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Faculté des Sciences Psychologiques et de l'Education

Unité de Psychologie Sociale

WHY SAYING IS BELIEVING

Epistemic and Relational Pathways

Towards the Creation of Shared Reality with Others

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Illustration de couverture *: Sabrina Pierucci inspirée de*
http://percezioniderivate.tumblr.com/post/344232195/illusioni-ottiche-positivo-negativo

Alla mia Famiglia

To the Mouse

Et aux Abeilles

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cet univers impitoyable...

Est-ce que tu comprends si je dis
" DÉFICHITE " ?
" ANNUALITÉ " ?
" EPROUVE " ?
" FORMATATION "

→ OUI SABRINA, j'entends ça tous les jours :)

Dico de Sabri

Supervisionner = superviser
désinfectionner = désinfecter
des trouvrous = des trous creus
floux = flux de personnes
il pesse à 50 centimes = à 50 centimètres
participer = postposer
supérier = ± remplacer, suppléer

Dico de Sabri (II)

narcissiste = narcissique
dans le spécifique = précisément
bienvenu rentré = bienvenue qd qqun rentre dans son pays
rayon d'ombre = comme un rayon de soleil, sauf que c'est de l'ombre :)
dire à l'arrière = parler derrière le dos.
trou du bout du monde = trou du cul du monde

Dico de Sabri (III)

faire content = faire plaisir
il est content = classé X
mineur de 1 = plus petit que 1
"Ça vaille " : ... 11 juillet ± 25"
Crouche : ruche
une cock au beurre = une coque au beurre
connoissiticq : connaisseuse

Sabri à Stockholm

être à l'extérieur de : être à l'intérieur de
timbre : tampon
je suis mal mise : je ne suis pas bien
investir : heurter
ça me fait faim : ça me donne faim
trouc du cet endroit : spécialité locale
saoulesse triste : avoir l'alcool triste
sigla = morceau de musique au début d'un programme (?)

le juste moyen = juste milieu
intégrateur alimentaire = complément alimentaire
J'ai la tête dans le cou : J'ai la tête dans le cul
émouée : ému
ça rayolte ! : ... ça raconte des rayols !
être affectionné : être attaché
en romantique solo : on est à 2 (??)

A vous tous

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Introduction

"The Washington Post", 25th of February 2008. Campaign for the presidential primaries. Science correspondent Shankar Vedantam, noticing some political two-stepping (i.e., change of opinion about crucial topics) of John McCain, Hillary Clinton and Barak Obama, posits that voters should have no big reason to question the presidential candidates' "flip flop", and this for one specific reason: Often unconsciously, politicians can come to believe what they tell voters, even if they start out being insincere. He defended this claim by citing Columbia University social psychologist Tory Higgins and his German colleague Gerald Echterhoff's studies about what has been called the "saying-is-believing" effect, which is the experimental demonstration of that phenomenon. To illustrate the effect with another example we can also adopt the voters' perspective during that campaign period. As the reporter noted, if a person had been talking to a die-hard Obama fan, this person would have been more likely to mention things about Obama's latest debate with Clinton that depicted the candidate in a positive light. But, we add, the saying-is-believing effect specifically refers to the fact that, through this "audience tuning", that person probably would have ended up also remembering more positive than negative aspects concerning Obama in that debate.

1. Why saying is believing and why "saying-is-believing"?

Two reasons justify the choice to focus on saying-is-believing. The first one is already anticipated in the question "why saying is believing?" that is, we intended to explore the motivational processes that make it possible that what is said to an audience is actually later believed. The most appealing and plausibly exhaustive theoretical explanation to this question being already developed, we wanted to contribute to the further empirical test of the main accounts of the effect.

The second reason stems from the practical implications of the "saying-is-believing" effect. The possibility that, by saying something to an audience we finally end up believing it may have important consequences in real life situations. For instance, to return to our initial example, we can imagine that the person who tuned to the Obama fan had not really a clear position towards the different candidates before communicating with the audience. We can also imagine that this person had the chance to speak mostly with Obama fans rather than opponents during the campaign. The saying-is-believing effect plausibly occurring in those interactions would probably have led this person to finally hold a positive attitude about the current US president. Also, communicating with an audience about a person involved in an event with potential negative outcomes may influence the communicators' final beliefs about such person, through a saying-is-believing process. This may have important consequences for the persons involved in the event. Moreover, through a saying-is-believing process we may contribute to the development of attitudes towards others and thereby to the spreading of shared representation such as stereotypes. Thus, the second reason for our focus on the "saying-is-believing" effect is given by the ubiquity of this communication phenomenon and its consequences in terms of individual representations, which are socially embedded and shared. The saying-is-believing effect is therefore conceived as a privileged pathway through the understanding of individual attitudes interpersonally negotiated as well as of culturally shared beliefs.

2. Shared reality: state of affairs

Through a saying-is-believing process people end up experiencing "a commonality with other's inner states about the world" (Echterhoff, Higgins & Levine, 2009). In other words, this effect suitably exemplifies how people "share reality" with others through communication. This is a subjective experience of sharing, which does not imply objective reality nor overt behaviors, and refers to a target object (e.g., an individual). Also, shared reality is the results of motivational forces. Indeed, people share reality because motivated to engage in a process that let them 1) reach a reliable understanding of the word and 2) get

along with others. Shared reality theory (Echterhoff et al., 2009[1]) assumes that these two core human motivations, namely an epistemic and a relational need, are the underlying forces driving shared reality creation. The empirical test of this assumption, which has been driven within the saying-is-believing paradigm, lacks in exhaustive answers about the distinctive and relative role played by these two motives. Also, with really few exceptions, the settings used in these studies lacked external validity. Thus, the present work contributes to fill these gaps as we 1) manipulated one or the two motives to answer specific unsolved questions of the theory and 2) extended the saying-is-believing external validity by testing the effect within settings closer to real-life situations.

3. Brief overview of the thesis

Because exploring a communication effect on cognition, we will first trace the history of the evolution of thinking the relation between cognition and communication within social psychology (for a review see Klein, Marchal, Van der Linden, Pierucci & Waroquier, 2011). Starting from research based on the classic transmission model, considering social influence literature's contributions as well as recent theorization on the cognitive consequences of communication, we will trace the shift between the conception of the individual as holding preexisting mental representations (e.g., attitudes) communicated to others, through the individual as being the receptor of social representations influencing his/her owns from the external word, to the individual as an active (co)creator of representations subjectively experienced as shared. In view of the literature, the first chapter suggests that the mere communication activity may impact on the way people form attitudes and create shared reality with others.

Thus, the second chapter describes the process of shared reality creation. It considers the evolution of the theory from the early formulation of Higgins and Hardin (1966) to the

[1] All along the dissertation, I will use two references that, in their shortened form, would correspond to Echterhoff et al, 2009. Accordingly to the 6th APA Manual, I should cite these references with the first and second author name, followed by « et al. » and the year of publication. Because for one of my cases, this will imply to cite the whole authorship every time and because I will refer mostly to this last paper, I've decided to use my own abbreviations. For ease of readability, I will refer to "Echterhoff, Higgins & Levine, 2009" with the form "Echterhoff et al., 2009" and specify the second author just when referring to "Echterhoff, Lang, Krämer & Higgins, 2009", through the abbreviation "Echterhoff, Lang et al., 2009".

most recent developments (Echterhoff & Higgins, 2011). We highlight how the saying-is-believing paradigm furnishes a suitable exemplification for illustrating shared reality creation processes. It is argued that communication effects on the communicators' memory, as the saying-is-believing effect, depend on the kind of information that needs to be processed (e.g., ambiguous information) and on the characteristics of the people available for the communication process (i.e., the audience). In other words, we consider the motivational processes driving an act of communication and the consequences of such motivational forces for the communicators' need of achieving a shared reality with others. Those motivations such as the need for uncertainty reduction and for affiliating with others (namely, an epistemic and relational motive) are relevant in the process responsible for shaping the individual's, and thereby the socially shared, representations.

Thus, after investigating the roots of the two core human motives within the social psychology literature and after reviewing existing studies on the saying-is-believing effect, we precisely define the hypotheses and methods of our empirical section.

The third, fourth and fifth chapters present a series of five experiments that applied the saying-is-believing paradigm, a communication based paradigm, respectively 1) to an ubiquitous social situation with potential negative outcome (i.e., sexual harassment), 2) to relations with strangers and 3) to an intergroup context. Whereas the proposed manipulations were specifically chosen with respect to theoretical open issues (i.e., questioning the epistemic and relational accounts driving shared reality creation), the settings we chose let us explore the formation of attitudes within different contexts of real life situation, contributing to heighten the ecological validity of the paradigm. Our settings were thought to serve experimental realism (Aronson, Ellsworth, Carlsmith, & Gonzales, 1990), in the sense of meaningful experiences touching those participants' dimensions worth exploring in view of our purposes. The experiments were planned to be as plausible as possible and really involving for the participants. In the majority of the cases we used computer-assisted administration 1) to lower the experimenter intervention to the essential minimum thereby optimising standardisation and 2) to make the communication experience credible, for instance, through faked chat –interface.

Specifically, the third chapter presents two studies testing the epistemic account to shared reality creation. Antecedent behaviors of sexual harassment are often ambiguous,

rendering evaluations of harassment uncertain. Perceivers may reduce such uncertainty by creating shared reality with others through communication. That is why we decided to apply the paradigm to such a context. The chapter offers answers concerning the implication of the findings for theory and practice.

Chapter four describes one key experiment manipulating for the first time within the saying-is-believing literature a relational motivation driving communication with strangers. Results shed light on the distinctive role played by the motivation to get along with others in shared reality creation.

The experiments illustrated in chapter five extend the effect to an intergroup context within the Belgian situation and explore a crucial condition of competing relational and epistemic motives. Results shed light on the role of shared reality creation in the spread of prejudices and on the implications of communication with an in-group audience relying on stereotypes.

Finally, chapter six provides a discussion of our findings. We first summarize the most relevant experimental results and highlight their contribution with respect to the existing literature. We analyze their implications in real life situation and in light of the proposed theoretical approach driving our main reasoning. We then conclude with limits and further research directions.

Part I

Achieving Shared Reality through Communication

I

On the Interplay between Attitudes and Communication

"The difficulty with this conversation is that it's very different from most of the ones I've had of late. Which, as I explained, have mostly been with trees".

-Douglas Adams-

"What do you think about Paul? You know, the new cute boy who has arrived today in class? He was used to live in Lille but their parents decided to move… Apparently his mother was tired to come everyday to Brussels for work!" "Well, I kind of like him… he seems to be nice and clever… even if I don't really know him" answers Chantal to Josephine, during the break.

This elementary example of schoolmates chatting introduces us to the theme of attitudes, which are defined as the "evaluative dispositions toward some object" (Zimbardo & Leippe, 1991, p. 31). Chantal likes Paul, even if she doesn't really know him. Her first experience of him during the morning class leads her to think he is clever and nice which is, what she likes about him. She could evaluate Paul along a continuum of liking-disliking, thus, she holds a disposition towards him in the sense that she could form her representation about Paul in a particular (i.e., favorable) way (see Zimbardo & Leippe, 1991). Other authors conceive attitude as "an idea charged with emotion which predisposes a class of actions to a particular class of social situations" (Triandis 1977, p.2). This early definition of the concept focuses on the different components of attitudes (the cognitive, the emotional and the behavioral one). In other words, an attitude system has been defined as the summary evaluation that includes behavioral intentions, actual behaviors, cognitions and affective responses towards an object (Zimbardo & Leippe, 1991). For the sake of clarity we precise that, in the present dissertation, we refer to attitudes as those components of the attitude system corresponding to the *mental representation* about an object, where cognition and

attitude cohere (see Zimbardo & Leippe, 1991). In other words, the focus of our interest here is on the fact that Chantal's representation of Paul includes her cognitions about him (he is smart, he makes people laugh) and corresponds to a general positive attitude towards him (she likes him), which are communicated to her audience; the behavioral and affective components of this attitude being less relevant for the purpose of our analysis.

Everyday life is the stage where attitudes are formed, expressed and changed continuously. Our dispositions towards objects (i.e., other persons as well as physical objects or issues) also drive the behaviors we adopt towards the objects (as well as behaviors can influence attitudes). Since Chantal likes Paul, she will later behave gently with him as she believes he deserves it. Thus, questioning ourselves about the processes driving attitude formation is of particular theoretical relevance. Accordingly, a remarkable amount of works have focused on attitudes within social psychology (for review see Gawronsky, 2007), ranging from the above mentioned modelisation of the attitude's components (see for example Triandis, 1977) to theories considering the psychological factors, such as social learning (e.g., Bandura, 1977), among others, involved in attitude formation and change (for a review, see Crano & Prislin, 2006). Also, social influence literature furnished a wide reflection on attitudes (see Zimbardo & Leippe, 1991), while research about the appropriate methods to measure them did not neglect to take into account social desirability issues (for a review, see Fazio & Oslon, 2003). Gawronky (2007) recently provided an overview of the different approaches towards the construct, ranging from the conceptualization of attitudes as relatively stable across time and context (see Eagly & Chaiken, 2007; Fazio, 2007) to models conceiving attitudes, explicit as well as implicit ones, as susceptible to contextual influence (Gawronski & Bodenhausen, 2006; Schwarz, 2007).

The purpose of the current analysis is not to review research on attitudes to provide an exhaustive global overview of the most recent conclusions, nor to focus on attitudes' contents. What is important here is to state that the majority of research on attitudes conceptualizes them primarily as intra-individual cognitive representations (Hogg & Smith, 2007). For instance, G. Allport's (1935) first definition of attitude considers it as "a mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations to which it is related" (p.810). Highlighting the narrow margin given in attitudes research to the role played by social factors, Hogg and Smith (2007) tried to develop an integrative view of the impact of

social context on attitudes, by explicitly relying on social identity theory. They pointed out how attitudinal phenomena are impacted significantly by social identity processes, being socially structured and grounded in social consensus, social norms and group memberships.

In line with this reasoning, what is primarily at stake in the current dissertation is to analyze how, through decades of research, we can operate the shift from a mentalistic view considering attitudes as pure cognitive representations to the one conceiving attitudes as formed within a specific social context and under motivational, context-related, processes.

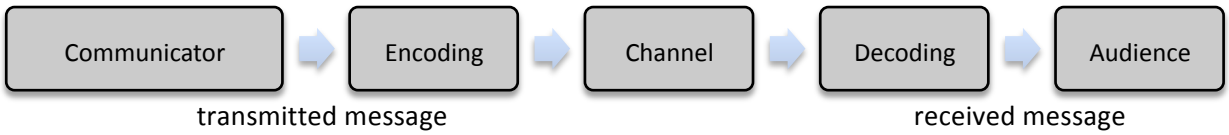
Specifically, we chose to focus on interpersonal communication as a privileged pathway driving attitudes' formation (as well as modelling and change). Paralleling Klein and colleagues' (2011) work on the cognitive and communication interplay driving stereotypes' sharedness, we attempt to explore the relation between *cognitive* and *communication processes* driving *the subjective reality of our evaluation towards an object*, that is, the attitude we end up holding.

Thus, we will first focus on the initial model of interpersonal communication (Shannon & Weaver, 1949), which properly resonates with the conception of attitude as being a mental representation *expressed through* communication. Later, we will argue against the simplicity of such a model by considering contextual influence on the communication act, through which attitudes are formed and/or shaped. In this respect, we will illustrate different theoretical approaches, focusing on language use as well as on communication as a goal-oriented phenomenon and also consider social influence research, which illustrates how the individual, receiving external messages, is driven through a conformity process to the convergence of attitudes. By exploring these approaches, we will argue that the private attitude is influenced by the context *in* the individual's mind, through those that have been called perlocutionary effects of communication (see Austin, 1975; Klein et al., 2011). Finally, we will consider recent developments within the interpersonal communication literature, to end up conceiving the individual as an active (co)constructor of the mental representation. Approaching the idea of retrospective effects of communication on cognition, we will shift our attention from the early definitions of attitude as a mental representation preexisting the communication act to the subjective experience of the attitude as an outcome of the individual's active engagement within a communication process.

1.1 The code model

From the mentalist perspective largely adopted in social cognition, one may argue that the attitude we hold towards something or someone is primarily formed in our mind and later expressed through communication (see Klein et al., 2011). To return to our example, it stays unquestioned that Chantal's disposition towards Paul preexisted in her mind and anticipated the moment she expresses her attitude to Josephine. Nevertheless, we will analyze situations where this preexistence of a stable attitude is not always verified. To apply the present example to the code model, largely used by communication theoreticians from Aristotele up to modern semiotics (Sperber & Wilson, 1989), the communication act corresponds to the channel through which Chantal's attitude is encoded into a verbal expression that is easily decoded by Josephine, who therefore understand Chantal's attitude. In this model, language represents the shared code system that allows the expression (and comprehension) of a preexisting subjective reality, Chantals' attitude towards Paul. To this matter, Shannon and Weaver's (1949) diagram representing the model can be simplified as follows[2]:

Figure1. Simplified representation of the code model



The large use of the code model as a basis to study representations (attitudes to the same extent as stereotypes) is criticized by Klein and colleagues (2011) for several reasons.

One claim particularly interesting for our argumentation is that this model does not consider contextual factors, such as the important role played by the audience (i.e., Josephine in our example), in conditioning the communicator's (i.e., Chantal) act of communication (i.e., the expression of the attitude). For instance, if Chantal is worried that

[2] Here, we choose to refer to the *source* of the transmitted message as to the *communicator*, because we are mostly interested in the *individual performing* in the communication act with an audience, as well as in the effect of the communication act *on the individual*. Terms as *source* and *addressee* of the information, as well as *speaker* and *listener*, or *transmitter* and *receiver* will also be used as synonyms of the two interlocutors in our analysis, but to a lower extent as they emphasize on other specific aspects of the process (e.g., the importance of language in a speaker-listener interaction).

Josephine will tell Paul that she likes him, what will Chantal tell to her, especially if she doesn't want Paul to know her thoughts? Studies have demonstrated that anticipating an act of communication, as well as the communication goals pursued in the interaction, may influence the communicated expression (for review see Klein et al., 2011). Also, if Chantal has no formed any clear impression about Paul yet, will the fact that Josephine already expressed her sympathy towards him (i.e., "the cute boy") influence her? To this matter, a large amount of literature within social cognition has demonstrated that the very act of communication itself has consequences on cognition (for review, see Chiu, Krauss & Lau, 1998). Thus, not only Josephine may influence what Chantal says and how she expresses her attitude towards Paul but, in some cases, the communication may impact on Chantal's final representation about Paul.

More globally, a general criticism that can be made in relation to the code model, is that its linearity does not allow to account neither for the influence of contextual factors nor for the retrospective effect of communication, that is, to consider how communication shapes cognition. Indeed, no matter if considered as Cartesian's innate idea or Lockean's simple ideas[3], according to the model the communicator's representations preexist the communication act.

To consider the contextual factors accounting for the retrospective relation between the mental representation (here, the attitude) and the communication, we refer to Klein and colleagues' (2011) differentiation between *pre-locutionary* and *post-locutionary* effects of the communicative situation. Inspired by Austin's (1975) theorization, the authors focused on the *perlocutionary* effects of communication. To use Holtgraves and Kashima's (2008) easy explanation of Austin's terminology, communicators' intentions to convey a particular meaning and to have the audience understand such meaning represent what linguists call the *illocutionary act*. Instead, the unintended effects that may extend beyond the communicators original intention, and which are caused by the *locutionary act* (i.e., the expressed utterance), are the *perlocutionary effects* (see also Holtgraves, 2005). Both pre-locutionary and post-locutionary effects can be included in the perlocutionary effects of communication.

[3] Whereas Innatism as a doctrine assumed the existence of inborn ideas present in every human mind (e.g., the idea of God is *innate* in everybody according to Descartes' philosophy), empiricists as Lock criticized this position by conceiving ideas and knowledge as derived from *experience* (cf. for example Severino, 1991).

Indeed, among these unintended consequences of communication, some operate even before the actual communication. For instance, the motivational process driving the communicator through the interaction with an audience, such as the need to adhere to a norm, could affect his/her representation even before the expression of the representation (see Douglas, Sutton & McGarty, 2008). In the sense that those processes affect the communicator's representation *in anticipation of the communication act*, they can be named *pre-locutionary* effects. On the other hand, Klein and colleagues (2011) also analyzed those that can be called *post-locutionary* effects of the communicative situation, that are, those effects affecting the communicator's representation in reason of his/her adoption of the beliefs and cognitions expressed *while communicating* in function of specific goals.

The next sections will allow us to explore in detail some of the phenomena belonging to these two categories.

1.2 Pre-locutionary effects of communication

1.2.1 Language, communication goals and attitudes expression

Through the linguistic category model (LCM), Semin and Fiedler (1988) postulated that abstract terms used in communication to refer to some target person, such as adjectives, describe stable behaviors. These behaviors are therefore attributable to the internal characteristics of the individual. On the other hand, when behaviors are described by means of concrete terms, such as action verbs, they are more likely to be attributed to contextual factors. Hence, one behavior can be described through different verbs characterized by increasing degree of abstractedness: For instance, "person A is hitting person B" (i.e., a descriptive action verb) or, more abstractly, "A is hurting B" (i.e., an interpretive action verb) or, even more abstractly, "A is hating B" (i.e., a state verb). But, person A could simply be referred to "an aggressive person" (i.e., adjective). The more the description is abstract the more the described person is perceived as likely to reproduce the behavior in the future (see also Holtgraves, 2002).

Early works based on this model, which demonstrated how different levels of language abstraction reflect the representations hold by the individual, are rooted in the code model (see also the linguistic expectancy bias: Wigboldus, Semin & Spears, 2000). Indeed, they establish to which extent the use of language describe the mental

representation people hold.

But, Klein end colleagues (2011, see also Fiedler, 2008) observed how later works based on the LCM highlighted that communication goals, which are dependent from contextual factors such as the audience, influence the choice of language use unbeknownst to the communicator. This happens, for example, when people describe ingroup members positively because communicating with an ingroup audience's (Douglas, Sutton, & McGarty, 2008), or when a communicator describes an outgroup target in abstract stereotypic terms when an ingroup (*versus* outgroup) member is present in the audience (Douglas & McGarty, 2001). Thus, through the consideration of these studies, the authors argued for a first critic of the code model, which does not take into account contextual factors. In these examples, the implicit goals driving communication (as well as explicit goals, see Douglas & Sutton, 2003), which are determined by the context (e.g., to conform with an ingroup norm for being positively evaluated by an ingroup audience), influenced the expression of the representation via language abstraction.

Other evidence for communication effects on the way people transmit information can be found in the stereotyping literature (e.g., Kashima, 2000; Lyons & Kashima, 2003). Studies within this domain actually demonstrated that, when communicating, people tend to transmit more stereotype-consistent than -inconsistent information. Also, even if the inconsistent information is more reproduced in earlier position of a communication chain, the consistent one is better represented towards the end of the chain. Crucially, Lyons and Kashima (2006) found that a typical stereotype-consistent bias emerged when people intended to communicate a story but not when they reproduced it from memory without this intention. Therefore, the anticipation of the communicative act was crucial for determining the bias.

Accordingly, other studies considered the influence of contextual factors relative to the communicative situation on the expression of stereotyped judgments (see e.g., Klein, Clark & Lyons, 2010; Clark & Kashima, 2007; Ruscher, Hammer & Hammer, 1996). "*Common Ground*" theorization furnishes insights for the explanation of such phenomena. As stereotypes are shared beliefs about the characteristics of the members of a group (Leyens, Yzerbyt & Schardon; 1996), they represent a *common ground*, that is, a set of shared presuppositions that the people within a communicative situation take for granted

(Kashima, Klein & Clark, 2007; see Klein et al., 2011). As such, people rely on common ground to communicate more efficiently.

To this regard, Klein and colleagues' (2010) recent experiment demonstrates that participants were more likely to communicate stereotype-consistent statements when communicating with an audience with whom they had previously discussed the stereotype, than with an audience with whom they had not. Thus, the fact that the stereotype was part of an established common ground led participants to communicate information that was congruent with it. The transmission of information coherent with the common ground responds to a logic of parsimony (stereotyped contents lead to faster comprehension and easier information processing) but also to affiliative functions: when communicating stereotype-consistent information, people state at the same time shared beliefs and therefore reaffirm the social bond that link them to the audience (Klein et al., 2010, see also Bratanova, 2008).

As previously noticed, all these studies show how the verbal expression of the representation is determined by the anticipation of the effects of the communication towards the audience. People, more or less consciously, select some aspects of the attitude, which has been argued to preexist the verbal expression, as a function of their communication goals. Nevertheless, in the sense that people's final attitude is viewed as shaped by the anticipated communication, these studies are representative of the pre-locutionary effects of communication.

Nevertheless, this idea is not recent in the literature. More than half a century has passed since Zajonc (1960) first highlighted the process of "cognitive tuning" in communication justifying later researches focusing on this issue. This author showed that in comparison with people just receiving information, those who were expecting to communicate with a listener, tended to exclude or minimize contradictory information and formed more polarized impression about a target. Actually, they activated more differentiated, complex, unified and organized "cognitive structures" than those activated by receivers. After developing a specific method for the description of cognitive structures, Zajonc defined the process of "tuning" as the transmitter's activation of cognitive structures that may serve as a source of potential messages when anticipating to transmit information.

Subsequent researchers (e.g., Tetlock, Skitka & Botteger, 1989) proposed that such tuning has to be seen as a goal-oriented process and argued that the audience's position

about an argument influences the communicator's message and the cognitive processes leading to its construction (see Carnaghi & Yzerbyt, 2007). For example, several studies by Carnaghi and colleagues showed that knowing the identity and the viewpoint of an audience leads communicators to engage in less complex thinking processes. Thus, the compliance with the audience appears to be a means of forgoing the stress of arguing, avoiding rejection and pursuing self-presentational goals (Carnaghi & Yzerbyt, 2007). In support for this argumentation Carnaghi, Yzerbyt, Cadinu and Mahaux (2005) showed that participants expecting to interact with a known audience take more time to scrutinize stereotype disconfirming information compared to stereotype confirming information in comparison with participants who expect to interact with an unknown audience (see also Carnaghi & Yzerbyt, 2006). As the manipulation of a contextual dimension of the communication (i.e., the audience's attitude towards a group) influenced the attention given to some aspects of the representation, these researches also pertain to the study of the pre-locutionary effects of the communicative situation (Klein et al., 2011). However, in Zajonc's (1960) conceptualization of tuning, cognitive structures of communicator result to be activated or "tuned in" when the person enters into communication with others regardless of the other's perspective.

McCann and Higgins (1990) also started from the original linear model of communication (Shannon and Weaver, 1949) for classifying communication elements relevant for social cognition. If we refer to their classification, the above-mentioned studies (focusing on pre-locutionary communication effects) can be conceived as representative of both the *effects of self communicator on communication* (as they depend on the communicators' motives and goals) as well as the *effects of other - the recipient - on communication* (because of the audience influencing such goals and the motivational process driving the communicators' expression). As the present dissertation focuses precisely on the communicator's attitudes, we will later explore (as post-locutionary effects) *communication effects on the communicator's social cognition* while leaving the *communication effects on the recipient's social cognition* out of the discussion (see also Holtgraves & Kashima, 2008).

1.2.2 Social Influence approaches: the convergence of attitudes

The social influence literature furnishes an interesting perspective for our argumentation. Indeed, researches based on such a theory show how contextual factors motivating people within social situation (e.g., their need to stick to a social norm within a group) drive them towards the convergence of the attitudes they express. The following paragraphs will guide us through the early studies of such a literature, with the purpose of identifying not only the relation between the attitudes and their expression, but also to focus on the role adopted by the individual in those phenomena.

In his milestone work, Turner (1991) highlighted how social influence cannot be divorced from the concept of social norms. A social norm is defined as a general accepted way to feel, behave and think within a situation, that is endorsed and expected because perceived as the right thing to do (p. 3). Social norms are descriptive in the sense that they reflect actual similarities arising more or less directly from social interaction and relationships within a social group. They also are prescriptive in the sense that they reflect shared beliefs about what it is appropriate to do in a given situation.

If we refer to our previous definition of attitude, a norm can be seen as an attitudinal system towards a given situation (i.e., cognitions, feelings and behaviors), which is shared within a group of people. Because influence relates to the processes whereby people agree on behaviors as well as form, maintain or change social norms (Turner, 1991), we cannot neglect influential processes in the current analysis, as they inform the study of the relation between *communication processes* and *the evaluation of a situation*.

In the social psychology of influence an important theme is the distinction between (private) acceptance and (public) compliance to social norms, which refers to the difference between adopting a norm because subjectively experienced as valid and conforming to a norm because of pressure of others (while not sharing it at a private level). In private acceptance influence leads to attitude change (even if not necessarily overtly expressed), whereas public compliance is the product of influence that leads to overt behavioral change but does not necessarily imply a private acceptance (Turner, 1991). Thus, in the first case, conforming to the norm (through communication) implies that the preexisting mental representation about what is normative has been somehow modified and revised in the communicator's mind. The second conformity process, instead, implies that the expression

of compliance to a norm, does not affect the individual representation. Both examples are in line with a critic to the linear code model of communication for different reasons. In the case of private acceptance, the pre-locutionary effect of the communicative situation takes the form of a modification of the preexistent representation. On the other hand, in public compliance no perlocutionary unintended effect affects the communicators' representation. But, as the verbal expression does not correspond to the mental representation (i.e., the private attitude) of the communicator, the code model does not account for this phenomenon either. Indeed, one assumption of the model is that the verbal expression faithfully describes the mental representation (Klein et al., 2011).

The distinction between compliance and acceptance reflects the dual-process conception of influence that is recurrent of this literature (Turner, 1991). To foreshadow the dual model with Hogg and Smith's (2007) recent words, we focus on the fact that attitudes and their expressions are influenced because people seek 1) approval or 2) reality disambiguation information from others. These desires for approval and to be correct (Zimbardo et Leippe, 1999) are responsible for what has been classically defined as the *normative* versus *informational* social influence (Deutsch & Gerard, 1955).

In the following section we review the experimental research on influence, which led to the conceptualization of such a dual model.

1.2.2.1 Early studies: conformity to the group and disambiguation

Allport first demonstrated a conformity phenomenon in 1924: He showed that people, in the presence of others, expressed more conservative and less extreme judgments about weights and odors than when being isolated.

After this early step in social influence's experimental studies, Sherif's (1936) research made the link between consensus within groups and the development of social norms. Differently from Allport, who explained the conformity process as the result of an "instinct of submission" (see Turner, 1991), he argued that social judgments of what is correct and appropriate reflects shared internalized "frames of reference" that are social norms. Through his studies on the autokinetic effect, he showed how people in isolation tend to use previous own judgments to develop a personal norm. In those studies, participants placed in a completely darkened room had to estimate the distance a point of light appeared to move. Actually, the perceived movement was an optical illusion. Isolated

participants, using earlier own estimates, developed an internal frame of reference, which stabilized subsequent judgment because based on previous experience. When not isolated, the estimates of others served the same purpose, leading participants to a convergence of responses. Thus, Sherif showed how, against ambiguity and an unstructured new situation, a social norm arises, introducing coherent knowledge of the situation. This norm was internalized (it was not a phenomenon of mere compliance) and participants were shown to be unaware of being influenced from others (Turner, 1991). Also, even one year later subjects were found to persist on judgments of movement that were close to the group norm (Rohrer, Baron, Hoffman & Swander, 1954). Newcomb's (1943) studies continued in this direction by showing the internalization of a collective norm within groups in real life situations: A general and lasting change in political views was found among students attending an American university college. Their shift from conservative to more left-wing (normative) attitudes during college life was also shown to persist in time (Alwin, Cohen & Newcomb, 1991).

Levin's (1947) research followed in demonstrating how attitudes changed through group discussion rather than in a setting where people listened to an expert source of influence. Through this research it has been argued for the need of changing the whole group norm to see a change in one's attitude, if this attitude is really anchored in the group. In other words, given that people needed to become aware of a new shared norm through the discussion in order to change their attitude, it was shown the difficulty of changing one's belief independently from the norm.

Thus, all these studies are crucial in demonstrating how the final communicated attitude converged with the attitude expressed by the group. Replacing our focus on the individual being the communicator of an attitude, we can identify how the convergence of attitudes in those cases could be seen as a pre-locutionary effect of the communicative situation. As we previously pointed out, such effects could operate without the individual's awareness (see Klein et al., 2011). This seemed to be the case in Sherif's studies.

The critics of Asch to Sherif's conclusions attacked precisely this idea: He argued that people were not converging in their responses moved by an irrational force and being unaware of it (cf. also Turner, 1991). He rather claimed and showed that people confronted to ambiguity engage in a rational disambiguation process (Asch, 1951; 1956). In his experiments participants confronted alone to a visual discrimination task were performing

well, representing the control condition. Just 1/3 of participants that had to perform the visual judgment in groups, where confederate were instructed to give incorrect responses, showed conformity. But, conformity increased to the extent that the difficulty of the task increased. This manipulation was meant to show that ambiguity drove the conformity effect in Sherif's (1936) experimental situations. Thus, Asch's criticism really focused on the condition of epistemic disambiguation as a force driving conformity, by showing that in an unambiguous situation, people will stick to their own judgments independently of the group. Nevertheless, in line with Sherif, he underlined the relative weakness of the individual within a group and the spontaneous pressure to conformity (Turner, 1991). These two ideas can be seen as anticipating the conceptualization of the above mentioned informational and normative social influence theory (Deutsch & Gerard, 1955), to which we will turn now. As a matter of fact, such theory, as well as Festinger's (1950) informal social communication theory, provides answers to the function and motives driving the pressure on individuals through conformity.

1.2.2.2 The cognitive and social motivation towards conformity

Even if Festinger's theory has been guided by attempts to account for variables determining the degree to which an individual conforms to a group (Turner, 1991), it also informs us about an evolution in conceptualizing the relation between cognition and communication. Indeed, by analyzing informal and spontaneous communication between persons, Festinger (1950) highlighted the driving forces that seem to explain how people arrive to common representations of the world. He posited two major sources of pressure towards uniformity. The first one is social reality. The convergence to uniformity provides people with subjective validity of their beliefs, that is, a subjective confidence on which belief, attitude or "reality" is valid. People confronted to experiences closer to physical reality, on the other hand, need others (to establish what is real) to a lower extent. Social and physical reality are considered at opposite poles, but parts of the same continuum (Festinger, 1950). Thus, people need consensual validation of others to test the subjective validity of their beliefs (cf. Turner 1991).

While writing this dissertation, streets under my window close to the Matonge area in Brussels are full of police and particularly crowded, as Congoleses living in the neighborhood are protesting against the re-election of Kabila as president in the Democratic

Republic of Congo. To adapt one of Festinger's examples to this situation, how can, the person that I saw under my window in front of the police, be so sure that if Etienne Tshisekedi had won, things would be much better? Of course this person knows what Kabila has already done in the previous years for his country as a president, but the reality of the loser as being a better president is far from obvious. This person should feel his belief as subjectively valid to the extent that he is not alone, but manifesting within a group of individuals who also share that similar belief. Also, the person do not necessarily need that all people share his belief, opinion or attitude, to experience it as valid. The policeman in front of this person, who does not share his opinion, does not make him stop to judge his belief as valid, to the extent that all other Congoleses in the street are by his side. Indeed, people need to validate reality trough consensus within a referent group and not general others.

Thus social reality testing increases as physical reality testing decreases (Festinger 1950, see also Turner, 1991) and allows people to establish the subjective validity of their beliefs, attitude and opinions through the consensual support of others. These others should belong to an appropriate referent group. The group locomotion function, also highlighted by Festinger (1950), implies that pressure to conformity arises because such uniformity is perceived as desirable or necessary for the group to achieve a goal (e.g., denouncing the fraud of the presidential elections). Thus, such function, that is, the second source of pressure, reflects the idea not only that uniformity is necessary to reach a goal but also that individuals are dependent on the group for reaching a goal. To conclude, Festinger argued that informal communication serves uniformity pressures by 1) changing the beliefs of the deviant, 2) changing the group to arrive to gain an agreement with the deviant or 3) by rejecting the deviant from the group.

Moreover, with his social comparison theory, Festinger (1954) developed a new point. He claimed that the tendency to compare one's opinions and abilities with some other's decreases to the extent that the difference between the other person's opinion and abilities increasingly diverge with one's own. Turner (1991) resumed the evidence in favor of Festinger's formulation and pointed out also evidence for causality between group cohesiveness and conformity. To this matter Back's (1951) study showed influence within pairs after discussion. Through communication, high cohesive pairs (versus low cohesive ones) showed a higher tendency to influence each other but also to change the final belief

(in this case, a story, towards the position of the partner). They also show more resistance to the influence of the partner. This means that the pressure to conformity was more an active effort through communication rather than a passive acceptance of influence.

As previously anticipated, an important contribution along similar lines came from Deutsch and Gerard (1955), who defined the concept of *normative* and *informational influence* to distinguish two distinctive processes driving conformity, which can co-occur or operate separately (Turner, 1991). With normative influence people adopt the prevailing standard (the norm) to gain the positive effect (i.e., respect, liking, acceptance of the norm-defining group), whereas with informational influence they conform to gain certitude, to get the information lacking when confronted with ambiguous, novel situation. People have a high need to evaluate their attitudes and beliefs and to confirm that they are correct (Festinger, 1954). This sense of accuracy is rather a subjective experience defined by social reality rather than by objectivity (Zimbardo & Leippe, 1991).

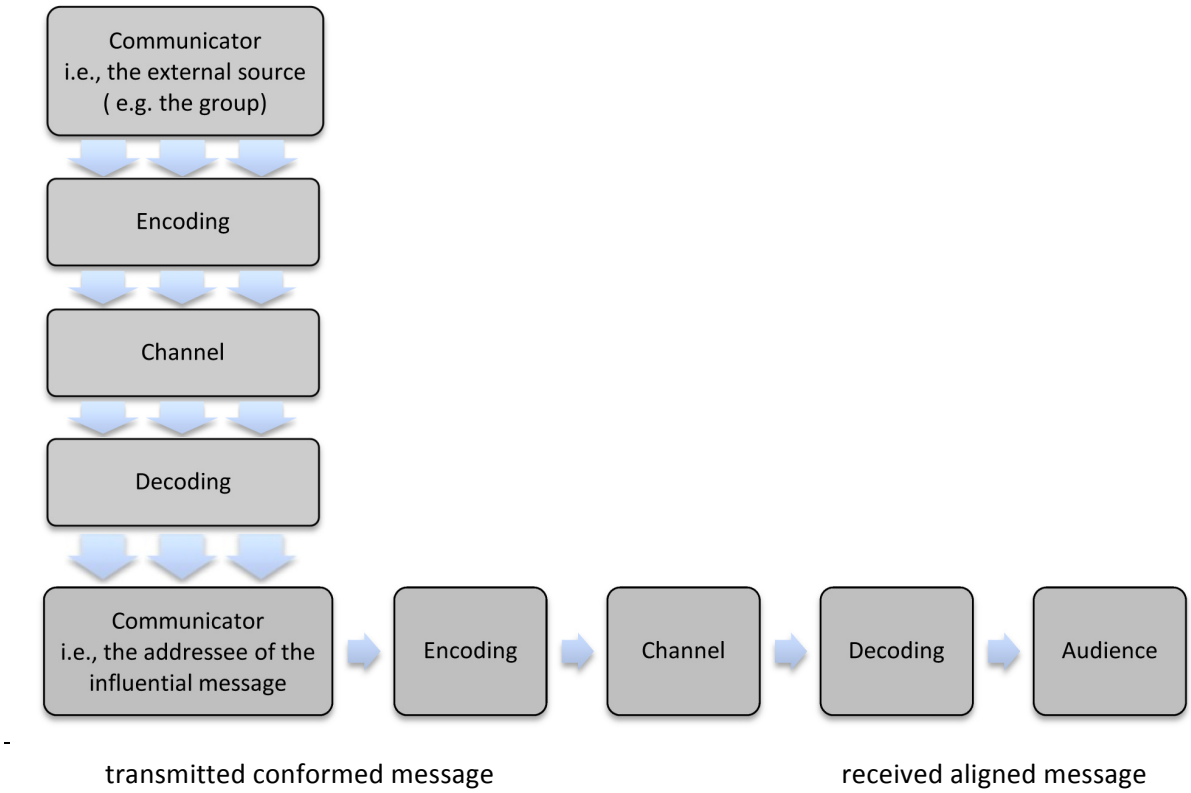
1.2.2.3 From the tabula rasa to an active receiver of external influence

To sum up, social influence theory considers how social interaction between members of a group drives the formation of shared social norms, which furnish coherence and disambiguation at the macro-level of culture, societies and history and at a micro-level of interpersonal relationships and individual behaviors (Turner, 1991). Through the literature evidence for a pressure to conformity has been highlighted, even when the group members are not asked to agree. The final agreement seems to be more a product of cognitive and social motivation rather than the result of forces beyond the individual's awareness (that is, the motivation to make sense of things or to fit in with others). Thus, if we consider the relation between the communication of attitudes and their mental representation under this perspective, all this social influence literature conceives the individual's attitude as the result of pressure. No matter if unaware of such pressure or if really motivated to converge, people's communication is continuously influenced by external inputs, their attitudes and beliefs being the consequence of their referentiality to a group. In this sense, cognition is reduced to the mere convergence of attitudes (cf. e.g., Sherif, 1936; Newcomb, 1943, Moscovici, 1976).

If we focus on the status of the individual, rather than on the status of his/her mental representation, a parallel can be made between his act to conform and the shift from a

Lockean passive individual (i.e., acquiring knowledge by experience which shapes simple ideas in his empty mind, a *tabula rasa*), to an active individual, who elaborates complex ideas. Indeed, in his early conception, this empiricist philosopher operated the switch between the two states: the experience just furnishes the passive individual with simple ideas through those sources that are sensations and reflections. But, the individual becomes active in the sense that he constructs complex ideas as he combines the simple ones (Locke, 1690, cited by Severino, 1991). The convergence of attitudes that are expressed through communication could be seen as the result of the influential ideas received from the external world. The motivational processes driving through conformity make the individual overcome his/her passivity, from his initial state of a blank slate, since receptor of influential messages. To return to Shannon and Weaver's (1949) model, this individual, despite being the active communicator (since cognitively or socially motivated) of his/her aligned attitude, remains the passive addressee of preexistent communication channels, where others are the informational sources.

Figure 2. Code model of social influence



In other words, this literature considers the social contextual influence on attitudes either as social pressure and expectations (i.e., norms) or as social cognitive motivation (e.g., need for disambiguation). In exploring such an influence, it restricts the context to a set of stimuli that act on a tabula rasa (i.e., the individual). But, this context could impact on the individual's mental representation. As Zimbardo and Leippe (1991) claimed, "weather for acceptance or for information, conformity can involve deeper psychological processes that go beyond behavior" (p. 60). Overt changes due to informational or normative influence could reflect changes at a cognitive level (such as representations' change rather than just communicative conformity). Indeed, as informational influence implies private acceptance, this process would lead to a change of the preexistent mental representation expressed through communication, as the result of a pre-locutionary effect of the situation. On the other hand, the communicator under normative influence, leading to compliance, would conform when expressing the attitudes, but this process does not necessary imply a mental alteration of the individual's preexisting representation.

To this regard, it is interesting to point out Kelman's (1958) distinction between three processes of influence: compliance, identification and internalization. Whereas *internalization* can be vaguely associated with the informational influence process, as it implies to evaluate the source of influence as credible and leads to private acceptance (Kelman, 1958), the compliance and identification processes can be seen as two facets of the normative influence. *Compliance* is based on others' power of rewards and depends on people's goal of achieving a favorable reaction from another person (Kelman, 1958); but *identification* is interesting to the extent that it implies private acceptance, at least so long as the relation is maintained with others, since it is based on others' approval with the goal of establishing a satisfying relationship with those others (Kelman, 1958). This process informs our argumentation because implying a cognitive change (i.e., a form of informational internalization) as a result of the normative influence process (Turner, 1991). It represents the pre-locutionary effect on the preexisting mental representation of the individual, who express conform attitudes because of others' approval rather than because cognitively motivated to disambiguation through comparison.

We now turn to the analysis of the post-locutionary effects of communication. As illustrated, whereas the pre-locutionary effects represent the contextual influence *on the*

expression of attitudes, the post-locutionary effects refer to the influence *of the expression* on the preexisting attitudes.

1.3 Post-locutionary effects

We have argued that the contextual situation (e.g., a communication goal) may influence the communicated message and may lead the individual to adopt the new expressed attitude, even if the latter differs from the original one, which preexists to the communication act (Klein et al., 2011). As explained, this can happened in anticipation of the communicative situation (i.e., pre-locutionary effect) or through the very act of communication (post-locutionary effect, see Douglas et al., 2008). Many experiments have nowadays demonstrated how contextual factors, to be conceived as completing the linear representation of the code model (cf. Shannon & Weaver, 1949), are responsible for biased messages, which lead the individual to finally adopt the expressed beliefs. We will now revise some examples of this phenomenon.

1.3.1 Language, accountability and the communication game effects on cognition

Analyzing the interaction between language and cognition, Chiu et al. (1998), underlined how the use of language to encode thoughts or to describe a state of affairs, can affect the representation of the state of affairs in memory. To this regard, the *verbal overshadowing hypothesis* (Schooler & Engstler-Schooler, 1990*)* suggests that verbalizing a visual stimulus or describing a situation could affect the related representation and bias the communicator's memory. For example, these authors found that participants who saw a video presentation of a bank robbery and who were asked to describe the suspect of the scenario were less accurate in later recognizing the target in comparison with participants who had not to describe the scene (see also Meissner, Brigham & Kelley, 2001). Schooler and Engstler-Schooler (1990) also argued that the use of evaluative-charged words can change the speaker's attitudes by evoking mental representations that are consistent with the evaluative connotations of the term, but which differ from the original nonverbal memory. Thus, as it is the very act of verbalizing what finally changes the mental representation of an image, the resulting memory of it is a matter of post-locutionary effects of the communication situation.

In the same vein, Holtgraves and Kashima (2008) highlighted other phenomena where the creation of a linguistic representation drives processes altering the preexisting representation of the speaker. Within the domain of emotions research, they reported studies showing that the use of language to describe others' or own emotions may alter the underlying representation of the emotion (Halberstadt, 2003; Libermann et al., 2007). Also, it is well known that verbalizing (especially negative) emotional experience has positive effects for people as it leads to the elaboration and change of final attitudes towards the experience (Pennebaker, 1997; Pennebaker & Seagal, 1999; Holtgraves & Kashima, 2008). Extra-linguistic factors, and this is of major interest here, can also result in unintended cognitive consequences for communicators (see Krauss and Fussell, 1996).

When a preexisting representation is transformed into a story, for example, its expression is constrained by many factors (e.g., the importance to follow a story-telling schema, the expectations of the audience). This has consequences for the representations people will end up holding (to this matter see for example, Marsh & Tversky, 2004; Pasupathi, Alderman & Shaw, 2007). Also, this is particularly relevant when people talk about the past, as it will influence memory about the past events (Holtgraves & Kashima, 2008).

But, the cognitive consequences of communication may also be essentially related to social motivational processes. Studies based on the accountability model, for example, illustrate how people strategically shift their own attitude on social issues (e.g. the capital punishment) as a function of their audience's viewpoint. Probably as a result of both a prelocutionary and a postlocutionary effect, this shift happened within a communication setting where participants were asked to justify their position to another individual (Tetlock, 1983; Tetlock et al., 1989).

In pointing out the relevance of the audience belief, this example invites us to consider the concept of the *communication game.* Introduced by Higgins (1981) thirty years ago, this term conceptualizes interpersonal communication as a "game" since this activity involves interdependent social roles and purposeful interpersonal interactions occurring within socially defined contexts (Higgins, McCann & Fondacaro, 1982). In contrast to previous approaches focusing on the quality of the transmitted information, this new one emphasizes communication roles, goals conflict, rules conflict and decision-making. For instance, speakers and listeners engage in communication to achieve goals such as sharing

information to enhance group problem solving, to optimize one's self-image, maintain a social bond, achieve a common definition of social reality (cf. Higgins et al., 1982). According to this view, the authors considered influences of the "communication game" on social cognition through an experiment in which participants read an essay describing behaviors of a stimulus person. Speakers resulted to be more likely to "stick to the facts" in describing the stimulus person when they believed their listener had different information about the target than when they believed he had the same information (Higgins et al., 1982). Moreover, verbal encoding to suit the communicative situation affected the speaker's own subsequent memory of the stimulus person.

1.3.2 From the activation of the receiver of external influence to the (co)constructor of shared attitudes

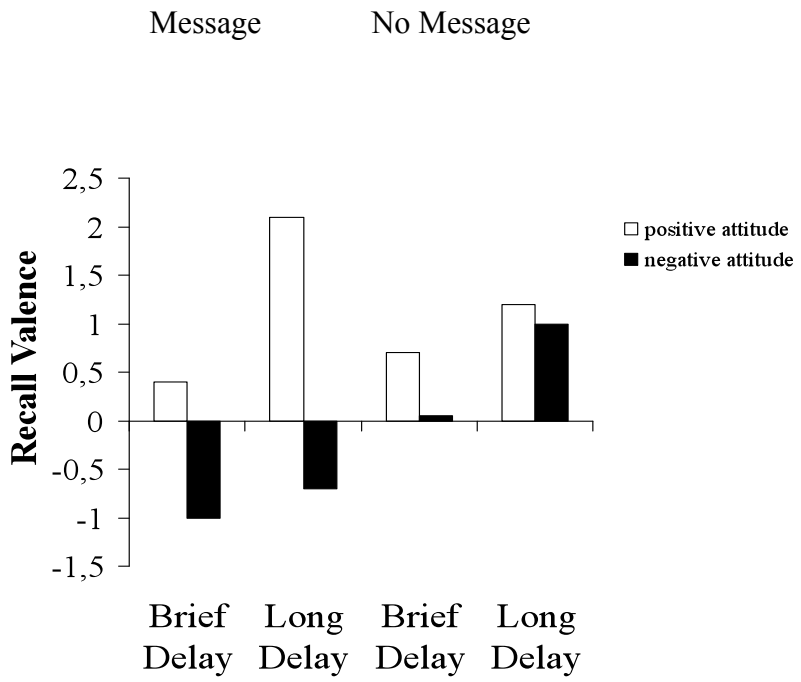
Tailoring and tuning a message to suit an audience is common in interpersonal communication and several models of communication suggest that it is also a principle for good communication (Stryker & Statham, 1985; Clark & Brennan, 1991; for review Higgins, 1992; Krauss & Fussell, 1996). In formulating a message, the speaker takes into account beliefs, knowledge and attitude of the audience (e.g. Clark & Marshall, 1981; McCann & Higgins, 1992). Such an effect of the audience on the message's production matches the above-mentioned contextual effects of the communication situation on the expression of the transmitted message. The relevant novelty here is that it is the very expression of those messages that later affects the subsequent communicator's cognition.

1.3.2.1 The saying-is-believing effect

The major example of such a process is represented by the "Saying-is-Believing" effect (Higgins & Rholes, 1978). These authors set up a study in which participants received a description of an ambiguous behaviours displayed by a character (i.e., the target) and had to produce a description of this target (i.e., the message) for an audience, who either liked or disliked the target. The results showed that participants shaped their message in such a way that it matched with their audience's attitude about the target. This effect fall under the banner of *audience tuning* (Higgins, 1992; Higgins, 1999). Moreover, participants later biased their own memory of the information about the target so as to be consistent with their previous message. In other words, participants end up remembering what they previously

said rather than what they previously read about the target. This audience tuning effect on memory has been labelled *saying-is-believing* effect. These effects, that have been found to persist, or even increase, weeks after the original message production (cf. Higgins 1992), were not found when communicators expected to communicate to an audience but did not actually communicate (cf. Figure 3). The following figure represents Higgins & Rholes' original results about participants' recall of the target description after a brief (15-20 min) and a long delay (12-15 days) between message and recall, and as a function of the audience's attitude and the actual message production.

Figure 3. Higgins et Rholes'(1978) saying-is-believing results



Thus, simply knowing that the audience held a specific attitude about the target person resulted insufficient to induce the final impression and memory. What matters here is that the communicator expressed the new attitude wile communicating. All the investigations based on this approach, that we will review in the next chapter, postulate that the *saying* leads the communicator, under certain conditions, to integrate the audience's perspective and thereby, to create a shared reality.

Thus, those studies introduce a new perspective in our analysis of the communication situation's post-locutionary effects. Indeed, they seem to suggest that the individual is not susceptible to the influence of the contextual factors (i.e., the audience's perspective) if he does not engage in a reconstruction process. In other words, it is posited that, without any tuning, through which the tuned attitude is made his/her own, no influence on the communicator's cognition is possible.

From the activation of the individual who was the *tabula rasa* receiver of external influential messages we finally arrive at the conception of an active communicator who becomes (co)constructor of shared attitudes.

1.3.2.2 From a cognitive to a shared reality interpretation

In this section we do not take into account all the saying-is-believing studies, which will be later illustrated in specific sections of the present dissertation (cf. 2.3.1; 2.4.3), but we give some of the initial accounts of the saying-is-believing effect, which have now been refuted, with the specific purpose of highlighting how researchers within this domain end up in conceiving a shared reality theory for explaining such a phenomenon. The latter theory, which will be the focus of the next chapter and of our empirical studies, is relevant as it proposes an alternative conceptualization out of our original definition of attitude. Indeed, it will lead us to analyze the processes through which people, from their preexistent (especially if ambiguous) original attitude towards an object (e.g., a target person) will end up holding a cognitive "reality" of such an object, which is subjective but shared with the audience through communication, thereby acquiring objective validity.

In comparison with the above mentioned work by Zajonc (1960), who postulated a complex activation of transmitters' cognitive structures when anticipating communication, the saying-is-believing approach makes an additional step. Indeed, researchers importantly took into account the receivers' knowledge or perspective towards a topic and considered the effect that the transmitters' awareness of this audience's knowledge or attitude could have. Indeed, communicators changed their communication and subsequent memory for the original information in function of this awareness. Even at the early stages of the saying-is-believing demonstration it seemed clear that the effect of the audience's knowledge or attitude on the communicator's memory was dependent of the message production. But, several processes could explain the role of the transmitted message in shaping memory.

A first hypothesis assumed that the biased message was dependent on the biased encoding of the original information. Thus, the effects of communication on cognition seemed to depend on the way people *processed the incoming original information,* because of their awareness of their audience's perspective. Early explanations of the saying-is-believing effect, indeed, considered that the awareness of the audience's position engaged communicators in a specific form of encoding, which was already biased.

According to this reasoning, we have already mentioned studies showing that the communicators' knowledge about the audience led them to engage in a different information process than if they were unaware of the audience (Carnaghi et al., 2005; Carnaghi & Yzerbyt, 2007). Social concerns seemed therefore to influence cognition in audience-related contexts since they constrained information processing.

Along explanations focusing on information-processing mechanisms as responsible for biased memory, Hirt, McDonald & Erickson (1995) also highlighted the role of *encoding* set in reconstructive memory. These authors did not focus on communication but compared impressions set, recall set and comprehension set instruction effects on accurate retrieval of the original information. They showed that participants in the recall set were more accurate in their recall than participants in other conditions. Participants in impression and comprehension set were strongly affected by their expectancy about the outcome information, resulting in accurate recalling of consistent information but in expectancy-congruent distortion of the inconsistent information. Through these results the authors refined Hirt's (1990) model of reconstructive memory, conceiving that recall depends on the different weight people give to the two opposite sources of information conceived as two points along a continuum: on one side, the memory trace and on the other, the expectancy information. Responses of recall set participants seemed to be driven by the weight given to the memory trace of the original information whereas, for example, in conditions where participants had no memory for the original information (e.g. when increasing retention interval) they engaged in an expectancy-based inference process and gave exclusive weight to their expectancy. Thus, this kind of model also stressed the impact of the encoding phase of the original information on the later memory, but beyond a communication context.

All these studies seem to corroborate the early explanation of the saying-is-believing effect, which focused on the encoding of the original information as responsible for the later biased message. This message, in turn, determines the recall bias. But, this explanation does

not last out the experimental manipulations which, for instance, altered the moment people were made aware of the audience's perspective (for review, see Echterhoff et al., 2009). It has been shown that the effect occurs even if communicators know the audience attitude *after* encoding the input information (Kopietz, Hellman, Higgins & Echterhoff, 2010; Experiment 1, see also Sedikides, 1990).

Thus, another possible explanation for communication effects on later memory has been proposed as residing at the stage of *encoding during message production*.

In this regard, recent studies highlighted the crucial role played by selective rehearsal and schemas activated during message production. Clarifying that retelling is not the same as recalling, Marsh (2007) argued that elaborative rehearsal during retelling not only determines better remembering of the rehearsed information but, moreover, that people's need for coherence when retelling events, leads them to use a "schema" and this schema will be activated and available to guide their subsequent recall (for research using a schema approach see also Tversky & Marsh, 2000). This can be seen as an additional illustration of the importance of communicators' specific goals. Moreover, such a perspective highlights the influence of the social context as an element that can play a crucial role on recall biases after an unbiased phase of encoding the original information, that is, as a post-locutionary effect of the communicative situation.

But, as explanation of the saying-is-believing effect, the one focusing on message production is also not exhaustive of all the experimental evidence. Indeed, it has been shown through several experiments that the simple activation of a valence schema during message production is not sufficient to produce the saying-is-believing effect (Kopietz, Echterhoff, Niemeier, Hellmann, & Memon, 2009). Also, audience-congruent memory biases were found under certain conditions even without message production (Higgins, Echterhoff, Crespillo & Kopietz, 2007; see also Hausmann, Levine & Higgins, 2008).

Moreover, in view of the important role plausibly played by information activation and accessibility in encoding, retelling and recalling the original information, four experiments by Echterhoff and colleagues (2008) analyzed cognitive mechanisms such as selective rehearsal, selective retrieval and source-discrimination because they could also trigger audience tuning and its effect. As none of these processes were associated with the size of the recall bias, the authors rejected these hypotheses and argued for a new explanation of the effect, which is nowadays largely accepted (see Echterhoff et al., 2009;

Echterhoff & Higgins, 2011). Highlighting all conditions moderating the audience tuning effect resulting in a biased memory of people engaged in communicating with an audience, the authors concluded that communicators' need for "sharing reality" with others plays a key role in driving the audience-congruent memory bias.

To foreshadow the shared reality account to the saying-is believing effect, we just mention here that communication effects on memory are argued to occur only when communicators *are adequately motivated to experience a shared reality with others* (Echterhoff et al., 2008; 2009; Echterhoff & Higgins, 2011). The following chapter will develop the concept, retrace its evolution from early to later formulations and foreshadow still open questions within the theory.

As for our excursus, started from the early idea of the passive individual transmitting encoded attitudes through a linear channel of communication, we are now confronted with the motivated individual who, through the communication process which involves contextual factors unrepresented in the original code model, will hold and spread a shared attitude (i.e., reality) towards the target object. The next chapters will offer us the opportunity to explore such an individual's activation within the specific saying-is-believing communication paradigm. The theoretical and practical implication of such a conception will be highlighted through the empirical evidence and discussion developed later on.

1.4 Conclusions

In the first chapter of the present work we attempted to retrace how the relation between cognition and communication has been appraised within social psychology. The research reviewed so far, taking distance progressively from the mere application of the code model, has evolved in focusing with increasing interest on the contextual factors acting in the communication situation.

In line with this effort, social influence's early contributions highlighted external forces influencing the individual. This latter, firstly portrayed as a passive receiver of information, has then been considered under the influence of social motivational forces, which triggered his/her activation. The communicator thus became thus agent, in search for meaning and social approval. Finally, in view of the literature, it has been suggested that the mere activity of communication may impact on the way individuals form, shape and change attitudes, by sharing reality. Accordingly, recent theorization on the saying-is-believing effect

has been mentioned because it embraces a revolutionary perspective: The individual holding preexisting mental representations expressed through communication, who became receptor of influential social representations because of motivational forces, leaves now the stage to the individual conceived as active (co)constructor of his/her own shared representations.

In other words, shared reality theory finalizes efforts in considering contextual factors of the communication activity as well as the relation between communication and cognition, by postulating a social-cognitive mechanism which determines when and for what purpose attitudes are established, maintained and changed (Hardin & Conley, 2001). As we will later deeply explore shared reality theory, we will discover that cognitions (in our case, attitudes) are established and changed as a function of the possibility to achieve and maintain shared realities within a given social relationship (Hardin & Conley, 2001).

The second chapter helps us delineating this idea through shared reality theory: a strong formulation that, if not completely blind to the earlier theoretical tradition, could embrace it by clarifying and deepening some key concepts as well as furnish lines of conduct for the quest of empirical evidence.

II

Exploring Shared Reality Theory

2.1 Origins In social psychology

As it offers an integration of the individual and the social contributions in defining the individual's experience, Shared Reality Theory (Hardin & Higgins, 1996; Hardin & Conley, 2001; Echeterhoff et al., 2009; Echterhoff & Higgins, 2011) may be rooted in the social behaviorism[4] and symbolic interactionism sociological traditions (Harding & Higgins, 1996). Indeed, influenced by James' pragmatic philosophy, social behaviorists (e.g., Berger & Luckmann, 1996; Dewey, 1930; Mead, 1934) have attempted to describe how the individuals' cognitive world is constructed and regulated by interpersonal interaction (Hardin & Conley, 2001). Postulating the individual's mind as existing only in relation to other minds that share meanings, Mead (1982) already foreshadowed a key point of the shared reality hypothesis, which is that the individual's understandings are derived from social interaction.

Although the socially shared basis of human experience was already recognized within early social psychology research (e.g., Ash, 1951; Festinger, 1950, 1954; Moscovici, 1981; Sherif 1935; 1936; cf. section 1.2.2, this work), Hardin and Higgins (1996), in formulating their theory, not only embraced the above mentioned sociological tradition but took a stand in matter of the place given to the person by previous social psychology. This latter was locating the basis of the experience within the individual. The authors did not deny the increasing importance given by social psychology literature to social influence pressure nor its focus on the growing idea that people's experience and behavior are determined in a person-situation interaction, but denounced the continuous return to

[4] Social behaviorism should not to be confounded with behaviorism. Behaviorists argue that all actions, thoughts and feelings can be conceived as *behaviors*, which 1) are based on patterns of stimuli and responses and 2) can be scientifically studied without recourse to psychological constructs such as the mind (cf. Baum, 1994). To use Mead's (1934) words, the social behaviorism approach, instead, "recognizes the part of the act which do not come to external observation, and it emphasizes the act of the human individual in its natural social situation" (p.8).

individual processes for explaining cross-situational behavioral differences. By contrast, these authors attempted "to ground even the most basic aspects of cognition –including how experience is represented in memory- in terms of the individual's place in ongoing social activity" (Hardin & Higgins, 1996, p. 68).

2.2 Evolution in theory

2.2.1 Hardin and colleagues

2.2.1.1 Reliable, valid and predictable experience: the role of social verification in shared reality creation and social regulation

Hardin and Higgins firstly proposed their hypothesis of shared reality in 1996. Within the social psychology tradition, they designated Festinger's theory of social comparison (Festinger 1950; 1954) as the precursor of their formulation and postulated that any experience "survives as a reliable, valid and predictable state of the world to the extent that it is socially verified" (p. 29), that is, shared with others. Nevertheless, they took distance from social comparison theory because their hypothesis did not involve a distinction between physical and social realities (for this differentiation in Festinger's formulation, cf. section 1.2.2.2). To this matter, they highlighted how the mere definition of the word "objective", since its Latin root, implies the idea of what is known 1) to exist independently of the individual but also 2) to be recognized by others. Thus, they could trace the parallelism with the scientific domain, where the "objective" is defined in relation to others' (scientist) verification. Also, the authors pointed out how the idea of *social verification* as being essential for the individual's experience was not new but a theoretical assumption in the social psychology literature, which needed to be better formulated as a hypothesis for further research. Moreover, they argued that shared reality creates meaning for the individual by delineating the form and function of the external world and sustained this idea by reviewing previous research relevant to the matter.

The two authors referred to Sherif's (1935) autokinetic experiment illustrated in our first chapter and to the following findings based on that paradigm (see Sherif, 1936; Kassin, 1979) as to an appropriate exemplification of shared reality creation where 1) the subjective became objective through consensus (i.e., social verification); 2) the created shared reality (i.e., the established group norm) was maintained with stability after time; 3) people were

referring to their judgments as reflecting their actual experience rather than mere conformity to others (i.e., experiencing the objective validity of sharing).

It was conceived that shared reality established through social interaction leads people to define stables properties of the world. This is possible through social construction of the direct perceptions as well as through social transmission. Social construction refers to the fact that people need social validation even to establish that immediate sensation (cf. Sherif's experiment) corresponds to objective reality. Social transmission, on the other hand, implies that even indirect experiences (i.e., a past event that people had not witnessed) enter people's knowledge by means of social communication (Hardin & Higgins, 1996). To this matter, Jacobs and Cambpell (1961) reproduced Sherif's autokinetic effect to focus on cultural evolution under controlled conditions. They showed how an exaggerated perceptual norm about the light's movement persisted in subsequent generations. To do this, they firstly use confederates exaggerating their estimates to establish a cultural norm in small groups of subjects. Later, confederates and old members of the group were removed one at a time and replaced by new members. The transmission of the established norm was found to persist among 4 or 5 generation and then to gradually decrease to normal levels. This experiment resonates well with the idea of the social transmission of reality.

A fundamental claim of Hardin and Higgins' formulation of shared reality involves the definition of its function, referred as to the establishment of reliable, valid, general and predictable experiences and thereby its important role for social regulation.

Indeed, by means of a statistical metaphor, the authors argued that an experience repetitively recognized by others (i.e., shared) is demonstrated to be *reliable*. Also, the subjectivity of the individual experience gains objective *validity* to the extent that it is socially verified. Through this process, which involves people who are different from the self, it is granted the *generality* of the shared reality, which is broader than the subjective experience in a given moment. Thus, those properties of shared reality imply that its establishment facilitates the prediction and control of oneself and his/her environment (i.e., the epistemic function of shared reality). Also, going a step further, the authors highlighted the regulatory function of shared reality. Indeed, to the extent that shared reality serves the recognition of valid, general, reliable and predictable experiences, efforts towards its establishment should be at the basis of social interactions (Hardin & Higgins, 1996).

The authors reported evidence, in both laboratory and natural conditions, (through perspective taking, role taking and social tuning studies as well as through evidence on linguistic strategies adopted in communication) of people making active efforts towards shared reality. Communication is considered as the major route of shared reality establishment (see also Bratanova, 2008; Echterhoff et al., 2009, Echterhoff & Higgins, 2011). In chapter 1, we have argued that communicators modulate their communication to assure mutual understanding with the addressee and reported some experiments supporting this claim (cf. sections 1.2.1; 1.3.2). Shared reality is established also through these active efforts of the communicator in the ongoing interaction, which are crucial to assure the proceeding of the communicative activity (e.g., when feedback is failing the conversations are likely to be interrupted). But, these efforts do not guarantee the actual gain of sharing.

The achievement of shared reality is testified by linguistic phenomena (e.g., the shift in using definite rather than indefinite articles in the ongoing communication), communicative abbreviation (e.g., Schachter, 1951), alignment of communication styles (e.g., Garrod & Anderson, 1987) among others. The shared knowledge established through interactive negotiation facilitates further interactions and is demonstrated to last over time to the extent that it has been established and repeated through multiple social interactions. As a consequence, well-established realities may not resist new alternatives shared realities in the absence of continuous social verification of the former (Hardin & Higgins, 1996).

Also, as it is used to regulate interactions, shared reality is particularly likely when people seek approval or are attracted to others (Higgins, 1992; Hardin & Higgins, 1996; Hardin & Conley, 2001; Echterhoff et al., 2009). This relational function of the shared reality achievement will be detailed in a specific paragraph of the present dissertation (cf. section 2.4).

Shared reality achieved through social interaction also plays a role in the establishment and maintenance of self-understanding (e.g., Stryker & Statham, 1985). As anticipated by considering Mead's position, the experience of the self is rooted on the shared understanding achieved through interactions. Also, people are shown to prefer shared information that is consistent to the self-concept (e.g., Swann 1990; Swann & Read, 1981), and those aspects of the self that are regularly shared with significant others are resistant to change (Hardin & Higgins, 1996).

To sum up, one important point stressed in this first formulation of the theory is the *dialogical circle* addressed by shared reality creation within communication, as its achievement regulates social interaction as well as the self, but social realities about the self are defended in new interactions and are thus also responsible for social regulation. Delineating implications of the hypothesis for further research in different domains, suggesting empirical tests and relating the new concept with previous research, the early formulation of shared reality is summarized in three points. First, the experience of reality is created and maintained for the individual through social verification; second, social interaction is based on the establishment of shared reality, which in turn regulates social interaction and finally, shared reality established through interaction also regulates the self.

2.2.1.2 Shared beliefs and relationship affirmation through shared reality

The major work of Hardin & Conley (2001) operates the transition from the early formulation of the shared reality theory (i.e., Hardin & Higgins, 1996) to its most recent development (Echterhoff et al., 2009). In other words, the authors focused on those key points that, even if foreshadowed in the former hypothesis, were not explored enough and were mute about their crucial further implication, completely embraced by the latter.

Indeed, in this later work the authors clarified the previous proposition of Hardin and Higgins by referring to what they called the two fundamental forces driving human behavior, which are *cognitive understanding* and *social connectedness*. Denouncing contemporary social cognition research for focusing exclusively on the former and mainstream social psychology for focusing on the latter, they individuated in Hardin and Higgins' (1996) formulation of the theory the potential to synthesize the idea of the *social-cognitive interdependence* through the achievement of shared reality. This statement, which recognizes that *epistemic* and *relational motives* are driving shared reality creation, became later one of the four defining features of the shared reality concept (see Echterhoff et al., 2009, Echterhoff & Higgins, 2011). The new formulation developed the analysis of the key role played by these two fundamental human needs and reviewed empirical evidence to this matter, among others already developed by Hardin and Higgins in their 1996's work (e.g., the shared reality implication in self and social regulation).

To summarize the crucial novel points of these authors' contribution, it is important here to notice the two fundamental principles predicated on the assumption that epistemic and relational needs are satisfied by the experience of shared understanding with others.

First, given that the establishment and maintenance of cognitions require shared reality experience, beliefs and attitudes are established and maintained and changed to the extent that they are shared with others and abandoned and changed to the extent that they are unshared.

Second, given that the establishment and maintenance of social relationships is predicated on shared reality experience, social relationships are created and maintained to the degree that shared reality is met and maintained within those relationships. They are therefore abandoned to the degree that shared experiences are no longer characterizing those relationships (Hardin & Conley, 2001, cf. p. 9).

As communication represents a meaning-making activity, which is cooperative and interdependent (e.g. Austin, 1975; Grice, 1971; Watzlawick, Beavin, & Jackson, 1967; Krauss & Fussell, 1998; Hardin & Higgins, 1996), the communication literature offers the chance to study the foundation of the shared reality experience and thereby to explore the bases of meaningful social relationships as well as cognitions, such as attitudes and beliefs.

We will now turn to the recent formulation of shared reality theory (Echterhoff et al., 2009; Echterhoff & Higgins, 2011) to explore three out of four features of the current shared reality concept. Later, the specific 2.3 section will retrace the history, from social cognition's, social influence's and traditional social psychology's formulations to the recent theoretical developments, towards the recognition of the two motivational processes (i.e., epistemic and relational) underpinning shared reality creation (i.e., a fourth defining shared reality feature). It should be noticed that those features are closely intertwined and that our choice of presentation serves the sake of clarity and the rationale for introducing our empirical part.

2.2.2 The defining features of shared reality

In line with the earlier theorization, Echterhoff and colleagues (2009) defined shared reality as the product of social sharing and identified four features characterizing its experience. First of all, the experience of shared reality a) refers to *a commonality of inner states* (versus overt behaviors) of the individual and b) concerns a common view *of a target*

entity. Moreover, this *sharing* of *inner states about* something is also c) responding to *epistemic* and *relational motives* and, last but not least, d) depends on the *subjective experience* of the achieved commonality.

A first contribution of Echterhoff and collegues' (2009, see also Echterhoff & Higgins, 2011) theorization is to clearly define what the term "shared reality" means and what it does not mean in comparison to previous conceptualization. The authors distinguish their idea of "sharing" from 1) merely communicating one's inner states to others, which implies the others' awareness of the inner state but does not require a commonality between states and from 2) individuals' joint collaboration in a task or project, who are not necessarily sharing inner states nor have necessary something in common. Nevertheless, this last occurrence is implied by a third sense of sharing (i.e., partaking in a consensus): people gain a commonality when sharing the same views or beliefs. But, this commonality should be considered as objective, in the sense that it can be identified by external observers and does not require a subjective experience of sharing. Finally, the authors highlight the difference between these three meanings of sharing and a fourth one, the closest to their conceptualization, that is, when something is "held and experienced in common" (p. 497). Such a definition appropriately embraces the idea of subjectively experiencing a commonality with other's inner states about the world. It has to be noticed that such a reality is nothing but a subjective state and does not require objective verification.

In this section, we shall briefly analyze how Echterhoff and collegues (2009, Echterhoff & Higgins, 2011) substantiated three of the four conditions underlying shared reality. As mentioned above, the motivational underpinnings of social sharing (i.e., the forth condition) will be the focus of section 2.4 of this dissertation.

First of all, people sharing reality achieve a commonality with others' inner states (i.e., their feelings, judgments, beliefs or evaluations concerning a target referent). This means that only a correspondence or alignment with others' behaviors is not sufficient. The authors argue for this idea by highlighting how the awareness of others' inner states contributes to people's self-regulation. Indeed, people know that others' overt behaviors towards them are typically influencing them, but also that those behaviors are mediated by others' beliefs and attitudes (Higgins, 2005). Thus, although "sharing overt behaviors" sometimes means "sharing inner states", sometimes this is not the case. The authors illustrate this last possibility through the example of a brother imitating the behaviors of her

sister. In that case the commonality of overt behaviors could be indicative of a brother making fun of her sister rather than agreeing with her inner states. As we will later explain, processes like mood contagion, empathy but also inferences from facial expression and gesture or conscious and causal reasoning, among others, are used to infer one other's internal status (for a review see Malle & Hodges, 2005). Those mechanisms correspond to possible preconditions for shared reality: to achieve a connection with others' inner states these last should be identified at a first place.

A second condition for shared reality is that the gained commonality is always about some aspects of the world, that is, about a target referent. This is defined as the *aboutness* criterion for shared reality (Echeterhoff et al., 2009, Echterhoff & Higgins, 2011). Through the triadic relation required by shared reality, which involves the person experiencing 'sharedness', a sharing partner or group of persons and the target of this sharing, people not only infer others' inner state but look for what these others' states tell them about the world. The authors list some mechanisms helping people identify the referent of others' states of mind such as those building on perceptual input or verbal directions used by others and referred to the object, as well as general background knowledge, but also perspective taking or common ground (cf. section 1.2.1, this work).

Beyond the appropriate motivations leading to it (which will be illustrated in section 2.4), there is one last condition that has to be met for properly speaking about shared reality in the sense of Echterhoff and colleagues (2009) that is, people should actually experience the achieved commonality with the other's inner state about a target referent. It is not necessary that this experience is based on an objective fact, what matters is that the person sharing reality is convinced that 1) the other's inner state corresponds with his/her own and that 2) these states are about the same referent. In this sense, this last condition of subjective experience (rather than factual evidence) is interrelated with the two others. To this matter, Echeterhoff and colleagues cite examples of people being so highly motivated to socially share reality that they infer a commonality with others' beliefs or attitudes even if this is not true (for example, in phenomena such as false consensus: see Ross, Green & House, 1977). Subjective experience of sharing inner states has also been demonstrated to influence people's liking of others to a higher extent than objective sharing (Pinel, Long Landau, Alexander & Pyszczysky, 2006). Parallel to the tendency of inferring others' inner

states as matching their own, people also tend to infer the referent of the shared commonality.

These three conditions, additionally to the fact that shared reality should be appropriately motivated, are the building blocks of the new definition of shared reality, which can be finally considered as the product of a (subjective) experience of a commonality with others' inner states about the world (Echterhoff et al., 2009).

2.2.2.1 Distinctiveness

As such, shared reality can be distinguished from other phenomena of social sharing. The main argument through which Echterhoff and colleagues (2009) distinguish their formulation of shared reality from other kind of *emotional sharing* is that the experienced commonality of inner states does not always refer to a clear target referent. The authors use empathy as example. Exploring de Waal's (2008) conceptualization of empathy as being the faculty to be affected by the emotional state of another person and to share such state, they pointed out through examples how the target of this sharedness in not always identifiable. For instance, they highlighted how a person can be empathic with a friend that has been left by his wife. The authors claimed that in such case the sorrow of this person for the friend does not refer to the same target of the friend's sorrow, that is, his wife leaving him. They gave other examples of commonalities of emotional states where empathy is not involved, and focused on mood contagion, the automatic transfer of inner states between persons (see Neumann & Strack, 2000). The conclusion is always the same. Despite involving a subjective experience of commonality of internal states (which corresponds to two criteria of their definition of shared reality) these phenomena can occur even if the commonality does not clearly refer to a specific target object. Thus, such phenomena could be antecedents for the occurrence of shared reality, in that they are processes through which people become aware of the other's inner state. However, they cannot correspond to the shared reality whole process since they do not satisfy the "aboutness" criterion.

The opposite is true when considering the case of *perspective taking*, that is, when people endorse the other's view about something (for review see Schober & Brennan, 2003; Davis, Conklin, Smith & Luce, 1996). An educator or a parent can adopt a teenager's perspective to better understand the problem to which he/she is confronted to in this period of life, but this does not mean that the parent or educator share the same inner

(emotional) status. This example illustrates what the authors claim: This phenomenon differs from shared reality to the extent that people take into account the other's perspective about something, a common referent target, but do not necessary experience a commonality of inner states towards this something, experience required in shared reality creation. But, to the extent that achieving a shared reality with another person requires recognizing the target of the other's inner state, perspective taking can be one of the precursors of shared reality (Echterhoff et al., 2009).

Parallel to perspective taking, *theory of mind* (for a review see Flavell, 2004) also implies the ability to infer others' inner states such as beliefs, intentions, perceptions, as well as desires (Premack & Woodruff, 1978), thereby predicting others' behaviors. Once again Echterhoff and collegues (2009) distinguished this notion from shared reality since it does not necessary mean that people end up subjectively experiencing a commonality of mental states. Moreover, they underline that, in this process, no assignment of the other's inner state objectivity is made, whereas in their conceptualization the object of sharing is a reality that becomes the truth for people experiencing it.

Both the *aboutness* and the *commonality of inner states* criterions for shared reality are questioned when considering *embodied synchrony* and *mirroring* (for review see Iacoboni, 2008). Research on embodied synchrony highlights the correspondence of neural states between an observer and an observed person. But, despite embodied synchronization requires that a common inner state is achieved by the observing individual (by means of a neural activation correspondent to the observed person's inner state), this alignment does not necessary involve a target referent (Echterhoff et al., 2009). This is the case, for example, of neural simulation for intransitive actions such as dancing (Calvo-Merino, Glaser, Grèzes, Passingham & Haggard, 2005). On the other hand, researches on mirroring assess mirror neuron activity when people observe others' actions (e.g., grasping a mug). The mirror activity leads people understand the intentions underlying an action: In a seminal experiment the neural activity was found to differ when the intention underling the observed action (i.e., grasping the mug) was either drinking or cleaning up (Iacoboni et al., 2005). Whereas neural mirroring relates to a referent object, it does not imply the sharing of the inner state: Mirror activities facilitate the understanding of others' inner states, such as intentions, without requiring that the observer actually shares those states or intentions (Echterhoff et al, 2009).

In chapter I (cf. section 1.2.1) we have defined the background information that is taken for granted during a conversation as "*common ground*" (for review see Kashima, Klein & Clark, 2007). As such, it can be conceived as a process contributing to building those conditions necessary to the achievement of shared reality (see also Klein et al., 2010) since a common ground helps communicators identify a target referent of the communication. Nevertheless, it does not imply that participants end up sharing a commonality of beliefs or feelings (i.e., inner states) towards such a target (Echterhoff et al., 2009).

The differentiation made by the authors between shared reality and *alignment of linguistic representations* (see Garrod & Pickering , 2004) is also based on this argument.

When approaching studies relating to the spread of *shared cognition within groups*, Echterhoff and collegues (2009, Echterhff & Higgins, 2011) clearly precise the following points. The commonality gained in groups' phenomena is often motivated by those epistemic and relational motives conceptualized as the underlying forces driving shared reality (cf. section 2.4). Desire of understanding as well as need of belonging (see e.g., Deutsch & Gerard, 1955, cf. section 1.2.2.2) motivate groups to achieve a commonality of inner states, but also and often of overt behaviors. In this latter case these phenomena differ from shared reality creation, as they do not necessarily imply sharedness of inner states. A clear illustration of this comes, for example, from politics, where overt agreement with someone's beliefs is more important and sometimes desirable than a real internal sharing of such view because the overt support, for instance, could lead to advantages for the candidate. Also, the commonality achieved by group members is often about something (cf. for example, conformity literature, where the commonality is about some object) the exception being the convergence of emotions within a group, which does not necessary mean that the emotions are about the same referent. The authors highlighted that, in spite of showing that group members share a commonality of knowledge, beliefs, or attitudes (i.e., inner states), research fails to demonstrate that group members experience subjectively this sharing.

Finally, the same can be argued for the spread of *shared knowledge* within communities or societies. The difference with shared reality creation is that this latter requires an individual to subjectively experience the commonality about reality. Whereas for something to count as socially distributed knowledge, it must be, in fact, held in common among more than one individual (Echterhoff et al., 2009).

To sum up, the authors distinguish phenomena such as common ground, perspective taking or theory of mind and mirroring from shared reality by the fact that those processes, even if implying the individuation of a clear target referent, do not necessary involve the experience of a commonality of inner states. On the other hand, empathy as well as mood contagion and embodied synchrony require people to experience a commonality of inner states with others, but the commonality not always refers to a clear target. Finally, phenomena such as socially distributed knowledge and shared cognition, requiring a commonality of inner states about a target referent, do not necessarily demand people to subjectively experiencing such a commonality, which can be present regardless of the subjective experience. Contrary to this, commonality in shared reality can even fail to be objective, but should be experienced by the individual, who shares an inner state about something in common with others (Echterhoff et al., 2009; Echterhoff & Higgins, 2011).

2.3 Shared Reality Creation trough communication: the saying-is-believing phenomenon

As pointed out, communication has been considered the major route for exploring the establishment of shared reality. Indeed, people within communication settings provide one another with verification of experiences, this process creates meaningful realities (e.g. attitudes), which are internalized and simultaneously strengthen interpersonal bonds (Bratanova, 2008). To this matter, Echterhoff and collegues (2008, 2009) argued that in all communication studies demonstrating the saying-is-believing effect (cf. section 1.3.2.1) the conditions involving a shared reality explanation are present. By contrast, if one or more of the defining conditions of shared realty are not met, people tuning to the audience while communicating, do not finally integrate the other's perspective in their own because they do not actually experience shared reality. Expressed differently, communication shapes memory and thereby knowledge to the extent that people are motivated to create a shared reality with others through the communication activity with a partner (Echterhoff et al., 2008; Echterhoff et al., 2009; Echterhoff & Higgins, 2011).

2.3.1 The robustness of the saying-is-believing effect

As a reminder, the saying-is-believing effect explained in our first chapter (1.3.2.1), refers to the influence of an audience's attitude on message production and on the subsequent communicators' own memory about the message. In studies applying this

paradigm, participants are told that they have to describe the target person to the audience, who already knows the target and who has already developed a specific impression about him/her, without mentioning the target's name. Participants are also told that the audience's task would be to identify the target referent of their message among several descriptions of other targets being part of the project. Thus, participants formulate message about an ambiguously described target for an audience who either likes or dislikes the target. It typically appears that participants not only distort the message in the direction of the audience's attitude (i.e., audience tuning) but, moreover, the communicators' own memory is biased and their impression of the target distorted in the direction consistent with their previous message (i.e., saying-is-believing).

A vast amount of empirical studies has confirmed the robustness of the saying-is-believing effect (e.g., McCann, Higgins & Fondacaro, 1991; Sedikides, 1990; Todorov, 2002; for reviews, see Chiu et al., 1998; Higgins, 1992; 1999; McCann & Higgins, 1992; Echterhoff et al., 2008; 2009, Echterhoff & Higgins, 2011).

To sum up, the effect has been demonstrated to be independent of the kind of adopted stimulus material: video-filmed behaviours have been used instead of written passages (Hellmann, Echterhoff, Kopietz, Niemeier, & Memon, 2011; Kopietz et al., 2009) and of the delay amount between message and recall production (from ten minutes to several weeks) as well as of the audience size (one-person versus three persons audience: Higgins et al., 2007). It has been also replicated when participants are made aware of the audience's knowledge (rather than attitude) about a topic (Higgins, McCann & Fondacaro, 1982) and using small groups rather than a one-person target (Hausmann, Levine & Higgins, 2008; Stukas, Bratanova, Peters, Kashima & Beatson, 2009) as well as within an intergroup context (e.g., Echterhoff, Higgins and Groll, 2005; 2008; Echterhoff, Lang et al., 2009; Kopietz et al., 2009). Last but not least, the paradigm has been extended to different domains (i.e., eyewitness memory: Kopietz et al., 2009; personnel assessment in an organizational context: Echterhoff, Lang et al., 2009). Finally, as previously mentioned, the effect has been found to occur regardless of the moment of awareness of the audience's attitude (i.e., before or after encoding the input information: Kopietz et al., 2010) and has been extended to behavioural intentions towards the target of the communication rather than just to impression and memory (Stukas et al., 2009). Therefore, these evidences corroborate the idea that people

deal with information about a target in a distinct way when they are embedded in a communication context (cf. chapter I).

2.3.2 Saying-is-believing accounts for three conditions of shared reality

Echterhoff and collegues argued that the memory effect (i.e., the achievement of shared reality) fails when one of the four conditions defining shared reality lacks to be sufficiently satisfied. Here, we will mention saying-is-believing accounts for the three conditions described earlier, whereas exploring the saying-is-believing demonstrations of the motivational processes underlying shared reality will be left for the next section, as it is more closely relevant to the purpose of our studies.

First, it has been claimed that shared reality requires a commonality between the communicator's and the audience's inner states and not just between their externally observable behaviours. A good test for this assumption is provided by studies in which tuning was observed but did not trigger a memory bias (e.g., Echterhoff et al., 2005; 2008; Echterhoff, Lang et al., 2009; Kopietz et al., 2010). For instance, in their first experiment Echterhoff and collegues (2005) found that, although tuning to their audience, participants who received a failure (versus positive) feedback about the audience's successful identification of the target did not actually bias their memory in an audience-congruent way. Thus, the audience tuning in those studies corresponds to an observable commonality between the interlocutors, which does not necessarily correspond to an experienced commonality of inner states.

As for the second characteristic, Echterhoff and colleagues (2009) claimed that communicators under motives others than shared reality creation, may tune to their audience's attitude about the target description without really tuning their inner states about the same target referent. For instance, in studies where participants exaggerated their description to entertain the audience (Echterhoff et al., 2008, Experiment 2a & 2b), tuning did not trigger a saying-is-believing effect. It can be argued that, although the target person was the message topic, the referent of the communicator's message was a caricature rather than the target person. Indeed, communicators did not perceive their own message as valid and failed to create shared reality in conditions lacking shared aboutness (i.e., a second feature of the shared reality concept). Please note that our first two studies (cf. chapter III) provide important insights on the role of aboutness in shared reality creation.

Finally, the third above-mentioned defining characteristic of shared reality corresponds to the subjective experience of a successful connection with others. Accounts for this criterion come from studies where participants received feedback about either the audiences' failure or success in their task (i.e., recognizing the target referent of the message). Such studies (Echterhoff et al., 2005, Experiments 1 & 3; Hausmann et al., 2008) testify that the audience's feedback functions as a validation of the communicated message. Indeed, the saying-is-believing effect just occurred in condition of successful feedback, implying that communicators experienced a real connection of inner states.

We are now turning to a fourth condition of shared reality creation, which focuses on the motivational processes driving the shared reality goal pursued in communication and responsible for the occurrence of the saying-is- believing effect.

2.4 The Motivational Underpinnings of Shared Reality

Highlighting a fourth defining feature of shared reality, the authors posit as follows: "shared reality as a product can not be divorced from the processes by which it is attained, in particular, from the motives that drive the achievement of common inner states" (Echterhoff et al., 2009, p. 449, see also Echterhoff & Higgins, 2011). Prominently present in classical psychology literature as well as in contemporary social psychology, two core human motives were considered in the theory as particularly useful in exemplifying the process driving shared reality creation, that is, epistemic and relational motives. We will first explore early steps in identifying those one as core human motives underpinning social interaction, to later explore how, within the saying-is-believing literature, they provide support to the current shared reality concept.

2.4.1. Epistemic and Relational Motives in Classic Psychology

If we consider epistemic and relational concerns within classical psychology, two tendencies can be traced: On the one hand, Jamesian social behaviorism tradition conceived epistemics as the primary consequence of social interaction whereas, on the other hand, the Psychoanalytic tradition individuated the adaptive outcome of social interaction in social connectedness (Hardin & Conley, 2001). Both of these conceptions emphasized the interdependence of social and cognitive activity. Because Hardin and Higgins (1996) recognized in social behaviorism the roots of their shared reality formulation, we have

previously illustrated how the social-cognitive synthesis is already anticipated in this tradition through Mead's (1982) postulate (cf. 2.1). As for the classical psychoanalytic view, connectedness is conceived as the essential human motivation achieved through social identification, which is the attempt to understand others, for example, by taking their perspective. Thus, highlighting social identification processes, Freud but also his students (e.g. Erikson 1963; Bowlby, 1969) focused on the social character of individual cognition. Hardin and Conley (2001) translated the tendency of these two relevant traditions of psychology, which both converge on a similar social-cognitive synthesis, into the focus on respectively the epistemic and the relational functions of shared reality.

Put otherwise, and in ordinary words, we have already established that shared reality achieved through communication impacts on cognition, that is, communication effects on memory are verified to the extent that communicators share reality with the audience (i.e., the primacy of social interaction in cognition). To this matter, early classical psychology streams already pointed out the epistemic function on the one hand, and the relational function on the other hand, met through social sharing. This anticipates the fourth feature of the actual formulation of shared reality (Echterhoff et al., 2009, Echterhoff & Higgins, 2011).

2.4.2 Epistemic and relational motives in social influence theory

The two motivations highlighted in classical psychology survived in early social psychology research (cf. also section 1.2.2.1) but theorists conceived the processes as competing and binary (Hardin & Conley, 2001). For example, the assumption was made that the extent to which people are resistant to social influence is indicative of cognitive integrity (see e.g., Latane & Darley, 1970). Nevertheless, although it opposed the individual cognition to irrational external social forces, this line of research progressivey accorded increasing importance to social connectedness (Hardin & Conley, 2001).

Within social influence theory, we already pointed out that Sherif's (1936) work, demonstrating the role of others in the construction of coherent understanding of ambiguous sensation, recognized an epistemic function of social interaction. Also, social understanding was seen as serving regulatory functions (Sherif, 1936, Festinger 1954). In the same vein, Asch recognized not only that social understanding was predicated on shared experience but also that shared cognition played a role in regulating relationships (Hardin & Conley, 2001). Thus, the social regulation function, lately highlighted in the early formulation

of shared reality theory (c.f., Hardin & Higgins, 1996) and supported with evidence in early social psychology, seems to corresponds to what Hardin and Conley (2001) call the relational motive, where sharing is seen as an expression of people's need to maintain relationships (cf. Asch, 1951).

The epistemic and relational function of social consensus were also supported by later studies and Hardin and Conley (2001) pointed out how the observation of the product of such needs drove a theoretical integration of them, for example in Festingers' (1954) social comparison theory. As noticed through his early theoretical formulation of informal social communication (1950, cf. section 1.2.2.2), people gain subjective validity by agreeing with others. With his social comparison theory, Festinger (1954) developed a new aspect by appraising this as an indirect process: what drives conformity is the motivation to make social comparisons with others rather than just to establish what is valid (see Turner, 1991). But, similar others are in a better position for validating an opinion as correct. Thus, as the epistemic goal is facilitated by social comparison with similar others, people will try to reduce discrepancy within a group, thereby increasing uniformity. That is, social bonds serve an epistemic need thanks to the use of social standards in understanding (Hardin and Conley, 2001). In other words, to the extent that uncertainty and ambiguity, arousing the epistemic need, create social dependence to others, the epistemic and relational motive driving social sharing can be integrated.

The dual process formulation we illustrated in our first chapter is also relevant to this analysis. An easy parallel can be made between the concept of informational influence driving conformity (see Deutsch & Gerard, 1995) and the epistemic motive driving shared reality, as people under informational influence conform to gain certainty and understand ambiguous situations. Moreover, to the extent that people adopt the norm and conform to gain liking or acceptance of relevant others (i.e., the normative group), normative influence can be conceived as a result of relational motives driving sharing. Two aspects seem to differ between those formulations and the present conceptualization of those motives within the shared reality theory.

First, we have already pointed out how informational influence is likely to predict private acceptance of beliefs and normative influence predicts public compliance, which implies sharing (i.e., in the sense of conformity) but does not imply acceptance (cf. section 1.2.2). Instead, the epistemic and relational forces conceived in shared reality formulation

both drive the individual to private acceptance, as he/she ends up integrating the other's perspective, which is subjectively experienced as shared (Echterhoff et al., 2009). Nevertheless, this first difference is overcome through other formulations within social influence literature. For instance, we explained how Kelman's (1958) compliance and identification processes could be seen as the two facets of normative influence, where identification implies private acceptance since it is based on attraction to others rather than to others' power. Thus, this furnishes us with an example of informative influence as also really impacting the individual's cognition because of mere relational motives.

A second difference can be highlighted: social influence theory (at least with the early formulations) helps to consider the two motivational forces as driving the individual through a process of attitude change, which corresponds to expressing conformity *because of the pressure of external influence* forces. In shared reality theorization, the two motivational forces drive the individual *in an active effort of co-construction* of shared reality with others. The individual's appropriation of a shared reality (which implies attitude change) takes place only to the extent that there is a real internal motivation of social sharing with others, rather than a response to external factors. The illustration of the empirical evidence regarding the processes through which the two motives drive shared reality will clarify such distinction (cf. 2.3.3, this chapter).

Finally, an important theoretical question arising from those formulations is the extent to which the relational and epistemic motivation can co-occur or operate separately. Already Turner (1991) wondered if the informational and normative dual process could be reduced as one single process and criticized previous research data for failing to distinguish the two influence processes while assuming such a distinction. For instance, he pointed out the debate between social comparison theories focusing on positive self-presentation concerns (i.e., normative influence) and theories about persuasion and exchange of information. Therefore, Turner's effort corresponded to an attempt of integration. He claimed that both informational and normative influence imply the dependence of the individual to others and therefore can be combined as aspects of a wider conceptualization, where social interdependence is the basic process driving social interactions (pp. 38-39). Without neglecting to also include Moscovici's (1976) theorization within the attempts to reduce the dual model into a one-process dependence formulation, he argued that 1) informational influence is socially mediated and that 2) norms about values, preferences and

facts are informative about appropriate and corrects beliefs and, as a consequence, that 3) the individual and society are interdependent at the level of cognitions and overt behaviors (Tuner, 1991). We will later discuss how shared reality theory seems to pursue the effort of integration of those motives which were early conceived within a dichotomy (cf. Introduction, Part II).

2.4.3 Epistemic and Relational Motives Driving Shared Reality: Empirical Evidence

2.4.3.1 Epistemic Motives

We have pointed out that the need for uncertainty reduction has already been conceived, in earlier social psychology literature, as responsible for the individual's search for social sharing (e.g. Asch, 1951; Festinger, 1950; Sherif, 1936; Hardin & Higgins, 1996, Schaller, 2001). Indeed, people confronted to experiences that are ambiguous or difficult to understand, need to reduce the feeling of "uncertainty" aroused by such a confrontation and therefore seek the social reality provided by others (e.g., an appropriate reference group: Festinger, 1950). Sharing their own opinions with others' points of view allows people to reach a consensual and less uncertain interpretation of the world (Hardin & Higgins, 1996) and establish what is real (Higgins, 2011). This in turn increases a sense of predictability (Hardin & Higgins, 1996) and a sense of efficacy in dealing with the environment (Echterhoff et al., 2009; Echterhoff & Higgins, 2011).

As easily arguable in line with the previously reviewed literature, the strength of epistemic motives depends on the uncertainty aroused by the confrontation with ambiguous situations: the more ambiguous a target referent, the higher the need for uncertainty reduction about this target. To this matter, we remind Festinger's (1950) hypothesis that people are dependent on others agreement if physical reality does not provide a test for the situation. This hypothesis implies that conformity increases to the extent that the situation is ambiguous and difficult. As Turner (1991) noticed, the comparison between his and Asch's results account for the idea that conformity increases with increasing ambiguity (cf. section 1.2.2.1).

Schachter's (1959) study, among others, supported this idea by showing that people confronted with ambiguous situations, where intense emotions created uncertainty about the behavior to adopt, were more likely to affiliate to others in the same situation (i.e.,

similar others) to lower uncertainty. Indeed, participants were told that the experiment was about effects of electric shocks. It was then explained that they were going to receive a series of shocks described either as painful and possibly dangerous or as enjoyable. In the former condition (where fear and uncertainty were higher) participants decided to wait for the beginning of the experiment with other subjects (rather than alone) to lower uncertainty and gain information about the appropriate behavior to adopt (see also Turner, 1991). Also, Latané and Darley's (1970) experiments on bystanders added evidence to the idea that people interpret ambiguous situation by comparison to others who function as source of validation. In those experiments, people were shown to be less likely to react to emergency situation (i.e., a victim under distress) when being in presence of others who did not react to the situation (e.g. Latané & Darley, 1968). The importance of a validating source of information is particularly highlighted by one classical study where participants were placed in a room to fill out a questionnaire either alone, with two other participants, or with two confederates who pretended to be normal participants. Suddenly, smoke began to fill the room. The 75 per cent of participants who were alone in the room called the experimenters, whereas just the 38 per cent of participants in presence of two other persons reported the smoke. In the third condition, where the two confederates ignored the smoke, only the 10 per cent of participants reported the smoke (Latané & Darley, 1968). Thus, in presence of others participants failed to validate their opinion about the emergency of the situation.

2.4.3.2 Epistemic motives and saying-is-believing: the present state of affairs

We have already explained one of the defining features of the new shared reality concept, that is *referentiality* (cf section 2.2.2). Importantly, the authors posit that to the extent that shared reality concerns a target referent, the creation of shared reality should always serve epistemic needs to some extent (Echterhoff et al., 2009; Echterhoff & Higgins, 2011).

In all the experimental saying-is-believing situations, some of which are reviewed here, participants are confronted with ambiguous information about a target: this ambiguity ostensibly raises the need for uncertainty reduction. In chapter three we will explore how our research empirically tests such a claim.

Importantly, such a need is referred as the *epistemic motive* that drives the creation of shared reality within the saying-is-believing paradigm. Given that the epistemic need

represents a core human motive to share reality, *epistemic trust* towards others plays a fundamental role in the attainment of one shared reality goal (i.e., to render representations reliable, valid and objective). This claim was supported by several studies.

In a first experiment Echterhoff and colleagues (2005), found that communicators spontaneously tune their message to suit the audience's knowledge and evaluations about the message topic and this audience tuning had significant effects on communicators' own subsequent knowledge and evaluation of the message topic. This happened when participants were provided with feedback of success (versus failure) of the audience task of recognizing the message target referent (Experiment 1). In the second experiment communicators tuning to an in-group audience exhibited the bias, whereas communicators tuning to an out-group audience did not (this difference was mediated by communicator's *trust* on the audience's ability to form judgments about other people). A third experiment combined the audience's group membership and the feedback manipulations: Audience tuning was found for all participants and independently of the audience's group membership, nevertheless the audience-congruent bias did not occur after a failure feedback. When the feedback was positive (i.e., success of the audience task) the saying-is-believing effect was expressed by participants communicating with both an in-group and an out-group audience. This latter result indicated that the success feedback, enhancing participants' trust in their audience, validated their tuned view of the target person. A mediation analysis confirmed the key role played by audience trust in mediating the recall bias. Taken together these results suggested that a shared reality requires that people experience to have successfully connected to someone else's inner state. Moreover, it can be seen as supporting the idea that audience tuning effects on memory could not be explained by merely considering the *message production stage* (cf. section 1.3.2.1) as not all participants effectively tuning to their audience later expressed the bias.

To this regard, a study by Higgins and colleagues (2007) confirmed the saying-is-believing effect after actual message production (versus prevention from producing the message) when the audience was a single individual, replicating the original findings of Higgins and Rholes (1978, i.e., no memory effect without message production). By contrast, when the audience was composed of three addressees with the same attitude, the recall bias was found *without* message production (see also Hausmann et al., 2008). Participants also showed more epistemic trust in the group audience than in the individual one. Thus, when

epistemic trust in others is sufficiently high, knowledge of their inner states can create the shared reality without the need for message tuning (see Echterhoff et al., 2009). In such a case it is adequate to refer to the created shared reality through the label of "audience-congruent memory bias" rather than "saying-is-believing" effect, because of the prevention of message production impeding tuning[5].

Echterhoff and collegues (2008) investigated the effects of a shared reality goal to pursue in communication as opposed to other communication goals such as being polite toward a stigmatized-group audience (Experiment 1), obtaining incentives (Experiments 2a & 2b), providing entertainment (Experiment 2b), or complying with a blatant demand of incorporating the audience's attitude in the message (Experiment 3, see also Todorov 2002). The saying-is-believing effect was found to the extent that audience tuning served the creation of a shared reality but not when it served alternative non-shared reality goals (cf. also section 2.3.2). In those cases, despite tuning (Experiments 2a, 2b & 3), the effect on memory was not present. In addition Echterhoff and colleagues (2008) conducted a meta-analytic overview of their results in different experiments. They found that these effects were mediated by the *epistemic trust* in the audience's ability to judge others as well as in their own audience-congruent view, that is, the view they expressed in the communicated message (Experiments 2b & 3). Whereas pure cognitive processes such as the rehearsal or accurate retrieval of the original input information, the ability to discriminate between the original and the message information, as well as communicator's mood or own perception of the bias did not mediate the effect.

A replication of the shared reality goal (vs. non shared reality goal) effect was obtained by Kopietz and colleagues (2010, Experiment 1). Not only participants motivated to share reality with the audience exhibited the saying-is-believing effect, but they also expressed higher certainty about their own view of the target after tuning, in comparison with non-shared reality goal participants (i.e., required to comply with a blatant demand).

[5] Please note that in the present dissertation we use the expression "audience-congruent memory bias" indistinctly for cases where a recall bias is found after a tuned message or a failure of tuning as well as after a non-produced message. This is correct to the extent that the recall bias is verified and congruent with the audience. But, when the recall bias is obtained without tuning we never use the expression "saying-is-believing", as it specifically refers to the mediating role of the tuned message.

The typical meditational effect of participants' epistemic trust in the audience was also replicated.

To sum up, in revealing the fundamental role played by communicators' trust in their own view of the target developed through communication and/or in their audience's ability to judge other people, all these studies account for the fundamental role played by trustworthiness in reducing the feeling of uncertainty experienced by participants. This precisely corroborated the idea that shared reality creation serves epistemic motives.

Importantly, the epistemic account of audience-tuning effects on memory (i.e., shared reality achievement) has also been directly examined in a study by Kopietz and colleagues (2010). In their Experiment 2, participants saw pictures of characters depicted in ambiguous social interaction settings and were asked to form an impression of the represented characters. They then received (bogus) feedback that their performance in the impression formation task was either high (validated by other observers) or low (not validated by other observers). This feedback served as a manipulation of participants' epistemic confidence in their impression formation, and, therefore, of their epistemic uncertainty. It was found that only high-epistemic uncertainty participants exhibited the effect on memory, which was mediated by their communicated message.

In conclusion, empirical research confirms that a saying-is-believing effect is found to the extent that people are epistemically motivated to create a shared reality with the audience who is considered as sufficiently trustworthy, thereby satisfying communicators' need for uncertainty reduction. In the typical saying-is-believing paradigm three types of epistemic input allow communicators to attain shared reality. These inputs, according to Kopietz and colleagues (2010) are 1) the communicators' own evaluation of the stimulus information after studying the original material; 2) the audience's evaluation of the target and 3) the evaluation conveyed in their own messages to the audience. The achievement of a confident judgment is assumed to depend on the contribution of these three inputs.

The studies we have now reviewed are largely informative about conditions where participants' confidence on the epistemic input 2) and 3) (i.e., the audience evaluation and the tuned message evaluation) are crucial for shared reality creation. As noted, only one study (Kopietz et al., 2010, Experiment 2) directly examined effects of the first input (i.e., the communicators evaluation of the target material) on the achievement of shared reality.

As we will later illustrate in detail, the first empirical research proposed in the present dissertation will also join this effort by informing about a source of the epistemic input 1) which is different from the communicators' confidence in their own impression formation explored in Kopietz and colleagues' study (2010, cf. chapter III).

2.4.3.3 Relational motives

Sections 2.4.1 and 2.4.2 have illustrated how social sharing is conceived to respond to the need for connectedness in earlier psychology literature (e.g. Mead, 1934; 1982; see Hardin & Higgins, 1996; Hardin & Conley, 2001). Festinger (1954) already posited that similar others are in a better position for validating an opinion as correct. Also, normative influence implies that conformity is motivated by the desire to achieve public identity. If in most cases this leads to pubic compliance rather than private acceptance, we argued that this is not always the case (cf. Kelman's distinction between acceptance and internalization, section 2.4.2).

Also, the impression management literature provide research demonstrating that seeking social approval and presenting (positively) one's own self to others imply effective cognitive change (e.g. Baumaister, 1982; Tedeschi, Schlenker & Bonoma, 1971; Tetlock & Manstead, 1985, see also Turner 1991).

It has been argued that the *relational motive* inducing people to affiliate and feel connected to others can be satisfied by the achievement of shared reality with others (e.g. Hardin & Higgins, 1996; Hardin & Conley, 2001). The connectedness experienced through social sharing has several consequences. It has a positive impact on people's well being (e.g., Schachter, 1959; Diener & Seligman, 2002), on their feeling of relationship satisfaction (Murray, Holmes & Griffin, 1996) and serves other goals such as identifying with a positive valued group and protecting one's own self-identity (Turner, 1991) or self-esteem (e.g., Baumeister & Leary, 1995, see Echterhoff et al., 2008).

Thus, to the extent that relationships are established and maintained through shared reality creation (Hardin & Conley, 2001), when people are motivated to get along and affiliate with others, shared reality while communicating with those others should be particularly likely (Higgins, 1992; Hardin & Higgins, 1996). Also, the motivation to achieve shared reality should be high when people experience social anxiety or relationship threat (Hardin & Conley, 2001).

2.4.3.4 Relational motives and saying-is-believing: the present state of affairs

But, who are the significant others who trigger high relational motivation in communication? In other words, we have argued that the desirability of particular others plays a fundamental role in the attainment of one shared reality goal (i.e., to establish and maintain social relationship). As a consequence, the empirical test for the relational motivation driving shared reality could focus on the characteristics of the audience in terms of desirability as relational partner.

In some of the experiments considered above (Echterhoff et al., 2005, Experiment 2; Echterhoff et al., 2008, Experiment 1) participants were confronted with situations furnishing suitable relationship partners (e.g., ingroup versus outgroup members). As predicted by shared reality theory, although participants tuned to their audience independently of group membership, they congruently biased their memory when the audience was an ingroup but not an outgroup member (with the only exception of Echterhoff et al., 2005, Experiment 3, described in section. 2.4.3.2). In the same vein, and adapting the saying-is-believing paradigm to the eyewitness memory context, Kopietz and colleagues (2009), let participants communicate either to a (generic) fellow student or to a law student about a bar brawl they had witnessed. Despite tuning to their audience, participants' memory and judgments about the incident were more biased when they had communicated to the audience with a similar versus dissimilar academic background.

Along similar lines, a study of Echterhoff, Lang, and colleagues (2009) investigated the role of the audience's social status in the saying-is-believing process. The experiment took place in an organizational context in which participants were asked to communicate about the working behavior of an employee to either an equal-status or a higher-status audience. The authors further assessed the participants' *relational trust* in the audience, which is, "the sense of a meaningful connection and affiliation" (p. 154) with the audience and participants' epistemic trust (i.e. trust in the audience's ability to form reliable judgments about others). Results indicated that the audience tuning effect on memory was found only in the equal-status condition but not in the high-status audience condition. Moreover, participants displayed higher levels of epistemic but also relational trust in their low-status audience rather than in the high-status audience. As these results could be

explained through the stronger level of epistemic trust, but also to higher levels of relational motives expressed towards the audience, this study is taken as an important demonstration of the relational motivation driving shared reality.

In the studies just reviewed and involving a group membership manipulation, ingroup audiences could be seen as suitable relational partners. In those experiments (Echterhoff et al., 2005; 2008; Kopietz et al., 2009) measures were taken about the epistemic trust in the audience but not about the relational trust. Thus, it remains unclear the specific contribution of a relational motive driving the saying-is-believing effect in those cases (cf. chapters 4 & 5).

Early studies using the paradigm (Higgins & McCann, 1984; McCann & Hancock, 1983) relied on observed variables (i.e., authoritarianism and self-monitoring) assumed to affect the affiliative motivation of participants towards their audience. Whereas authoritarianism corresponds to a personality variable mainly assessing people's conventionalism and authoritarian submission (cf. Adorno, Frenkel-Brunswick, Levinson & Sanford, 1950), self-monitoring is indicative of people's tendency to control themselves in order to display appropriate behaviors (cf. Snyder, 1979). Higgins and McCann (1984) showed that, when communicating to a higher status audience, high authoritarians (contrary to low authoritarians) displayed *super-tuning* and later audience-congruent memory and impression about the target. Although this effect could depend on relational motivation towards the audience, the possible role played by epistemic motives should not be downplayed. Indeed, this latter motive could have plausibly triggered high authoritarians' integration of the high-status audience's perspective in their own. McCann and Hancock (1983) found that high self-monitors tuned to their audience and expressed audience-congruent recall and impressions whereas low self-monitors did not. The authors claimed that high self-monitoring participants were motivated to behave appropriately in the situation, thereby tuning to their audience. But, as for the above-mentioned studies, epistemic concerns could also have played a role here (cf. chapter V, this work).

Thus, with the exception of the study by Echterhoff, Lang and colleagues (2009), all the other empirical evidence for the motivational processes triggering the saying-is-believing effect focus on the epistemic dimension. Nevertheless, demonstration for the key role played by the affiliative motivation in social sharing can be found in studies using procedures close to the saying-is-believing paradigm (Sinclair, Huntsinger, Skorinko, & Hardin, 2005;

Sinclair, Lowery, Hardin, & Colangelo, 2005; Lowery, Hardin & Sinclair, 2001; cf. chapter III & IV). These authors demonstrated that beliefs and implicit attitudes of people motivated to affiliate with others, spontaneously adjust to the perceived others' attitudes and beliefs through explicit and automatic response (for more details of these studies see chapter IV, this work). Our empirical research aims also to contribute, with innovative ways of applying the saying-is-believing paradigm, to the understanding and test of relational motives driving shared reality (cf. chapters IV & V).

2.5 Conclusions

Summarizing all the above considerations, the influence of communication on subsequent cognition is now well established (e.g., Chiu et al., 1998; Echterhoff & Higgins, 2011) and the saying-is-believing effect represents one of such examples. A great amount of studies have confirmed the robustness of the effect (see e.g. Higgins, 1999; Echterhoff et al., 2008; 2009), which serves the shared reality theory by furnishing a straightforward pathway for testing its fundamental claims. Indeed, saying-is-believing studies let us consider conditions under which a shared reality is successfully achieved (Ehcterhoff et al., 2009). The theory posits four underlying conditions of achievement, which portray shared reality as being 1) the subjective experience of 2) a commonality between people's inner states 3) about some aspects of the word, which is 4) properly motivated (i.e., by relational and epistemic needs). The absence of one of the features identified by the theorists as leading to a shared reality communication goal can result in the absence of the well-established saying-is-believing effect, that is, in the failure of shared reality achievement.

After highlighting those claims and differentiating the concept from other close theoretical formulations, we have deepened the analysis of the two core motives driving shared reality. We have pointed out that classical psychology also emphasized the interdependence of social and cognitive activity (Hardin & Conley, 2001). Early social psychology has conceived relational and epistemic needs as parallel distinct processes in some cases, as well as integrated within a unique theory in other cases (cf. the social comparison theory). We have therefore explored the attempt of integrating the two motives as driving forces of social sharing within contemporary social psychology and precisely within the shared reality theory (Hardin & Higgins, 1996; Hardin & Conley, 2001), because of our interest on attitudes conceptualized as shared experiences of inner states about the

world. After reviewing evidence for this fourth feature of shared reality achievement (i.e., epistemic and relational motives underlie its achievement) by considering studies that focus either on one or both these motivational forces within the saying-is-believing literature, we will now consider issues that are still open on this matter. Foreshadowing how we formulated the questioning driving our empirical section to address some of the issues will be the next step of the present dissertation.

Part II

Empirical Evidence

The unexplored

Overview and rationale of the present Experiments

We have asserted that the saying-is-believing paradigm offers an unmissable opportunity to test the conditions leading people to achieve a successful connection with others' inner states about the world. One of those conditions calls for people to be appropriately motivated to share reality (Echterhoff et al., 2009, Echterhoff & Higgins, 2011). It has been argued that only a consideration of the underlying motives driving shared reality would prevent researchers from overlooking important underpinnings of the shared reality phenomenon, which cannot be only considered as the end product of the commonality between people's inner states (Echterhoff et al., 2009).

Relational and epistemic needs have been identified as driving forces of shared reality. They were treated as parallel distinct processes in the early literature but also integrated within a unified theory, as in the case of the shared reality theory.

In this respect we have mentioned Turner's (1991) effort to resolve the dichotomy postulated by the dual model in social influence theory (cf. section 2.4.2). To the extent that social norms convey information and that information is validated at least in part by its congruence with existing social values, this author conceived self-categorization theory as unifying the understanding of influence processes. The differentiation between informational and normative influence is solved by the idea that « the influence process is one where the normative position of people categorized as similar to self tends to be subjectively accepted as valid » (p. 171).

Likewise, Hogg and Smith (2007)'s conceptualization of attitudes as being « normative attributes of social groups and identities located in intergroup contexts » (p. 119; cf. also chapter I's introduction, this work) led them to argue that relational and

epistemic motives (as well as the need to achieve a positive and coherent self-concept) can all be satisfied by a single process of self-categorization and social identification.

Shared reality theory parallels these previous theoretical positions by supporting the idea of one process, that is, shared reality achievement, as responsible for the fulfillment of both these core human motives, among others (Echterhoff et al., 2009). To this matter, Bratanova (2008) specified that the operation of relational and epistemic motives driving shared reality is intertwined and that the tendency to separate them in research aims empirical clarity rather than a theoretical assertion, the relative forces of those motives being hard to disentangle.

Nevertheless, we argue that such a distinction is necessary and should be validated empirically. Indeed, despite following a simplicity criterion is crucial in scientific theorization (e.g., Turner, 1991) this purpose should not prevent the exhaustive understanding of complex phenomena.

For instance, when exactly do the motivations to know and to get along with others really drive the achievement of shared reality? What happens when the epistemic need is not sufficiently motivating people in communication situations? Is this very condition sufficient to prevent shared reality creation? Even if this was posited (Echterhoff et al., 2009), the empirical unequivocal evidence for this claim is not really established (cf. point 1, this section & chapter III). Also, when a sufficient epistemic need motivates people, to what extent does the lack of an additional relational motive drive the achievement of shared reality? (cf. point 2, this section & chapter IV). Finally, what happens in terms of shared reality achievement if people experience a conflict between these two motivational forces? In other words, is shared reality achieved when the communication partner fulfills one but falls short of satisfying the other motive? (cf. section II.1 & chapter IV). Our empirical research aims at answering, at least in part, these still open issues.

Thus, the important step made here coincides with the effort to disentangle those motives. By doing this, we are not claiming that they cannot operate together. Rather, we purport to explore their relative force in establishing to what extent an audience (which has been generally called «of significant others»: Hardin & Higgins, 1996 or «appropriate»: Echterhoff et al., 2009) could satisfy one, the other or both needs, and thereby become an appropriate shared reality partner. Individuating the audience's ideal characteristics to be

met for the shared reality achievement (as a matter of epistemic and relational satisfaction) will inform us also about the conditions to be met for strengthen relationships and for our seek of knowledge (cf. Hardin & Conley, 2001; cf. section 2.2.1.2). Indeed, answering these questions is not only a matter of theoretical speculation but has real practical implications for real life situations, as illustrated in the next paragraphs.

1. The epistemic need: Manipulating ambiguity within a sexual harassment context

Through the empirical evidence explored in section 2.4.3.2, we ascertain that previous saying-is-believing studies 1) assumed the ambiguous input material as being the source of epistemic uncertainty motivating participants to share reality with the audience for fulfilling their epistemic need arisen from such uncertainty, and 2) manipulated experimentally the epistemic need only in one study (Kopietz et al., 2010, Experiment 2). By doing this, the authors have focused for the first time on one epistemic input hitherto neglected in research that is, the communicators' own evaluation of the stimulus information contained in the original material[6]. Nevertheless, Kopietz and colleagues (2010) did this in respect of an internal source of uncertainty, that is, the communicators' confidence in their own impression formation. Our first empirical chapter presents two studies filling these gaps by applying the paradigm to a ubiquitous social situation with potentially distressing and harmful consequences (i.e., sexual harassment). Indeed, through these studies we tested for the first time the central postulate of shared-reality theory, which holds that the perceived ambiguity of input information about an event increases the motivation for tuning messages and evaluations to an audience. Ambiguity was manipulated by varying the availability of the outcome information within a sexual harassment context. This let us focus on an external (vs. internal) source of uncertainty. In Experiment 1, women read a testimony describing a supervisor's ambiguous behaviors that either did or did not end in sexual harassment. We predicted that only in the unknown-outcome condition, where uncertainty was supposed to be higher, participants would be motivated to achieve shared reality with the audience. Experiment 2 was designed to replicate the effect with explicit ambiguity information in a mixed-gender sample. The experiments had therefore the

[6] As previously explained, the two other epistemic inputs largely studied within the paradigm correspond to the audience's evaluation of the target and the communicator's evaluation after message production (cf. section 2.4.3.2).

purpose 1) to experimentally manipulate the ambiguity of the input material in the saying-is-believing paradigm, 2) to rely on a source of uncertainty that was external rather than internal as in Kopietz and colleagues' study and 3) to highlight the role of communication in judging an ubiquitous social situation characterized by antecedents behaviors that are often ambiguous and whose evaluation has important consequences for victims and supposed perpetrators.

2.The relational motivation: Interactions with strangers

Previous literature also never manipulated the relational motive *per se.* Only two saying-is-believing early studies manipulated observable individual variables, which were supposed to impact on participants' relational motive to connect with the audience (Higgins & McCann, 1984; McCann & Hancock, 1983). Still, epistemic and relational characteristics of the audience were confounded (cf. section 2.4.3.4). The fourth chapter of the current work presents one study filling this gap.

Indeed, this Experiment experimentally manipulates the relational need, while maintaining a sufficient level of epistemic motivation constant by applying the paradigm to everyday life situations: interactions with strangers. Thus, participants were asked to describe the ambiguous target to an unknown audience who had been previously evaluated as a desirable *versus* undesirable communication partner. Building on shared reality theory, we expected the achievement of shared reality to be most likely when communicators were highly motivated to get along with the audience (i.e., high communication desire condition). This Experiment contributes to understanding the relevance of relational motives in the saying-is-believing paradigm independently of the epistemic motivation. It also sheds light on important processes taking place when interacting for the first time with unknown audiences.

3. Relational and epistemic interplay: Audience's appropriateness and intergroup relations

The fourth and fifth experiments presented here applied the paradigm to an intergroup context and explored the role of the saying-is-believing effect in the dissemination of stereotypes. In doing this they also contribute to the understanding of the relative role played by the epistemic and relational motivation in driving shared reality.

Indeed, after extending the effect for Belgians communicating with an in-group audience about an out-group (rather than just in-group) target, we explored competing levels of epistemic and relational needs by using a specific audience who satisfies one motive but not the other: Participants communicated with a racist (vs. non-racist) in-group audience. We expected the racist audience to be unsuitable as a *relational partner* but to be perceived as *epistemically trustworthy* because holding culturally shared beliefs. We wondered if epistemic audience's characteristics might compensate for participants' low relational motivation and thus lead to shared reality achievement.

4. Conclusions

To sum up, our empirical part tries to question shared reality theory for examining the differential relevance of epistemic and relational motives driving the creation of shared reality with others. In addition to this effort, we also applied the saying-is-believing paradigm to novel contexts and were particularly attentive to the greater applicability and social relevance of the used setting in comparison with the previous studies. Indeed, the past literature adopted Experimental situations closely resembling the standard paradigm with only two exceptions (i.e., eyewitness memory and organizational context, cf. section 2.3.1). Extending the paradigm's external validity, our findings shed light on shared reality processes in previously unexplored social settings and foreshadow important real-life implications (as a function of the Experiment topic), which will be explicitly discussed in the respective chapter.