Conclusion

The relationship between attitudes and behavior has been studied throughout the decades, none-the-less, given how complex this relationship has proven to be, it is very important to keep studying this issue to better understand the mechanisms that control human behavior.

We designed this study under the assumption that when people were self-aware their behavior would be similar to their attitudes. We hypothesised that when people were self-aware their attitudes would be closer to their behaviors, so if the participants had positive attitudes towards refugees, more resources would be distributed to them. We also hypothesised that self-aware participants might try to distance themselves from negative implicit associations they had towards the refugees. None of these hypothesis were proved, however. Our results did indicate that the when the mirror was present our participants displayed self-awareness, evidenced by the results of the resource allocation task changing with the presence or absence of the mirror, however we also speculate that this self-awareness effect may have been directed towards other aspect of their psyche, such as social norms. We believe it is important to keep studying this issue with an improved methodological approach that would make participants focus more on their attitudes, rather than social cues.

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