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Abstract

In this article we analyse the moderating effect of activation of independent and interdependent views of the self on the use of heterogeneity and consensus information in the attribution of validity to groups' decisions. In two experimental studies we present evidence showing that participants primed with an interdependent view of the self make no distinction between homogeneous or heterogeneous information regarding group composition while attributing validity to groups decisions. In fact, participants base their validity attribution mainly on consensus information. In contrast when primed with an independent view of the self, participants make use of variability information attributing greater validity to a more heterogeneous and consensual group and lower validity to a group depicted as homogeneous and consensual. Results are discussed at the light of the differential utility of consensus and heterogeneity information and of self-knowledge within the processes of validation of group decisions.

Key-words

Validation of group decisions; consensus and heterogeneity information; independence and interdependence

Introduction

In real life, as third-party laypeople (1) we are often faced with numerous decisions or opinions and we are led to judge their validity. Indeed, we are frequently asked to state if we are pro or con a new governmental policy for tax-raising; if we agree or disagree allowing same-sex couple to adopt children, etc. In order to state our opinions, or to support our decisions, we often lack the necessary knowledge and make use of available informational cues helping us reducing uncertainty and respond in a reliable and valid way. But is the use of these informational cues moderated in any way by contextual factors, namely individuals' self-knowledge?

In this article, we will provide a brief summary of the main approaches explaining the perception of validity of opinions or decisions; we then present theoretical and empirical evidence arguing for the important role of group consensus and heterogeneity within this realm. Afterwards, we will argue for the impact of individuals' self-knowledge on the use of group consensus and heterogeneity information in the process of perceiving validating in groups' opinions and decisions. And finally we will present two experimental studies illustrating this particular role of individuals' self-knowledge.

This investigation is particularly relevant for several reasons. First, the literature regarding the importance and impact of group information on the perceived validity of groups' decisions is scarce and dated. Second, this line of research is particularly relevant for the understanding of the most efficacious ways underlying team building and team composition, affecting team-work and interpersonal relationships within this specific type of groups. Third, this research also contributes to the understanding of the importance of groups' decisions and their impact on everyday life of third-party laypeople. Fourth, in this article we bridge two theoretical frameworks that, until now,

Self-knowledge and use of consensus and heterogeneity information 3

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2
3 have been separated and their joint effects were never, to our knowledge, empirically
4
5 tested.
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7 8 **Opinions and Decisions Validation Framework**

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10 Traditionally, consensus has been put forward as a major cue used by individuals to
11 judge the validity of groups' decisions or opinions (cf. Festinger, 1954; Krueger,
12 2000). Indeed, when using consensus information one might perceive greater validity
13
14 in the positions of a more consensual group than of a less consensual one (Bohner,
15
16 Dykema-Englade, Tindale and Meisenhelder, 2008).
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21 However, other informational cues can be called up to help individuals judge the
22 validity of groups' decisions or opinions. As Goethals, Allison and Frost (1979) point
23 out, individuals might use information regarding the variability or heterogeneity of
24 group members contributing to a consensual opinion or decision. Specifically,
25 Goethals et al. (1979) propose that group members endorsing a specific opinion tend to
26 perceive heterogeneous rather than homogeneous others as endorsing a similar opinion
27 (i.e., the "diversity effect"), this being the result of a motivation to perceive greater
28 validity in the opinions they sustain.
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38 Both the consensus and variability hypotheses have been supported by correlational
39 (Goethals et al., 1979; Vala, Garcia-Marques, Gouveia-Pereira and Lopes, 1998; Batel
40 and Castro, 2009) and experimental studies (e.g., Reckman and Goethals, 1973;
41
42 Goethals and Nelson, 1973; Augustinova, Drozda-Senkowska and Lasticova, 2004,
43 experiments 1 and 2). Specifically, a series of experimental studies carried out by
44
45 Lopes, Vala and Garcia-Marques (2007) showed that participants perceived greater
46 validity in decisions or opinions of a highly consensual group, when compared to a less
47
48 consensual one. More interestingly, these studies also showed that greater validity was
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Self-knowledge and use of consensus and heterogeneity information 4

1
2
3 attributed to decisions or opinions of a heterogeneous group, while lesser validity was
4
5 attributed to a homogeneous one.
6

7
8 In general terms, these findings can be framed within the assumption that people not
9
10 only create and share knowledge about reality (Hardin and Higgins, 1996; Thompson,
11
12 Levine and Messick, 1999), but they also share the principles through which they can
13
14 produce an accurate view of the reality (Kruglanski, 1989). However, it has been
15
16 argued that cognitive or situational aspects shape the use of shared principles, as it is
17
18 the case of consensus and heterogeneity informational cues (Chambres, Bonin, Izaute
19
20 and Marescaux, 2002; for an empirical illustration see Badea, Brauer and Rubin,
21
22 2012). In this sense, the question addressed in this article regards the impacts of the
23
24 activation of self-knowledge on the use of consensus and heterogeneity information
25
26 while judging the validity of groups' decisions by third-party laypeople.
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32 **Self-Knowledge and the Use of Consensus and Heterogeneity Information**

33
34 A bulk of empirical research shows that self-knowledge has implications in the
35
36 ways people sample, assess, and process information leading to differences in social
37
38 behaviour (e.g., Cross, Hardin and Gercek-Swing, 2011; Kühnen and Oyserman, 2002;
39
40 Markus and Kitayama, 1999ab; Markus and Kitayama, 2003). Following Triandis
41
42 (1989), we can argue that independent-self individuals give priority to their personal
43
44 goals over the goals of the collective, and perceive themselves as more independent of
45
46 other persons (Oyserman, Coon and Kimmelmeier, 2002), which could prompt them
47
48 to perceive greater heterogeneity among groups of individuals.
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50

51
52 Interdependent-self individuals, on the contrary, do not make such a distinction
53
54 between personal and collective goals; they share resources and feel interdependent
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56 relative to other persons of the same group (Triandis, 1989); or share a common
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3 heritage and background and perceive society as an “extended family” (Earley and
4
5 Gibson, 1998). In this sense, and unlike interdependent-self individuals, independent-
6
7 self individuals could be more prone to perceive groups of individuals as homogeneous
8
9 entities.

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11
12 Moreover, other researches also show that priming aspects of the self clearly
13
14 impacts on the ways people process information (e.g., Ybarra and Trafimow, 1998;
15
16 Aaker and Lee, 2001; Kühnen and Oyserman, 2002). For example, Aaker and
17
18 Maheswaran (1997) argue that members of collectivist cultures tend to adopt heuristic
19
20 rather than systematic strategies of information processing. Inversely, members of
21
22 individualist cultures do not share these same strategies. Indeed, these authors
23
24 empirically demonstrate that consensus (an heuristic information cue; cf. Bohner et al.,
25
26 2008) has high diagnosticity in collectivist cultures, and low diagnosticity in
27
28 individualist ones. A similar argument is proposed by Bechtoldt, De Dreu, Nijstad and
29
30 Choi (2010) suggesting that the tendency to seek social consensus is stronger among
31
32 individuals with a pro-social (i.e. interdependent) rather than a pro-self (i.e.,
33
34 independent) motivation.
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38
39 Bearing these arguments in mind, we believe that the promotion of interdependent
40
41 or independent self-knowledge might impact differently in the process of validation of
42
43 groups’ decisions, especially regarding the perceived utility of the information
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45 conveyed by group consensus and heterogeneity (Goethals, 1976; Goethals and Darley,
46
47 1977; Goethals and Klein, 2000). This means that when an independent self-construal
48
49 is promoted individuals might perceive greater relevance in heterogeneity information,
50
51 while lower relevance is perceived in consensus information. Indeed and assuming that
52
53 consensus has lower diagnosticity and conveys the impressions of a homogenised
54
55 ensemble of group members, independent-self individuals might be more prone to
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sample individualised information, i.e., heterogeneity information, as to ascertain consensus composition.

On the contrary, promoting an interdependent self-construal might lead individuals to focus on similarities between self and others and pay low attention to individualized information (i.e., heterogeneity information). As a result, similarities between individuals, i.e., group homogeneity information might be, in this latter case, entangled with the information about consensus, which might lead interdependent-self individuals to overlook this type of information. In this case, group heterogeneity information might be downgraded since it does not match consensus information. And this might be the case since consensus originates from the perception that a majority of individuals agree with a specific position (Moscovici and Doise, 1992), and not from the perceived composition of this majority in terms of the heterogeneity or the homogeneity of individuals or from the processes through which individuals come to agree with each other (Lopes et al., 2007; Vala et al., 2011; Lopes, Vala, Oberlé and Drozda-Senkowska, 2014). Therefore, in a situation where an interdependent self-construal is promoted consensual information, and not heterogeneity information, will be more relevant in the process of validating groups' decisions.

It should be noted that we are positing that consensus information is relatively unaffected either by the activation of interdependent or independent self-construal. Indeed, and as proposed by dual-process models of information processing, we know that consensus information is assumed to have a heuristic value (Darke, Chaiken, Bohner, Einwiller, Erb and Hazlewood, 1998), and that heuristic information is rather independent of activation of cognitive or contextual constraints (e.g. Gigerenger and Brighton, 2001).

Overview of Studies

In the two studies presented below, we analyse the differential effects of activation of independent or interdependent self-construal on the use of group consensus and heterogeneity information in the validation of groups' decisions and opinions paradigm following Lopes et al. (2007) procedure. In this sense, and building on these procedures, we are hypothesising that when an interdependent self-construal is promoted participants will base their judgments on consensus information. Accordingly, they will not make use of heterogeneity information while judging the validity of group's decisions. Inversely, when an independent self-construal is promoted, participants will be more attentive to individual information, and they will be more prompt to make use of heterogeneity information in association with consensus so as to perceive validity in groups' positions.

The studies presented in this article use different priming manipulations of independent or interdependent views of the self. In study 1, a procedure similar to the one used by Kühnen and Hannover (2000) was deployed, but introducing some modifications. Instead of scrambled sentences, incomplete or truncated sentences were used (see Verplanken and Holland, 2002, study 2, for a similar procedure). In study 2, we adapted the pronoun-circling task of Brewer and Gardner (1996) and Gardner et al. (1999) and reinforced it as a task that should be carried out in groups (interdependent-self reinforcement) or individually (independent-self reinforcement).

Ethical Statement

All the procedures performed in this article involving human participants were in accordance with the Ethical Guidelines of the host institution. The studies were noninvasive, no deception was created on participants and all data were analysed anonymously. All participants read an informed consent with the description and

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purpose of the studies and were informed that by proceeding they consented to participating, but that they could withdraw at any stage of the studies.

Study 1

Overview and Design

Based on our previous argumentation, in this first study we predicted that when an interdependent view of the self is promoted, participants do not make use of heterogeneity information while perceiving validity in a group's decision, basing their judgement on consensus information. Inversely, when an independent view of the self is activated participants make use of heterogeneity information in association with consensus.

The design of this study was a 2 (self-construal priming: independent, interdependent) x 2 (group variability: equal variability in both groups, higher variability in one group than in the other) between-participants design. Group consensus (equal and high consensus in both groups) was controlled across groups.

Method

Participants. Seventy undergraduates enrolled in different university majors participated voluntarily in this study (females: 54.3%). Participant ages varied from 18 to 33 years old ($M = 20.91$; $SD = 3.42$).

Procedure. This study was run with 4 participants per session. Participants were randomly assigned to one of the conditions of the design, and each one seated at a desk in front of a computer.

Each experimental session comprised two phases ostensibly presented as non-related to each other. Following the procedure of Kühnen and Hannover (2000) and Verplanken and Holland (2002, study 2), in the first phase participants were primed with an interdependent or independent view of the self. In the second phase,

Self-knowledge and use of consensus and heterogeneity information 9

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3 participants were presented with the validation of groups opinions and decisions task
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5 already deployed in our previous experimental studies (cf., Lopes et al., 2007).
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7
8 To cover the fact that these two phases pertained, in reality, to the same study
9
10 participants were told that the validation of group's decisions task was part of a study
11
12 of another researcher who was asking for their collaboration. At the end of the session,
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14 participants were fully debriefed and thanked. Special attention was provided as for the
15
16 debriefing of the deception induced to participants due to the presentation of one same
17
18 study as two non-related experiments. None of the participants reported any suspicion
19
20 about the experimental procedure.
21

22 23 **Independent and dependent variables.**

24 25 *Phase 1: Activation of independent and interdependent views of the self.*

26
27 Participants were informed that they were going to see four sentences presented in a
28
29 computer screen for 3 seconds each and that they should read them attentively and try
30
31 to memorise them. Sentences were adapted from the Triandis, Bontempo, Villareal,
32
33 Asai and Lucca (1988) "self reliance with competition" and "distance from ingroups"
34
35 scales; from Triandis and Gelfand (1998) "horizontal and vertical individualism and
36
37 collectivism" scale; and from Singelis's (1994) "self-construal scale", so that item
38
39 wording would relate to the scenario presented in phase 2 (independent self-construal:
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41 "In general I prefer to depend on myself, even when I work in a team", "I am not to
42
43 blame when one of my co-workers fails"; interdependent self-construal: "Giving to my
44
45 colleagues is beneficial for me also", "I like to share the resources that I possess with
46
47 my co-workers").
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52 After this, each participant received a booklet depicting the sentences they had
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54 previously seen. However, these sentences were truncated. Participants were asked to
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56 complete them with the help of three possible solutions [for example, "I feel good
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Self-knowledge and use of consensus and heterogeneity information 10

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3 when _____ (1) I work with my colleagues, (2) I cooperate with my colleagues, (3) I
4 am with my colleagues”]. Similarly to Kühnen and Hannover (2000) priming, any of
5 the solutions would complete the sentence in such a way that it would reflect either an
6 independent or an interdependent self-construal.
7
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10
11 *Phase 2: Validation of groups’ decisions scenario.* At the onset of this phase, each
12 participant received a new booklet. In it an everyday life situation was described,
13 specifically the process of decision making regarding a new organizational strategic
14 plan: two groups of collaborators were involved in the decision process – group “A”
15 and group “B” – and these groups had opposing views concerning this strategic plan.
16 Both groups sustained their ideas with high consensus (participants were told that 80%
17 of the members supported their group’s strategic plan), and were presented as
18 composed either of homogeneous or heterogeneous members. The actual plans were
19 never presented to participants. After this, participants had to evaluate the credibility
20 regarding the decision of each group, i.e., group A and group B, based on the
21 information presented. This procedure was adapted from the scenarios used in previous
22 experimental studies (cf., Lopes et al., 2007).
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38 *Group members’ homogeneity vs. heterogeneity.* Participants in the “equal
39 variability in both groups” condition read that both groups were either homogeneous
40 (i.e., composed by members belonging to the same departments of the organization –
41 either financial or human resources management or even research and forecasting
42 departments), or heterogeneous (i.e., composed by members belonging to different
43 departments of the organization – one third of members from financial department, one
44 third from human resources management department and one third from research and
45 forecasting department).
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In the condition “higher variability in one group than in the other” participants read that one group was homogeneous (i.e., composed by members belonging to the same department of the organization) whereas the other was heterogeneous (i.e., composed by members belonging to different departments of the organization).

Dependent variables.

Participants were asked to rate the credibility that they perceived in the strategic plan of group A and group B on a 9-point Likert-type scale (1 = low credibility; 5 = moderate credibility; 9 = high credibility). Following Lopes et al. (2007), we computed a difference score between the credibility attributed to groups B and A, and used it for our analyses. This score ranges from -8 (lowest credibility attributed to group B) to +8 (highest credibility attributed to group B), with 0 indicating equal credibility attributed to both groups. This difference score is a reasonable measure to depict the perceived distance in terms of credibility between the two groups under evaluation.

At the end of the questionnaire, participants answered to some socio-demographic questions, specifically their age and gender.

Results

Table 1 presents a summary of means and standard deviations of perceived credibility and number of participants per design condition.

Insert table 1 here

Our hypotheses were tested with a 2 (self-construal priming: independent, interdependent) x 2 (group variability: equal variability in both groups, higher variability in one group than in the other) ANOVA. Results showed a variability main effect, $F(1,70) = 7.45, p < .01, \eta_p^2 = .10, 95\% CI [.015, .213]$, evidencing that participants

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tended to perceive more credibility in group B when it was presented as more heterogeneous than to group A ($M_{\text{equal variability in both groups}} = -.11$, $SD = .77$ vs. $M_{\text{higher variability in one group than in the other}} = .82$, $SD = 1.94$, $d = .65$, $95\% CI [.315, .983]$). This result replicated our previous findings (Lopes et al., 2007). Also, the predicted contextual activation x group variability interaction was significant, $F(1,70) = 4.57$, $p < .04$, $\eta_p^2 = .06$, $95\% CI [.002, .167]$. The self-construal priming was non-significant, $F(1,70) = 1.26$, $p < .27$, $\eta_p^2 = .02$, $95\% CI [.000, .096]$. The MSE for each of these effects was 1.99.

Simple effects were calculated over this interaction effect. The differences between the credibility perceived in group A and group B under the activation of an interdependent view of the self proved non-significant, $F(1,36) = 0.26$, $MSE = 1.35$, $p = 0.61$, $\eta_p^2 = .01$, $95\% CI [.000, .105]$, showing that participants perceived similar levels of credibility in both groups, even in the condition where one group was depicted as more heterogeneous than the other ($M_{\text{equal variability in both groups}} = .05$, $SD = .51$ vs. $M_{\text{higher variability in one group than in the other}} = .25$, $SD = 1.65$, $d = .18$, $95\% CI [-.190, .550]$).

Under the activation of an independent view of self, participants perception of credibility in group A and group B positions proved to be different, $F(1,34) = 8.64$, $MSE = 2.67$, $p < .01$, $\eta_p^2 = .21$, $95\% CI [.037, .377]$, showing as predicted that participants perceived greater validity in the decision of the more heterogeneous group ($M_{\text{equal variability in both groups}} = -.29$, $SD = .99$ vs. $M_{\text{higher variability in one group than in the other}} = 1.35$, $SD = 2.09$, $d = 1.04$, $95\% CI [.506, 1.572]$).

Discussion

In this study, we provided initial evidence for the moderation effect of the activation of independent and interdependent views of the self on the use of the heterogeneity information in the perceived validity of groups decisions. Indeed, the

Self-knowledge and use of consensus and heterogeneity information 13

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2
3 interaction effect between self-construal priming and group variability clearly showed
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5 that when an independent view of the self is activated, participants use heterogeneity
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7 information while perceiving credibility in the decisions of a group. On the contrary,
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9 this same usage is impaired under the activation of an interdependent view of the self.
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12 Although our hypotheses were generally supported by this study, the understanding
13
14 of this moderation was not fully addressed mainly due to design constraints. The first
15
16 one concerns the absence of a full consensus manipulation that prevented us from
17
18 testing our hypotheses in a complete way, especially under the interdependent self-
19
20 activation. In fact, our results do not unequivocally show that participants under this
21
22 priming activation rely on consensual information and overlook heterogeneity
23
24 information.
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28 A similar problem might be raised for participants under the independent self
29
30 priming, since our hypotheses predict the use of consensus and heterogeneity
31
32 information to judge the validity of group positions. Study 2 will provide evidence that
33
34 allows us overcoming these problems, by replicating the effects of the independent and
35
36 interdependent priming in a design where consensus (high vs. low) and heterogeneity
37
38 information are fully manipulated.
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40

41
42 Furthermore, it could be argued that our priming manipulation might have
43
44 interfered in unexpected ways with the situation presented in the second phase of the
45
46 experiment. In reality, the activation of independent and interdependent views of the
47
48 self might have facilitated participants beliefs concerning group functioning, which in
49
50 turn might have influenced the answers in phase 2. In the following study, the priming
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52 situation is totally orthogonal regarding the validation scenario, thus promoting the
53
54 internal validity of our experimental paradigm.
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Study 2

Overview and Hypotheses

In this study, the priming technique followed the pronoun-circling task procedure proposed by Brewer and Gardner (1996). Contrary to study 1, group consensus was manipulated along with the heterogeneity of group composition, and additional items tapping participants perceived validity in both groups' decisions were introduced.

Following the hypotheses set in study 1, in the present study we predicted a triple interaction involving self-knowledge priming, consensus and variability information. In this sense, under the activation of an interdependent view of the self and when two groups were presented as having equal consensus, participants would not differentiate the perceived validity of these groups' decisions despite their characterisation in terms of variability. An inverse pattern was expected for the conditions in which the two groups were described as varying in terms of consensus. Thus, when one group was more consensual than the other, participants were expected to attribute greater validity to the more consensual group, independently of their characterisation in terms of variability. Briefly, under the activation of an interdependent view of the self, we expected the effect of consensus to prevail while still with a non-significant main effect of group variability.

When an independent view of the self was activated, and the two groups were depicted as having equal consensus, we expected participants to perceive equal validity in groups' decisions. When the groups were presented as differing in terms of consensus, greater validity would be perceived in the more consensual group. But contrarily to the interdependent-self priming, we were also expecting group variability information to impact perceived validity. In this sense, independent-self participants would perceive greater validity in a group presented as heterogeneous, as opposed to a

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2
3 homogeneous one, while equal validity would be perceived when groups were
4
5 presented as equally heterogeneous or homogeneous. In a nutshell, under the activation
6
7 of an independent view of the self we expected two significant main effects, one of
8
9 consensus and one of group variability.
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11 12 13 14 **Design**

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16 Our hypotheses were tested with a 2 (self-construal priming: independent,
17
18 interdependent) x 2 (consensus: equal consensus in both groups, higher consensus in
19
20 one group than in the other) x 2 (group variability: equal variability in both groups,
21
22 higher variability in one group than in the other) between-participants design.
23
24

25 26 **Method**

27
28 **Participants.** 118 psychology undergraduates participated in this study (females:
29
30 66.9%). Their ages varied from 17 to 31 years old ($M = 21.36$; $SD = 3.38$). Participants
31
32 received credits for their collaboration.
33

34
35 **Procedure.** Each session comprised a maximum of six participants randomly
36
37 assigned to one of the design conditions. Each session was composed of two studies
38
39 ostensibly presented as non-related. In the first study, participants had to perform a
40
41 task involving “organizing daily information”. This first study was used to activate an
42
43 independent or interdependent view of the self, following Brewer and Gardner (1996)
44
45 procedure (2). The second study was introduced by a new experimenter, and comprised
46
47 the presentation of the validation of groups’ decisions scenario described below.
48

49
50 At the end of the session, participants were fully debriefed and thanked. Again,
51
52 special attention was provided as for the debriefing of the deception induced to
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54 participants due to the presentation of one same study as two non-related experiments.
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56 None of the participants reported any suspicion about this experimental procedure.
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Independent and dependent variables.

Activation of independent and interdependent self-construal. In the activation of an interdependent view of the self condition, every six participants arriving at the lab were asked to form two groups of three persons each. After this, they received a booklet for completion. On the first page, participants were provided with instructions informing them they were going to perform a group task. It was also mentioned that previous empirical studies showed this task to be better performed in a group environment than individually. This aimed at fostering interdependence and a sharing experience among participants.

The second page of the booklet introduced the “organization of daily information” task consisting of a search for words in a text, adapted from Brewer and Gardner (1996). Thus, under the interdependent view of the self condition participants had to search the text for plural pronouns (i.e., “we”, “ours”, etc.). There were exactly 41 pronouns scattered in the text. It described a neutral daily situation in which a couple was leaving their home in the morning to take their son to school. No specific instructions were given regarding the way groups should work throughout the task. They were only instructed to do it collectively.

The independent view of the self was activated using a similar procedure. The instructions stressed this time that participants had to perform the search task individually, and that previous empirical research had shown that people perform better when the task is carried out individually. These instructions aimed at creating a more independent and individual experience during the task. As in the former condition, participants could identify up to 41 singular pronouns (e.g., me, mine, etc.) scattered in the text.

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3 ***Validation of groups' decisions scenario.*** In the second part of the experiment,
4
5 each participant received a booklet containing a scenario describing a decision making
6
7 process over the choice of a new logo for a students' union. Two groups of students
8
9 were involved in this decision task – group “A” and group “B” – and they had
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11 opposing views regarding the logo. Both groups were characterised in terms of the
12
13 consensus sustaining their logo preference, and the variability of their internal
14
15 composition. The actual logos were never presented to participants.
16
17

18 ***Characterisation of groups in terms of consensus.*** Participants were told that both
19
20 groups held their preferred logo with equal consensus (about 80% of the members
21
22 agreed with the logo selected by their group), or that members of group B held their
23
24 preferred logo with higher consensus (about 95% of members of group B agreed with
25
26 the chosen logo), while members of group A held their preference with lower
27
28 consensus (about 65% of members of group A agreed with the selected logo).
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31 ***Group members' homogeneity vs. heterogeneity.*** In addition, groups were
32
33 described in terms of their internal composition, that is, in terms of the variability of
34
35 their members. Hence, in the condition “equal variability in both groups” participants
36
37 read that both groups (A and B) were either homogeneous (i.e. composed by students
38
39 studying for the same major) or heterogeneous (i.e., composed by students studying for
40
41 different majors). Participants in the “greater heterogeneity in one group than in the
42
43 other” condition learned that one group was homogeneous (i.e., group A was
44
45 composed by students studying for the same major), whereas the other was
46
47 heterogeneous (i.e., group B was composed by students studying for different majors).
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51 **Dependent variables.**

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53 After the presentation of the logo decision scenario, participants were asked to rate
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55 whether each group's decision was valid versus invalid, correct versus incorrect,
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credible versus not credible, adequate versus inadequate, and unjustified versus justified. All these items were measured on a semantic differential scale ranging from 1 to 6.

As in the previous study, an index of validity was computed from participant ratings of the different items (group A ratings internal consistency: $\alpha = 0.90$; group B ratings internal consistency: $\alpha = 0.88$). This single measure was obtained by subtracting the scores of validity attributed to group B from that attributed to group A. This validity index varies between -5 (highest validity attributed to group A) and + 5 (highest validity attributed to group B); in this index, 0 means that equal validity was attributed to groups A and B.

At the end of this questionnaire, participants were asked to answer some socio-demographic questions, namely their age and gender.

Results

To test our hypotheses, a 2 (self-construal priming: independent, interdependent) x 2 (consensus: equal consensus in both groups, higher consensus in one group than in the other) x 2 (group heterogeneity: equal heterogeneity/homogeneity in both groups, greater heterogeneity in one group than in the other) ANOVA was deployed. Table 2 presents a summary of means and standard deviations of perceived validity and number of participants per design conditions.

Insert table 2 here

The ANOVA results showed a main effect of consensus, $F(1,118) = 14.38, p < .000$, $\eta_p^2 = .11$, 95% CI [.035, .200], a main effect of group variability, $F(1,118) = 4.48, p < .04$, $\eta_p^2 = .04$, 95% CI [.001, .106], and a main effect of self-construal priming

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2
3 $F(1,118) = 16.83, p < .000, \eta_p^2 = .13, 95\% CI [.046, .219]$. The main effect of consensus
4
5 showed that participants perceived greater validity in group B decision in the condition
6
7 “higher consensus in one group than in the other” ($M = .66, SD = .90$), rather than in the
8
9 condition of “equal consensus” ($M = .15, SD = .63$), $d = .67, 95\% CI [.526, .803]$.

10
11 The main effect of group variability showed that participants perceived greater
12
13 validity in group B decision in the condition “greater heterogeneity in one group than
14
15 in the other” ($M = .54, SD = .94$), than in the condition in which both groups were
16
17 presented as having equal heterogeneity/homogeneity ($M = .26, SD = .63$), $d = .35, 95\%$
18
19 $CI [.207, .494]$.

20
21 More interestingly, a significant triple interaction self-construal priming x
22
23 consensus x group heterogeneity was obtained, $F(1,118) = 3.90, p = .05, \eta_p^2 = .03, 95\%$
24
25 $CI [.000, .099]$. All the remaining interaction effects were non significant, specifically
26
27 self-construal priming x consensus, $F(1,118) = .38, p = .54, \eta_p^2 = .003, 95\% CI [.000,$
28
29 $.040]$, self-construal x group variability, $F(1,118) = 2.71, p = .10, \eta_p^2 = .023, 95\% CI$
30
31 $CI [.000, .083]$, and consensus x group variability, $F(1,118) = .18, p = .68, \eta_p^2 = .002, 95\%$
32
33 $CI [.000, .032]$. The triple interaction was decomposed into two double interaction
34
35 effects by self-knowledge priming as described below. The MSE for each of the main,
36
37 double, and triple effects was .50.

38
39 Regarding the activation of an independent self-construal, the results portrayed a
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41 main effect of consensus, $F(1,54) = 7.52, p < .01, \eta^2 = .12, 95\% CI [.019, .260]$, and more
42
43 importantly a main effect of group variability, $F(1,54) = 5.48, p < .03, \eta^2 = .09, 95\% CI$
44
45 $CI [.007, .224]$. The interaction effect did not reach significance, $F(1,54) = 2.22, p = .14, \eta^2$
46
47 $= .04, 95\% CI [.000, .150]$. The MSE for each of these effects was .60. In agreement
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49 with our hypotheses, the main effect of consensus showed, as predicted, that
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51 participants perceived greater validity in group B decision in the condition “higher
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consensus in one group than in the other” ($M=1.00$, $SD = .83$), than when groups were presented as equally consensual ($M=.40$, $SD = .79$), $d=.76$, 95% $CI [.54, .97]$.

More importantly, the main effect of group variability showed that participants perceived greater validity in group B decision in the condition “higher variability in one group than in the other” ($M = 0.96$, $SD = .99$), than in the condition in which both groups were presented as having equal variability ($M = 0.42$, $SD = .59$), $d=.66$, 95% $CI [.45, .88]$.

Turning now to the activation of an interdependent view of the self, results showed a main effect of consensus, $F(1,64) = 6.55$, $p < .02$, $\eta_p^2 = .09$, 95% $CI [.011, .214]$. The main effect of group variability did not attain significance, $F(1,64) = .14$, $p = .71$, $\eta_p^2 = .002$, 95% $CI [.000, .053]$. The interaction was also non-significant, $F(1,64) = 1.57$, $p = .22$, $\eta_p^2 = .02$, 95% $CI [.000, .113]$. The MSE for each of these effects was .42. In agreement with our hypotheses, the main effect of consensus reveals participants perceiving greater validity in group B decision in the condition “higher consensus in one group than in the other” ($M = .37$, $SD = .86$), rather than in the condition in which the two groups were presented as having equal consensus ($M = -.05$, $SD = .36$), $d = .65$, 95% $CI [.49, .81]$.

Discussion

In this second study, participants were primed with independent and interdependent views of the self through the use of a different priming technique and were presented with a new scenario of validation of groups’ decisions. This new priming was objectively unrelated to the scenario presented in the second phase of the experiment, so that explanations related to eventual interference of the priming with the scenario could be dismissed. In addition, the validation scenario manipulated consensus instead of controlling it across the design conditions (as it was the case of study 1), so that the

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3 role of this information could be fully understood within the scope of activating
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5 independent vs. interdependent views of the self. Furthermore, new items were added
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7 to the measurement of perceived validity of group decisions.
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10 The results of this second study generally supported our hypotheses. Indeed,
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12 participants under the activation of an independent view of the self perceived greater
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14 validity in the heterogeneous group decision than in the homogeneous one, while not
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16 distinguishing the groups in terms of their validity when depicted as equally variable.
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18 Moreover, when groups were presented as differing in terms of consensus, participants
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20 perceived greater validity in the more consensual one, while the same levels of validity
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22 were perceived in both groups when presented as equally consensual. These results
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24 replicate study 1, but extend them so as to allow the understanding of the role of
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26 consensus under the activation of an independent view of the self. In fact, in the
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28 present study these results enable us to conclude that participants primed with an
29
30 independent view of the self make use of variability information alongside consensus
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32 information.
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36 The results concerning the activation of an interdependent view of the self also
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38 replicate the results of study 1, showing that participants did not differentiate the
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40 perception of validity in group positions in the conditions where they were perceived
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42 as equally consensual, not even when one group was characterised as more diverse
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44 than another. In fact, in the conditions in which groups differed in terms of consensus
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46 and variability, participants perceived greater validity in the more consensual group,
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48 independently of variability manipulation.
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51 52 **Conclusions**

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54 In this article, we analysed the moderating effect of activating independent vs.
55
56 interdependent views of the self on the use of heterogeneity and consensus information
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3 while perceiving validity in groups decisions. This moderator was chosen for two main
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5 reasons. Firstly, as we pointed out in the introduction, literature on independent and
6
7 interdependent self-construal agrees that these differential views of the self have an
8
9 impact on the ways people process social information (Cross, Hardin, Gercek-Swing,
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11 2011; Kühnen & Oyserman, 2002; Markus & Kitayama, 1999ab; Markus & Kitayama,
12
13 2003). In fact, we reviewed evidence that associates independent self-construal with a
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15 greater focus on individualized information and preference for heterogeneity
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17 information (e.g., Oyserman et al., 2002), whereas interdependent self-construal
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19 emerges as associated with preferences for group level (i.e., consensual) information
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21 (e.g., Triandis, 1989). Thus, both theoretical and empirical evidence of this differential
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23 information-processing process was presented and appears as highly relevant within
24
25 the context of validating groups' decisions.
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30 Secondly, we argue that heterogeneity information might cue people to perceive
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32 that consensus is composed by individuals that do not share personal bias and that
33
34 contribute in an independent way to its construction as shown by Vala et al. (2011).
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36 This argument is particularly true if we activate an independent view of the self, since
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38 heterogeneity information is used to heighten the perception of validity in groups
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40 depicted as heterogeneous and consensual, while downgrading the perceived validity
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42 of homogeneous and consensual groups. In this case, it is reasonable to sustain that
43
44 heterogeneous consensus is deemed equivalent to consensus stemming from the
45
46 individual and independent contribution of those that compose a group (Asch, 1952;
47
48 Levine, 1999). Inversely, under the activation of an interdependent view of the self,
49
50 variability information proves meaningless, because cognitive or situational factors
51
52 lead individuals into disregarding individualized information, that is, to generally base
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54 their perception of validity in group decisions using consensus information.
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3 In agreement with this framework, in study 1 we set out how participants primed
4 with an interdependent view of the self made no distinction between homogeneous or
5 heterogeneous group compositions while perceiving validity in their decisions. In
6 contrast, when primed with an independent view of the self, participants made use of
7 variability information in perceiving greater validity in the more heterogeneous and
8 consensual group and lower validity in the group depicted as homogeneous and
9 consensual.
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18 The results of the second study further support our predictions, this time providing
19 clearer evidence to the fact that under the activation of an interdependent view of the
20 self, participants disregard variability information while perceiving validity of group
21 decisions. In fact, only the main effect of consensus emerged in our results, showing
22 that participants tended to perceive greater validity in the group presented as more
23 consensual, and not to differentiate the validity perceived in both groups when
24 presented as equally consensual.
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34 Inversely, under the activation of an independent view of the self, participants
35 made use of heterogeneity and consensus information while perceiving validity in the
36 decisions of both groups, a result confirmed by the presence of a significant consensus
37 main effect and a significant main effect of variability. In this specific situation, the
38 results also show that participants perceived the consensus made up by heterogeneous
39 individuals as more valid since they were assuming that heterogeneity provides
40 individualized information. This in turn allows them to view consensus as stemming
41 from the independent contribution of the individuals creating it, discounting the
42 explanation of a consensus based on shared personal bias (cf., Goethals & Darley,
43 1977; Goethals & Klein, 2000), which is more suitable to homogeneous groups
44 reaching consensual agreement.
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3 Taking our results further we could argue that the priming of independent and
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5 interdependent self might have raised the participants' concerns regarding
6
7 informational vs. normative influence (Deutsch & Gerard, 1955). Indeed, classic and
8
9 recent studies in social influence domain, and especially in conformity evidence that
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11 interdependent individuals (e.g., Berkowitz, 1957; Bond & Smith, 1996) or
12
13 collectivists (e.g., Oh, 2013) show higher levels of conformity than independent
14
15 individuals (Di Vesta, 1959) or individualists. And this is the case since among
16
17 interdependent individuals it is believed that the major force operating is that of a
18
19 normative influence nature (Lascu & Zinkhan, 1999). However, it is also true that
20
21 interdependent individuals conform less to majority norms, especially when they are
22
23 unclear and sanctions are not likely to be imposed (Frager, 1970).
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28 In any case, our studies were not driven by classic conformity paradigms (e.g.,
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30 Asch-type conformity setting) and did not imposed any sanctions to participants, who
31
32 were free to state their decisions based on the information given in the scenarios. In
33
34 this sense, it seems plausible that in our studies individuals primed with an
35
36 interdependent view of the self might have followed the consensual information
37
38 presented in the scenarios – a normative influence cue (see Moscovici, 1980; Cialdini
39
40 & Goldstein, 2004) – as an influential cue to attribute validity to groups' decision thus
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42 lowering the costs of being inaccurate.
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46 Inversely, individuals primed with an independent view of the self and as such with
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48 informational influence concerns, might have sought for more information that would
49
50 ascertain them with the veracity of the consensus information presented in the
51
52 scenarios. In this sense, heterogeneity of group composition provided them with a cue
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54 to validate the consensus reached in each group presented, since it ascertained that
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56 consensus was reached by the agreement of relatively independent sources (Asch,
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3 1952; Lopes et al., 2014) and helped testifying the validity of the decisions reached by
4
5 the group. However, these explanations should be further explored in future research.
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8 Our results have also different impacts at an applied level, namely regarding
9
10 effective group composition and decision-making. On the one hand, the results show
11
12 how group composition can be optimized to help group members perceive greater
13
14 validity in the produced outputs. Indeed, assembling more heterogeneous groups can
15
16 set the stage for creating task forces or working teams where members can share a
17
18 more participative environment and empower them through the perception of the
19
20 importance of their independent contribution to produce valid group outputs. On the
21
22 other hand, these results also have impacts on groups' decision-making processes,
23
24 since heterogeneous groups reaching a consensus allow producing decisions that are
25
26 perceived by third-party laypeople as having greater quality and validity, than those
27
28 created by homogeneous groups. These results are in line with other classical findings
29
30 in social psychology (e.g. group think, Janis, 1972) showing that decisions made in
31
32 groups where there is pressure for uniformity, or when group members tend for
33
34 homogeneity in positions and socio-psychological characteristics, are deemed invalid,
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36 producing deleterious effects at group level.
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41 Future studies should foster the knowledge concerning the moderators of the use of
42
43 consensus and heterogeneity information, as for example under different epistemic
44
45 motivations. In this sense, future studies could be run analysing the moderating impact
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47 of need for cognitive closure (Kruglanski, 2004) on the use of these two sources of
48
49 information for validation of groups productions. Also, studies manipulating
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51 participants' cognitive resources for information processing could gives us more
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53 knowledge regarding the ways consensus and heterogeneity information is processed
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55 and its interplay on validation of groups decisions and opinions.
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Notes

(1) As third-party laypeople we refer to individuals that do not belong to or participate in groups making important decisions, but whose decisions will affect in any way their own lives.

(2) The complete materials used in this first phase are available upon request from the first author.

For Peer Review

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Table 1: Means and standard deviations of attributed credibility, and number of participants per design condition (study 1)

	Interdependent self prime	Independent self prime
Equal variability in both groups	0.05 (0.51) 20	-0.29 (0.99) 17
Higher variability in one group	0.25 (1.65) 16	1.35 (2.08) 17

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Table 2: Means and standard deviations of attributed validity, and number of participants per design condition (study 2)

	Interdependent self prime		Independent self prime	
	Equal consensus in both groups	Higher consensus in one group	Equal consensus in both groups	Higher consensus in one group
Equal variability in both groups	0.03 (0.08) 16	0.24 (0.90) 16	0.01 (0.06) 14	0.90 (0.58) 12
Higher variability in one group	-0.12 (0.50) 17	0.50 (0.82) 15	0.82 (0.99) 13	1.08 (1.01) 15

1 Self-knowledge and use of consensus and heterogeneity information 1

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3 **Varia**

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5 **Varia**

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9 **Differential impact of independent and interdependent views**
10 **of the self on the use of consensus and heterogeneity**
11 **information: The case of validity of groups' decisions**
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29
30 **Abstract**

31 In this article, we analyse the moderating effect of the activation of independent
32 and interdependent views of the self on the use of heterogeneity and consensus
33 information in the attribution of validity to group decisions. In two experimental
34 studies, we present evidence showing that the participants, when primed with an
35 interdependent view of the self, make no distinction between homogeneous or
36 heterogeneous information regarding group composition while attributing validity to
37 group decisions. Indeed, they base their validity attribution mainly on consensus
38 information. In contrast, when primed with an independent view of the self, they make
39 use of variability information as they attribute a greater validity to a more
40 heterogeneous and consensual group and a lower validity to a group depicted as
41 homogeneous and consensual. Results are discussed in light of the differential utility of
42 consensus and heterogeneity information, as well as participants' self-knowledge
43 within the processes of validation of group decisions.
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1 Self-knowledge and use of consensus and heterogeneity information 2

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6 **Keywords**

7 validation of group decisions, consensus information, heterogeneity
8 information, independence, interdependence
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11 **Résumé**

12 Dans cet article, nous analysons les effets modérateurs de l'activation d'une perception
13 de soi indépendante ou interdépendante sur l'utilisation de l'hétérogénéité et des
14 informations de consensus dans l'attribution de validité prêtée aux décisions de groupe.
15 Au travers de deux expériences, nous pouvons présenter des résultats qui tendent à
16 prouver que, lorsque les participants doivent attribuer de la validité aux décisions de
17 groupes, ceux qui sont conduits à une perception de soi comme étant interdépendants
18 ne font pas de distinction entre les informations d'homogénéité versus celles
19 d'hétérogénéité sur la composition des groupes. En effet, leur attribution de validité
20 dépend principalement des informations de consensus. En revanche, les participants
21 préparés à une perception de soi indépendante utilisent les informations de variabilité,
22 puisqu'ils attribuent une plus grande validité à un groupe hétérogène et consensuel,
23 qu'à un groupe décrit comme homogène et consensuel. Les résultats mettent en
24 lumière le rôle différentiel des informations de consensus au regard des informations
25 d'hétérogénéité et aux connaissances de soi des participants dans le processus de
26 validation des décisions de groupe.
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47 **Mots clés**

48 validation des décisions de groupe, information de consensus et information
49 d'hétérogénéité, indépendance, interdépendance
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Self-knowledge and use of consensus and heterogeneity information 3

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Introduction

In real life, as third-party laypeople,[1] we are often faced with numerous decisions or opinions and we are led to judge their validity. For instance, we are frequently asked to state if we are pro or con a new governmental policy for tax-raising; if we agree or disagree about allowing same-sex couples to adopt children, etc. In order to state our opinions or to support our decisions, we often lack the necessary knowledge and rely on the informational cues available to help us reduce uncertainty and respond in a reliable and valid way. But is the use of these informational cues moderated in any way by contextual factors, namely individuals' self-knowledge?

In this article, we will provide a brief summary of the main approaches explaining the perception of validity of opinions or decisions; we will then present theoretical and empirical evidence arguing for the important role of group consensus and heterogeneity within this realm. Afterwards, we will argue for the impact of individuals' self-knowledge on the use of group consensus and heterogeneity information in the process of perceiving validity in groups' opinions and decisions. And finally, we will present two experimental studies illustrating this particular role of individuals' self-knowledge.

This investigation is particularly relevant for several reasons. First, the literature regarding the importance and impact of group information on the perceived validity of groups' decisions is scarce and dated. Second, this line of research is particularly relevant for the understanding of the most efficacious ways underlying team building and team composition, affecting team-work and interpersonal relationships within this specific type of groups. Third, this research also contributes to the understanding of the importance of groups' decisions and their impact on everyday life of third-party laypeople. Fourth, in this article, we bridge two theoretical frameworks that, until now,

1 Self-knowledge and use of consensus and heterogeneity information 5

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3 have been separated so that, to our knowledge, their joint effects were never
4
5 empirically tested.
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8 **Opinions and decisions validation framework**

9 Traditionally, consensus has been put forward as a major cue used by individuals to
10 judge the validity of groups' decisions or opinions (Festinger, 1954; Krueger, 2000).
11
12 And in fact, when using consensus information one might perceive a greater validity in
13
14 the position of a more consensual group than that of a less consensual one (Bohner,
15
16 Dykema-Englade, Tindale and Meisenhelder, 2008).
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20 However, other informational cues can be called up to help individuals judge the
21
22 validity of groups' decisions or opinions. As Goethals, Allison and Frost (1979) point
23
24 out, individuals might use information regarding the variability or heterogeneity of
25
26 group members contributing to a consensual opinion or decision. Specifically,
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28 Goethals et al. (1979) propose that group members endorsing a specific opinion tend to
29
30 perceive heterogeneous rather than homogeneous others as endorsing a similar opinion
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32 (i.e., the "diversity effect"), this being the result of a motivation to perceive a greater
33
34 validity in the opinions they sustain.
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38 Both the consensus and variability hypotheses have been supported by correlational
39
40 (Goethals et al., 1979; Vala, Garcia-Marques, Gouveia-Pereira and Lopes, 1998; Batel
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42 and Castro, 2009) and experimental studies (Reckman and Goethals, 1973; Goethals
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44 and Nelson, 1973; Augustinova, Drozda-Senkowska and Lasticova, 2004, experiments
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46 1 and 2). Specifically, a series of experimental studies carried out by Lopes, Vala and
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48 Garcia-Marques (2007) showed that participants perceived a greater validity in
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50 decisions or opinions of a highly consensual group, when compared to a less
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52 consensual one. More interestingly, these studies also showed that greater validity was
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1 Self-knowledge and use of consensus and heterogeneity information 6
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3 attributed to decisions or opinions of a heterogeneous group, while a lesser validity
4
5 was attributed to a homogeneous one.
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8 In general terms, these findings can be framed within the assumption that people not
9
10 only create and share knowledge about reality (Hardin and Higgins, 1996; Thompson,
11
12 Levine and Messick, 1999), but also share the principles through which they can
13
14 produce an accurate view of the reality (Kruglanski, 1989). However, literature has
15
16 been arguing that cognitive or situational aspects shape the use of shared principles, as
17
18 it is the case of consensus and heterogeneity informational cues (Chambres, Bonin,
19
20 Izaute and Marescaux, 2002; for an empirical illustration see Badea, Brauer and Rubin,
21
22 2012). Thus, the question addressed in this article regards the impacts of the activation
23
24 of self-knowledge on the use of consensus and heterogeneity information while
25
26 judging the validity of groups' decisions by third-party laypeople.
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32 **Self-knowledge and the use of consensus and heterogeneity information**

33 A bulk of empirical research shows that self-knowledge has implications in the
34
35 ways people sample, assess, and process information leading to differences in social
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37 behaviour (Cross, Hardin and Gercek-Swing, 2011; Kühnen and Oyserman, 2002;
38
39 Markus and Kitayama, 1999ab; Markus and Kitayama, 2003). Following Triandis
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41 (1989), we can argue that independent-self individuals give priority to their personal
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43 goals over the goals of the collective, and perceive themselves as more independent of
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45 other persons (Oyserman, Coon and Kimmelmeier, 2002), which could prompt them
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47 to perceive a greater heterogeneity among groups of individuals.
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51 Interdependent-self individuals, on the contrary, do not make such a distinction
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53 between personal and collective goals; they share resources and feel interdependent
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55 relative to other persons of the same group (Triandis, 1989); or share a common
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1 Self-knowledge and use of consensus and heterogeneity information 7

2 heritage and background and perceive society as an “extended family” (Earley and
3 Gibson, 1998). In this sense, and unlike interdependent-self individuals, independent-
4 self individuals could be more prone to perceive groups of individuals as homogeneous
5 entities.
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11 Moreover, other researches also show that priming aspects of the self clearly
12 impacts on the ways people process information (Ybarra and Trafimow, 1998; Aaker
13 and Lee, 2001; Kühnen and Oyserman, 2002). For example, Aaker and Maheswaran
14 (1997) argue that members of collectivist cultures tend to adopt heuristic rather than
15 systematic strategies of information processing. Inversely, members of individualist
16 cultures do not share these same strategies. Indeed, these authors empirically
17 demonstrate that consensus (a heuristic information cue; Bohner et al., 2008) has high
18 diagnosticity in collectivist cultures, and low diagnosticity in individualist ones. A
19 similar argument is proposed by Bechtoldt, De Dreu, Nijstad et al. (2010) suggesting
20 that the tendency to seek social consensus is stronger among individuals with a pro-
21 social (i.e. interdependent) rather than a pro-self (i.e., independent) motivation.
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36 Bearing these arguments in mind, we believe that the promotion of interdependent
37 or independent self-knowledge might impact differently in the process of validation of
38 groups’ decisions, especially regarding the perceived utility of the information
39 conveyed by group consensus and heterogeneity (Goethals, 1976; Goethals and Darley,
40 1977; Goethals and Klein, 2000). This means that when an independent self-construal
41 is promoted individuals might perceive a greater relevance in heterogeneity
42 information, while lower relevance is perceived in consensus information. Thus,
43 assuming that consensus has lower diagnosticity and conveys the impressions of a
44 homogenised ensemble of group members, independent-self individuals might be more
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3 prone to sample individualised information (i.e., heterogeneity information), as to
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5 ascertain consensus composition.
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8 On the contrary, promoting an interdependent self-construal might lead individuals
9
10 to focus on similarities between self and others and pay less attention to individualized
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12 information (i.e., heterogeneity information). As a result, similarities between
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14 individuals (i.e., group homogeneity information) might be, in this latter case,
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16 entangled with the information about consensus, which might lead interdependent-self
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18 individuals to overlook this type of information. In this case, group heterogeneity
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20 information might be downgraded since it does not match consensus information. And
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22 this might be the case since consensus originates from the perception that a majority of
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24 individuals agree with a specific position (Moscovici and Doise, 1992), and not from
25
26 the perceived composition of this majority in terms of the heterogeneity or the
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28 homogeneity of individuals, nor from the processes through which individuals come to
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30 agree with each other (Lopes et al., 2007; Vala et al., 2011; Lopes, Vala, Oberlé and
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32 Drozda-Senkowska, 2014). Therefore, in a situation where an interdependent self-
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34 construal is promoted, consensual information, and not heterogeneity information, will
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36 be more relevant in the process of validating groups' decisions.
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41 It should be noted that we are positing that consensus information is relatively
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43 unaffected either by the activation of interdependent or independent self-construal.
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45 Indeed, and as proposed by dual-process models of information processing, we know
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47 that consensus information is assumed to have a heuristic value (Darke, Chaiken,
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49 Bohner, Einwiller, Erb and Hazlewoord, 1998), and that heuristic information is rather
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51 independent of the activation of cognitive or contextual constraints (Gigerenger and
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53 Brighton, 2001).
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1. Overview of studies

In the two studies presented below, we analyse the differential effects of activation of independent or interdependent self-construal on the use of group consensus and heterogeneity information in the validation of groups' decisions and opinions paradigm following Lopes et al. (2007) procedure. In this sense, and building on these procedures, we are hypothesising that when an interdependent self-construal is promoted, the participants will base their judgments on consensus information. Accordingly, they will not make use of heterogeneity information while judging the validity of group's decisions. Inversely, when an independent self-construal is promoted, they will be more attentive to individual information, and they will be more prompt to make use of heterogeneity information in association with consensus so as to perceive validity in groups' positions.

The studies presented in this article use different priming manipulations of independent or interdependent views of the self. In study 1, a procedure similar to the one used by Kühnen and Hannover (2000) was deployed, but introducing some modifications. Instead of scrambled sentences, incomplete or truncated sentences were used (see Verplanken and Holland, 2002, study 2, for a similar procedure). In study 2, we adapted the pronoun-circling task of Brewer and Gardner (1996) and Gardner et al. (1999) and reinforced it as a task that should be carried out in groups (interdependent-self reinforcement) or individually (independent-self reinforcement).

1.1 Ethical Statement

All the procedures performed in this article involving human participants were in accordance with the ethical guidelines of ISCTE-IUL. The studies were non-invasive, non-deceptive and all data were analysed anonymously. All participants read an informed consent with the description and purpose of the studies and were informed

1 Self-knowledge and use of consensus and heterogeneity information 10
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3 that, by proceeding, they consented to participating, but that they could withdraw at
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5 any stage of the studies.
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8 **2. Study 1**

9 **2.1 Overview and design**

10 Based on our previous argumentation, we predicted in this first study that, when an
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12 interdependent view of the self is promoted, participants will not make use of
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14 heterogeneity information while perceiving validity in a group's decision, but will base
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16 their judgement on consensus information. Inversely, when an independent view of the
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18 self is activated, they will make use of heterogeneity information in association with
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20 consensus.
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24 The design of this study was a 2 (self-construal priming: independent,
25
26 interdependent) x 2 (group variability: equal variability in both groups, higher
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28 variability in one group than in the other) between-participants design. Group
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30 consensus (equal and high consensus in both groups) was controlled across groups.
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34 **2.2 Method**

35 **Participants.** Seventy undergraduates enrolled in different university majors
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37 participated voluntarily in this study (females: 54.3%). The age of the participants
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39 varied from 18 to 33 years old ($M = 20.91$; $SD = 3.42$).
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42 **Procedure.** This study was run with 4 participants per session. Each participant was
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44 randomly assigned to one of the conditions of the design and seated at a desk in front
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46 of a computer.
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48 Each experimental session comprised two phases ostensibly presented as non-
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50 related to each other. Following the procedure of Kühnen and Hannover (2000) and
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52 Verplanken and Holland (2002, study 2), in the first phase, the participants were
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54 primed with an interdependent or independent view of the self. In the second phase,
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1 Self-knowledge and use of consensus and heterogeneity information 11

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3 they were presented with the task of validating groups' opinions and decisions already
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5 deployed in our previous experimental studies (Lopes et al., 2007).
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7 To cover the fact that these two phases pertained, in reality, to the same study
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9 participants were told that the task of validating group's decisions was part of a study
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11 led by another researcher who was asking for their collaboration. At the end of the
12
13 session, they were fully debriefed and thanked. Special attention was given to the
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15 debriefing of the deception induced unto the participants with the presentation of a
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17 single study as two non-related experiments. None of them reported any suspicion
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19 about the experimental procedure.
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22 23 24 **2.3 Independent and dependent variables**

25 *Phase 1: Activation of independent and interdependent views of the self.* The
26
27 participants were informed that they were going to see four sentences presented on a
28
29 computer screen for 3 seconds each and that they should read them attentively and try
30
31 to memorise them. Sentences were adapted from the Triandis, Bontempo, Villareal,
32
33 Asai and Lucca (1988) "self reliance with competition" and "distance from in-groups"
34
35 scales; from Triandis and Gelfand (1998) "horizontal and vertical individualism and
36
37 collectivism" scale; and from Singelis's (1994) "self-construal scale", so that item
38
39 wording would relate to the scenario presented in phase 2 (independent self-construal:
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41 "In general I prefer to depend on myself, even when I work in a team", "I am not to
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43 blame when one of my co-workers fails"; interdependent self-construal: "Giving to my
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45 colleagues is beneficial for me also", "I like to share the resources that I possess with
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47 my co-workers").
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51 After this, each participant received a booklet depicting the sentences they had
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53 previously seen. However, these sentences were truncated. The participants were asked
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55 to complete them with the help of three possible solutions [for example, "I feel good
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1 Self-knowledge and use of consensus and heterogeneity information 12
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3 when _____ (1) I work with my colleagues, (2) I cooperate with my colleagues, (3) I
4 am with my colleagues”]. Similarly to Kühnen and Hannover (2000) priming, any of
5 the solutions would complete the sentence in such a way that it would reflect either an
6 independent or an interdependent self-construal.
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11 ***Phase 2: Validation of groups' decisions scenario.*** At the onset of this phase, each
12 participant received a new booklet. In it an everyday life situation was described,
13 specifically the process of decision making regarding a new organisational strategic
14 plan: two groups of collaborators were involved in the decision process – group “A”
15 and group “B” – and these groups had opposing views concerning this strategic plan.
16 Both groups sustained their ideas with high consensus (participants were told that 80%
17 of the members supported their group's strategic plan), and were presented as
18 composed either of homogeneous or heterogeneous members. The actual plans were
19 never presented to the participants. After this, they had to evaluate the credibility
20 regarding the decision of each group (i.e., group A and group B) based on the
21 information presented. This procedure was adapted from the scenarios used in previous
22 experimental studies (Lopes et al., 2007).
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38 ***Group members' homogeneity vs. heterogeneity.*** The participants in the “equal
39 variability in both groups” condition read that both groups were either homogeneous
40 (i.e., composed by members belonging to the same departments of the organisation –
41 either financial or human resources management or even research and forecasting
42 departments), or heterogeneous (i.e., composed by members belonging to different
43 departments of the organization – one third of members from financial department, one
44 third from human resources management department and one third from research and
45 forecasting department).
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Self-knowledge and use of consensus and heterogeneity information 13

In the condition of “higher variability in one group than in the other”, the participants read that one group was homogeneous (i.e., composed by members belonging to the same department of the organisation) whereas the other was heterogeneous (i.e., composed by members belonging to different departments of the organization).

2.4 Dependent variables

The participants were asked to rate the credibility that they perceived in the strategic plan of group A and group B on a 9-point Likert-type scale (1 = low credibility; 5 = moderate credibility; 9 = high credibility). Following Lopes et al. (2007), we computed a difference score between the credibility attributed to groups B and A, and used it for our analyses. This score ranges from -8 (lowest credibility attributed to group B) to +8 (highest credibility attributed to group B), with 0 indicating equal credibility attributed to both groups. This difference score is a reasonable measure to depict the perceived distance in terms of credibility between the two groups under evaluation.

At the end of the questionnaire, participants answered to some socio-demographic questions, specifically their age and gender.

2.5 Results

Table 1 presents a summary of means and standard deviations of perceived credibility and number of participants per design condition.

Table 1 about here

Our hypotheses were tested with a 2 (self-construal priming: independent, interdependent) x 2 (group variability: equal variability in both groups, higher variability in one group than in the other) analysis of variance (ANOVA). Results

1 Self-knowledge and use of consensus and heterogeneity information 14
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3 showed a variability main effect, $F(1,70) = 7.45, p < .01, \eta_p^2 = .10, 95\% CI [.015,$
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5 $.213]$, evidencing that the participants tended to perceive more credibility in group B
6
7 when it was presented as more heterogeneous than to group A ($M_{\text{equal variability in both}}$
8
9 $\text{groups} = -.11, SD = .77$ vs. $M_{\text{higher variability in one group than in the other}} = .82, SD = 1.94, d = .65,$
10
11 $95\% CI [.315, .983]$). This result replicated our previous findings (Lopes et al., 2007).
12
13 Also, the predicted contextual activation x group variability interaction was significant,
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15 $F(1,70) = 4.57, p < .04, \eta_p^2 = .06, 95\% CI [.002, .167]$. The self-construal priming was
16
17 non-significant, $F(1,70) = 1.26, p < .27, \eta_p^2 = .02, 95\% CI [.000, .096]$. The mean
18
19 square error (MSE) for each of these effects was 1.99.
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21
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23 Simple effects were calculated over this interaction effect. The differences between
24
25 the credibility perceived in group A and group B under the activation of an
26
27 interdependent view of the self proved non-significant, $F(1,36) = 0.26, MSE = 1.35,$
28
29 $p = 0.61, \eta_p^2 = .01, 95\% CI [.000, .105]$, showing that the participants perceived similar
30
31 levels of credibility in both groups, even in the condition where one group was
32
33 depicted as more heterogeneous than the other ($M_{\text{equal variability in both groups}} = .05, SD = .51$
34
35 vs. $M_{\text{higher variability in one group than in the other}} = .25, SD = 1.65, d = .18, 95\% CI [-.190, .550]$).
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39 Under the activation of an independent view of self, the participants perception of
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41 credibility in group A's and group B's positions proved to be different, $F(1,34) = 8.64,$
42
43 $MSE = 2.67, p < .01, \eta_p^2 = .21, 95\% CI [.037, .377]$, showing as predicted that the
44
45 participants perceived a greater validity in the decision of the more heterogeneous
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47 group ($M_{\text{equal variability in both groups}} = -.29, SD = .99$ vs. $M_{\text{higher variability in one group than in the}}$
48
49 $\text{other} = 1.35, SD = 2.09, d = 1.04, 95\% CI [.506, 1.572]$).
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52 2.6 Discussion

53 In this study, we provided initial evidence for the moderation effect of the
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55 activation of independent and interdependent views of the self on the use of the
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Self-knowledge and use of consensus and heterogeneity information 15

heterogeneity information in perceiving the validity of group decisions. Indeed, the interaction effect between self-construal priming and group variability clearly showed that when an independent view of the self is activated, the participants use heterogeneity information while perceiving credibility in the decisions of a group. On the contrary, this same usage is impaired under the activation of an interdependent view of the self.

Although our hypotheses were generally supported by this study, the understanding of this moderation was not fully addressed mainly due to design constraints. The first one concerns the absence of a full consensus manipulation that prevented us from testing our hypotheses in a complete way, especially under the interdependent self-activation. In fact, our results do not unequivocally show that the participants under this priming activation rely on consensual information and overlook heterogeneity information.

A similar problem might be raised for participants under the independent-self priming, since our hypotheses predict the use of consensus and heterogeneity information to judge the validity of group positions. Study 2 will provide evidence that allows us to overcome these problems by replicating the effects of the independent and interdependent priming in a design where consensus (high vs. low) and heterogeneity information are fully manipulated.

Furthermore, it could be argued that our priming manipulation might have interfered in unexpected ways with the situation presented in the second phase of the experiment. In reality, the activation of independent and interdependent views of the self might have facilitated the participants' beliefs concerning group functioning, which in turn might have influenced the answers in phase 2. In the following study, the

1 Self-knowledge and use of consensus and heterogeneity information 16

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3 priming situation is totally orthogonal regarding the validation scenario, thus
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5 promoting the internal validity of our experimental paradigm.
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3 . Study 2

3.1 Overview and design

In this study, the priming technique followed the pronoun-circling task procedure proposed by Brewer and Gardner (1996). Contrary to study 1, group consensus was manipulated along with the heterogeneity of group composition, and additional items tapping the participants' perceived validity in both groups' decisions were introduced.

Following the hypotheses set in study 1, in the present study we predicted a triple interaction involving self-knowledge priming, consensus and variability information. In this sense, under the activation of an interdependent view of the self, and when two groups were presented as having equal consensus, the participants would not differentiate the perceived validity of these groups' decisions despite their characterisation in terms of variability. An inverse pattern was expected for the conditions in which the two groups were described as varying in terms of consensus. Thus, when one group was more consensual than the other, the participants were expected to attribute a greater validity to the more consensual group, independently of their characterisation in terms of variability. Briefly, under the activation of an interdependent view of the self, we expected the effect of consensus to prevail while still with a non-significant main effect of group variability.

When an independent view of the self was activated, and the two groups were depicted as having equal consensus, we expected the participants to perceive equal validity in groups' decisions. When the groups were presented as differing in terms of consensus, a greater validity would be perceived in the more consensual group. But contrarily to the interdependent-self priming, we were also expecting group variability information to impact perceived validity. In this sense, independent-self participants would perceive a greater validity in a group presented as heterogeneous, as opposed to a homogeneous one, while equal validity would be perceived when groups were

1 Self-knowledge and use of consensus and heterogeneity information 18
2
3 presented as equally heterogeneous or homogeneous. In a nutshell, under the activation
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5 of an independent view of the self we expected two significant main effects; one of
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7 consensus and one of group variability.
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10 Our hypotheses were tested with a 2 (self-construal priming: independent,
11
12 interdependent) x 2 (consensus: equal consensus in both groups, higher consensus in
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14 one group than in the other) x 2 (group variability: equal variability in both groups,
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16 higher variability in one group than in the other) between-participants design.
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18 19 **3.2 Method**

20 **Participants.** 118 psychology undergraduates participated in this study (females:
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22 66.9%). Their ages varied from 17 to 31 years old ($M = 21.36$; $SD = 3.38$). Participants
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24 received credits for their collaboration.
25

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27 **Procedure.** Each session comprised a maximum of six participants randomly
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29 assigned to one of the design conditions and each was composed of two studies
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31 ostensibly presented as non-related. In the first study, the participants had to perform a
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33 task involving “organising daily information”. This first study was used to activate an
34
35 independent or interdependent view of the self, following Brewer and Gardner (1996)
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37 procedure.[2] The second study was introduced by a new experimenter, and comprised
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39 the presentation of the validation of groups’ decisions scenario described below.
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43 At the end of the session, the participants were fully debriefed and thanked. Again,
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45 special attention was given to the debriefing of the deception induced unto the
46
47 participants with the presentation of a single study as two non-related experiments.
48
49 None of them reported any suspicion about this experimental procedure.
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51 52 **3.3 Independent and dependent variables.**

53 **Activation of independent and interdependent self-construal.** In the activation of
54
55 the condition of “interdependent view of the self”, every six participants arriving at the
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57 lab were asked to form two groups of three persons each. After this, they received a
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booklet for completion. On the first page, the participants were provided with instructions informing them they were going to perform a group task. It was also mentioned that previous empirical studies showed this task to be better performed in a group environment than individually. This aimed at fostering interdependence and a sharing experience among participants.

The second page of the booklet introduced the “organisation of daily information” task consisting of a search for words in a text, adapted from Brewer and Gardner (1996). Thus, under the “interdependent view of the self” condition, the participants had to search the text for plural pronouns (i.e., “we”, “ours”, etc.). There were exactly 41 pronouns scattered in the text. It described a neutral daily situation in which a couple was leaving their home in the morning to take their son to school. No specific instructions were given regarding the way groups should work throughout the task. They were only instructed to do it collectively.

The independent view of the self was activated using a similar procedure. This time, the instructions stressed that the participants had to perform the search task individually, and that previous empirical research had shown that people perform better when the task is carried out individually. These instructions aimed at creating a more independent and individual experience during the task. As in the former condition, the participants could identify up to 41 singular pronouns (e.g., me, mine, etc.) scattered in the text.

Validation of groups’ decisions scenario. In the second part of the experiment, each participant received a booklet containing a scenario which described a decision making process over the choice of a new logo for a students’ union. Two groups of students were involved in this decision task – group “A” and group “B” – and they had opposing views regarding the logo. Both groups were characterised in terms of the

1 Self-knowledge and use of consensus and heterogeneity information 20
2
3 consensus sustaining their logo preference, and the variability of their internal
4
5 composition. The actual logos were never presented to the participants.
6

7 *Characterisation of groups in terms of consensus.* The participants were told that
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9 both groups held their preferred logo with equal consensus (about 80% of the members
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11 agreed with the logo selected by their group), or that members of group B held their
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13 preferred logo with higher consensus (about 95% of members of group B agreed with
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15 the chosen logo), while members of group A held their preference with lower
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17 consensus (about 65% of members of group A agreed with the selected logo).
18
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20 *Group members' homogeneity vs. heterogeneity.* In addition, groups were
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22 described in terms of their internal composition, that is, in terms of the variability of
23
24 their members. Hence, in the condition "equal variability in both groups", the
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26 participants read that both groups (A and B) were either homogeneous (i.e., composed
27
28 by students studying for the same major) or heterogeneous (i.e., composed by students
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30 studying for different majors). The participants in the "greater heterogeneity in one
31
32 group than in the other" condition learned that one group was homogeneous (i.e.,
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34 group A was composed by students studying for the same major), whereas the other
35
36 was heterogeneous (i.e., group B was composed by students studying for different
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38 majors).
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43 **3.4 Dependent variables.**

44 After the presentation of the logo decision scenario, the participants were asked to
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46 rate whether each group's decision was valid versus invalid, correct versus incorrect,
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48 credible versus not credible, adequate versus inadequate, and unjustified versus
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50 justified. All these items were measured on a semantic differential scale ranging from 1
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52 to 6.
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As in the previous study, an index of validity was computed using the different items rated by the participants (group A ratings internal consistency: $\alpha = 0.90$; group B ratings internal consistency: $\alpha = 0.88$). This single measure was obtained by subtracting the scores of validity attributed to group B from that attributed to group A. This validity index varies between -5 (highest validity attributed to group A) and + 5 (highest validity attributed to group B); in this index, 0 means that equal validity was attributed to groups A and B.

At the end of this questionnaire, the participants were asked to answer some socio-demographic questions, namely their age and gender.

3. 5 Results

To test our hypotheses, a 2 (self-construal priming: independent, interdependent) x 2 (consensus: equal consensus in both groups, higher consensus in one group than in the other) x 2 (group heterogeneity: equal heterogeneity/homogeneity in both groups, greater heterogeneity in one group than in the other) ANOVA was deployed. Table 2 presents a summary of means and standard deviations of perceived validity and number of participants per design conditions.

Table 2 about here

The ANOVA results showed a main effect of consensus, $F(1,118) = 14.38$, $p < .000$, $\eta_p^2 = .11$, 95% CI [.035, .200], a main effect of group variability, $F(1,118) = 4.48$, $p < .04$, $\eta_p^2 = .04$, 95% CI [.001, .106], and a main effect of self-construal priming $F(1,118) = 16.83$, $p < .000$, $\eta_p^2 = .13$, 95% CI [.046, .219]. The main effect of consensus showed that the participants in the condition of “higher consensus in one group than in the other” perceived a greater validity in group B’s decision

1 Self-knowledge and use of consensus and heterogeneity information 22

2
3 ($M = .66$, $SD = .90$) than those in the condition of “equal consensus” ($M = .15$,
4
5 $SD = .63$), $d = .67$, 95% CI [.526, .803].

6
7 The main effect of group variability showed that the participants in the “greater
8
9 heterogeneity in one group than in the other” condition perceived a greater validity in
10
11 group B’s decision ($M = .54$, $SD = .94$), than in the condition in which both groups
12
13 were presented as having equal heterogeneity/homogeneity ($M = .26$, $SD = .63$),
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15 $d = .35$, 95% CI [.207, .494].

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17 More interestingly, a significant triple interaction self-construal priming x
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19 consensus x group heterogeneity was obtained, $F(1,118) = 3.90$, $p = .05$, $\eta_p^2 = .03$,
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21 95% CI [.000, .099]. All the remaining interaction effects were non significant,
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23 specifically self-construal priming x consensus, $F(1,118) = .38$, $p = .54$, $\eta_p^2 = .003$,
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25 95% CI [.000, .040], self-construal x group variability, $F(1,118) = 2.71$, $p = .10$,
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27 $\eta_p^2 = .023$, 95% CI [.000, .083], and consensus x group variability, $F(1,118) = .18$,
28
29 $p = .68$, $\eta_p^2 = .002$, 95% CI [.000, .032]. The triple interaction was decomposed into
30
31 two double interaction effects by self-knowledge priming as described below. The
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33 MSE for each of the main, double, and triple effects was .50.

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35 Regarding the activation of an independent self-construal, the results portrayed a
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37 main effect of consensus, $F(1,54) = 7.52$, $p < .01$, $\eta^2 = .12$, 95% CI [.019, .260], and
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39 more importantly a main effect of group variability, $F(1,54) = 5.48$, $p < .03$, $\eta^2 = .09$,
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41 95% CI [.007, .224]. The interaction effect did not reach significance, $F(1,54) = 2.22$,
42
43 $p = .14$, $\eta^2 = .04$, 95% CI [.000, .150]. The MSE for each of these effects was .60. In
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45 agreement with our hypotheses, the main effect of consensus showed, as predicted, that
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47 the participants in the condition of “higher consensus in one group than in the other”
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49 perceived greater validity in group B’s decision ($M = 1.00$, $SD = .83$) than when
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Self-knowledge and use of consensus and heterogeneity information 23

groups were presented as equally consensual ($M = .40$, $SD = .79$), $d = .76$, 95% CI [.54, .97].

More importantly, the main effect of group variability showed that the participants perceived a greater validity in group B's decision in the condition of "higher variability in one group than in the other" ($M = 0.96$, $SD = .99$), than in the condition in which both groups were presented as having equal variability ($M = 0.42$, $SD = .59$), $d = .66$, 95% CI [.45, .88].

Turning now to the activation of an interdependent view of the self, results showed a main effect of consensus, $F(1,64) = 6.55$, $p < .02$, $\eta_p^2 = .09$, 95% CI [.011, .214]. The main effect of group variability did not attain significance, $F(1,64) = .14$, $p = .71$, $\eta_p^2 = .002$, 95% CI [.000, .053]. The interaction was also non-significant, $F(1,64) = 1.57$, $p = .22$, $\eta_p^2 = .02$, 95% CI [.000, .113]. The MSE for each of these effects was .42. In agreement with our hypotheses, the main effect of consensus reveals that the participants perceive a greater validity in group B's decision in the "higher consensus in one group than in the other" condition ($M = .37$, $SD = .86$), rather than in the condition in which the two groups were presented as having equal consensus ($M = -.05$, $SD = .36$), $d = .65$, 95% CI [.49, .81].

3. 6 Discussion

In this second study, the participants were primed with independent and interdependent views of the self through the use of a different priming technique and were presented with a new scenario of validation of groups' decisions. This new priming was objectively unrelated to the scenario presented in the second phase of the experiment, so that explanations related to an eventual interference of the priming with the scenario could be dismissed. In addition, the validation scenario manipulated consensus instead of controlling it across the design conditions (as it was the case of

1 Self-knowledge and use of consensus and heterogeneity information 24
2
3 study 1), so that the role of this information could be fully understood within the scope
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5 of activating independent vs. interdependent views of the self. Furthermore, new items
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7 were added to the measurement of the perceived validity of group decisions.
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10 The results of this second study generally supported our hypotheses. Indeed, with
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12 the activation of an independent view of the self, the participants perceived a greater
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14 validity in the heterogeneous group's decision than in the homogeneous one's, while
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16 not distinguishing the groups in terms of their validity when depicted as equally
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18 variable. Moreover, when groups were presented as differing in terms of consensus,
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20 the participants perceived a greater validity in the more consensual one, while when
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22 presented as equally consensual, the same levels of validity were perceived in both
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24 groups. These results replicate those of study 1, but extend them so as to allow the
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26 understanding of the role of consensus under the activation of an independent view of
27
28 the self. In fact, in the present study these results enable us to conclude that the
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30 participants primed with an independent view of the self make use of variability
31
32 information alongside consensus information.
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36 The results concerning the activation of an interdependent view of the self also
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38 replicate the results of study 1, showing that, in the conditions where they were
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40 perceived as equally consensual, the participants did not differentiate the perception of
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42 validity in group positions not even when one group was characterised as more diverse
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44 than another. In fact, in the conditions in which groups differed in terms of consensus
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46 and variability, the participants perceived a greater validity in the more consensual
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48 group, independently of variability manipulation.
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52 **4. Conclusions**

53 In this article, we analysed the moderating effect of activating independent vs.
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55 interdependent views of the self on the use of heterogeneity and consensus information
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1 Self-knowledge and use of consensus and heterogeneity information 25

2 while perceiving validity in groups' decisions. This moderator was chosen for two
3 main reasons. Firstly, as we pointed out in the introduction, literature on independent
4 and interdependent self-construal agrees that these differential views of the self have
5 an impact on the ways people process social information (Cross, Hardin, Gercek-
6 Swing, 2011; Kühnen & Oyserman, 2002; Markus & Kitayama, 1999ab; Markus &
7 Kitayama, 2003). In fact, we reviewed evidence that associates independent self-
8 construal with a greater focus on individualised information and preference for
9 heterogeneity information (Oyserman et al., 2002), whereas interdependent self-
10 construal emerges as associated with preferences for group level (i.e., consensual)
11 information (Triandis, 1989). Thus, both theoretical and empirical evidence of this
12 differential information-processing process was presented and appears as highly
13 relevant within the context of validating groups' decisions.
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29 Secondly, we argue that heterogeneity information might cue people to perceive
30 that consensus is composed by individuals that do not share personal bias and that
31 contribute in an independent way to its construction as shown by Vala et al. (2011).
32 This argument is particularly true if we activate an independent view of the self, since
33 heterogeneity information is used to heighten the perception of validity in groups
34 depicted as heterogeneous and consensual, while downgrading the perceived validity
35 of homogeneous and consensual groups. In this case, it is reasonable to sustain that
36 heterogeneous consensus is deemed equivalent to consensus stemming from the
37 individual and independent contribution of those that compose a group (Asch, 1952;
38 Levine, 1999). Inversely, under the activation of an interdependent view of the self,
39 variability information proves meaningless, because cognitive or situational factors
40 lead individuals to disregard individualised information, that is, to generally base their
41 perception of validity in group decisions using consensus information.
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Self-knowledge and use of consensus and heterogeneity information 26

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3 In agreement with this framework, in study 1, we set out how the participants
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5 primed with an interdependent view of the self made no distinction between
6
7 homogeneous or heterogeneous group compositions while perceiving validity in their
8
9 decisions. In contrast, when primed with an independent view of the self, the
10
11 participants made use of variability information in perceiving a greater validity in the
12
13 more heterogeneous and consensual group and lower validity in the group depicted as
14
15 homogeneous and consensual.
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19 The results of the second study further support our predictions, this time providing
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21 clearer evidence to the fact that, with the activation of an interdependent view of the
22
23 self, the participants disregard variability information while perceiving validity of
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25 group decisions. In fact, only the main effect of consensus emerged in our results,
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27 showing that they tended to perceive a greater validity in the group presented as more
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29 consensual, and not to differentiate the validity perceived in both groups when
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31 presented as equally consensual.
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35 Inversely, under the activation of an independent view of the self, the participants
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37 made use of heterogeneity and consensus information while perceiving validity in the
38
39 decisions of both groups, a result confirmed by the presence of a significant consensus
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41 main effect and a significant main effect of variability. In this specific situation, the
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43 results also show that the participants perceived the consensus made up by
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45 heterogeneous individuals as more valid since they were assuming that heterogeneity
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47 provides individualised information. This in turn allows them to view consensus as
48
49 stemming from the independent contribution of the individuals creating it, discounting
50
51 the explanation of a consensus based on shared personal bias (Goethals & Darley,
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53 1977; Goethals & Klein, 2000), which is more suitable to homogeneous groups
54
55 reaching consensual agreement.
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3 Taking our results further we could argue that the priming of independent and
4
5 interdependent self might have raised the participants' concerns regarding
6
7 informational vs. normative influence (Deutsch & Gerard, 1955). In fact, classic and
8
9 recent studies in the domain of social influence, and especially in conformity evidence
10
11 that interdependent individuals (Berkowitz, 1957; Bond & Smith, 1996) or collectivists
12
13 (Oh, 2013) show higher levels of conformity than independent individuals (Di Vesta,
14
15 1959) or individualists. And this is the case, since among interdependent individuals, it
16
17 is believed that the nature of the major force operating is normative influence (Lascu &
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19 Zinkhan, 1999). However, it is also true that interdependent individuals conform less
20
21 to majority norms, especially when they are unclear and sanctions are not likely to be
22
23 imposed (Frager, 1970).
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28 In any case, our studies were not driven by classic conformity paradigms (*e.g.*,
29
30 Asch-type conformity setting) and did not impose any sanctions to the participants,
31
32 who were free to state their decisions based on the information given in the scenarios.
33
34 In this sense, it seems plausible that, in our studies, individuals primed with an
35
36 interdependent view of the self might have followed the consensual information
37
38 presented in the scenarios – a normative influence cue (see Moscovici, 1980; Cialdini
39
40 & Goldstein, 2004) – as an influential cue to attribute validity to group decisions, thus
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42 lowering the costs of being inaccurate.
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46 Inversely, individuals primed with an independent view of the self, and as such
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48 with informational influence concerns, might have sought for more information that
49
50 could ascertain the veracity of the consensus information presented in the scenarios. In
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52 this sense, heterogeneity of group composition provided them with a cue to validate the
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54 consensus reached in each group presented, since it ascertained that consensus was
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56 reached by the agreement of relatively independent sources (Asch, 1952; Lopes et al.,
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3 2014) and helped testifying the validity of the decisions reached by the group.
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5 However, these explanations should be further explored in future research.
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8 Our results have also different impacts at an applied level, namely regarding
9
10 effective group composition and decision-making. On the one hand, the results show
11
12 how group composition can be optimised to help group members perceive a greater
13
14 validity in the produced outputs. Consequently, assembling more heterogeneous
15
16 groups can set the stage for creating task forces or working teams where members can
17
18 share a more participative environment and empower them through the perception of
19
20 the importance of their independent contribution to produce valid group outputs. On
21
22 the other hand, these results also have an impact on groups' decision-making
23
24 processes, since a consensus reached by heterogeneous groups produces decisions that
25
26 are perceived by third-party laypeople as having greater quality and validity than those
27
28 created by homogeneous groups. These results are in line with other classical findings
29
30 in social psychology (e.g., group think, Janis, 1972), as they show that the decisions
31
32 made by groups pressured into uniformity, or by members of groups aiming for
33
34 homogeneity in positions and socio-psychological characteristics, are deemed invalid,
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36 producing deleterious effects at group level.
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41 Future studies should foster the knowledge concerning the moderators of the use of
42
43 consensus and heterogeneity information, for example under different epistemic
44
45 motivations. In this sense, future studies could be run analysing the moderating impact
46
47 of need for cognitive closure (Kruglanski, 2004) on the use of these two sources of
48
49 information for validation of group productions. Also, studies manipulating the
50
51 participants' cognitive resources for information processing could give us more
52
53 knowledge regarding the ways consensus and heterogeneity information is processed
54
55 and its interplay on validation of groups decisions and opinions.
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4 **Notes**

5 (1) As third-party laypeople, we refer to individuals that do not belong to or
6 participate in groups making important decisions, but whose decisions will affect in
7 any way their own lives.
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11 (2) The complete materials used in this first phase are available upon request
12 from the first author.
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Author biography

Diniz Lopes initiated his academic activities, in 1997, as a Junior Researcher at Instituto de Ciências Sociais, Universidade de Lisboa. At the same time, in 1998, he obtained a Teaching Assistant position at ISCTE-IUL where he began developing his teaching and research activities. In 2007, he got his PhD in Social Psychology from ISCTE-IUL, Lisboa, where he is, presently, Assistant Professor. Between 2010 and 2013 he was a post-doc fellow in the Universities Paris-Ouest-Nanterre-La Défense, Paris Descartes, and Universidade do Porto. His present research interests focus on the mechanisms used by common sense to validate everyday knowledge, the analysis of commitment, infidelity, derogation of alternatives, and stay-leave behaviours within romantic relationships, as well as the application of statistical models to data analysis in Psychology. His works are published in different national and international scientific journals, such as *Behavior Research Methods*, *PlosOne*, *The Journal of Sex Research*, *Archives of Sexual Behavior*, *Group Processes and Intergroup Relations*, *Cyberpsychology*, *Behavior and Social Networking*, *Personal Relationships*.

Jorge Vala, PhD in Social Psychology, University of Louvain (1984), is currently a researcher at the Institute of Social Sciences (ICS)/University of Lisbon. At ICS, his research focus on socio-cognitive processes, namely in the field of social representations and ideologies, social norms and social identities. His present projects articulate these processes with the study of racism and prejudice, migration issues, political attitudes, social justice, and validation of everyday knowledge. Jorge Vala was an invited professor at several universities, including the université René Descartes-Paris and the Ecole des Hautes Etudes en Sciences Sociales. He served as Director of the ICS-ULisboa between 2009 and 2014. Jorge Vala received the Jean Paul Codol Award from the European Association of Social Psychology and the Career Award from the Portuguese Association of Psychology.

Dominique Oberlé obtained her Habilitation à Diriger des Recherches in 2003 and was nominated Professeur des Universités in 2005 at université de Paris-Ouest-Nanterre. Her research interests focused mainly on group processes, both from a group-dynamics perspective (intragroupe processes) and a category based perspective (intergroup processes). Her recent research interest relate to the mechanisms through which opinions are validated by common-sense (cf. Lopes, Vala, Oberlé, & Drozda-Senkowska, 2014); the hindering role of evaluations on information sharing of groups that must solve different problems (cf., Hayek, Toma, Oberlé, & Butera, 2015); and the factors that impede contextual effects within Milgram's paradigm of obedience to authority (cf. Bègue, Duke, Courbet, & Oberlé, 2017).