Interpersonal Society

Interpersonal Society:

Essays on Shared Beliefs, Trust, Mnemonic Oppression, Distributive Fairness, and Value Creation

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Preface

This report is a result of a research project carried out at the Department of Marketing and Strategy at the Stockholm School of Economics (SSE).

This volume is submitted as a doctor's thesis at SSE. The author has been entirely free to conduct and present his research in his own ways as an expression of his own ideas.

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Acknowledgements

Writing the present dissertation has been a lonelier affair than when I did it the first time, as my research topics this time were quite different from what the people around me are working on. Nonetheless, looking back, there are a remarkable number of colleagues and friends that have helped me in various ways.

My advisor Richard Wahlund has been a steady support. For several years he has been available with encouragement and coaching. Even though my research questions have been quite different from his, Richard has maintained a loyal, open and interested attitude, and engaged me in useful discussions and offered helpful advice at several stages of the research process.

I have been fortunate to work in the vicinity of two people in academia who take their leadership responsibility seriously. Richard is one; Anders Liljenberg is another. Anders has been an inspiration, both as a leader and as a careful mentor in leadership. Also, Anders explicitly encouraged me to finish my dissertation project and offered support by even taking on part of my responsibilities when it was needed. Balancing administration, teaching, and research was a distraction, so I am very grateful for the extended hand, Anders.

Indeed, as many know who have experienced the Russian adventure at SSE, it can be challenging to handle at times, and I am grateful to the many individuals, friends, in our St. Petersburg office, and Moscow, who make me and everyone else feel welcome. Olga, Tatiana, Igor, Anna, Irina Z, Alexey, Pavel, Seva K, Seva S, Evgeny, Katja, Elena L, Liza, Jane, Irina A, Irina B, Vika, Alexander, Julia, Grigory, Lyubov, Olga Le, Julia E, Irina A, Tatiana S, Elena A, Yana… (plus the stellar Stockholm and Småland group of Ciara, Mats, Katerina, Lars, Jörgen, Alena and Sergey). I am looking forward toward being able to spend more time in St. Petersburg again now that the intense end-game of the dissertation project is coming to an end.

My journey has been facilitated also by the knowledgeable and helpful people on my dissertation committee. Magnus Johannesson has been a steady force to rely on for feedback with the speed of light. His reassuring and precise observations from an economics viewpoint have been very helpful. Magnus and Richard have been paralleled by Linnda Caporael as the third member of the committee and the invisible Keyser Soze in this lineup. Although we had never met, Linnda agreed to serve on my committee after we had exchanged a few emails. When we have been in touch during the last couple of years, she has provided much needed expertise in not only evolutionary pro-

cesses, which I eventually pursued less than I had thought I would, but also in relativistic ontologies, social memories, real social cognition, and other things that I wish I had had more time to pursue in the dissertation but which in any case benefitted from Linnda's wise advice (which she provided at the end even in the face of her own book project's "drop dead" deadlines looming). Looking forward to seeing you one day, Linnda!

Because this is a dissertation in business administration, I benefitted greatly from my interactions with my business mentor: Henrik Glimstedt. Surely there is still much (all?) in the dissertation that he will disapprove of, but Henrik generously and confidently guided me on authoritative journeys to various business destinations. Thank you for your tough love and advice in business, as well for your careful attention to detail in feedback on excerpts of my text. (Henrik convinced me that I needed a single theme as an entry into the introductory chapter, so the reader may be grateful to him too.)

In this context I would also like to thank my long-time colleague, corridor neighbor, friend, and brother in arms, Patric Andersson, who is always available with well-intended, careful, and reliable advice, valuable feedback, and fun comments. May we have many more years together, Patric!

Many other helpful people in the corridor should be mentioned. To Emre Yildiz for friendly and contagiously enthusiastic and knowledgeable advice, assistance, and guidance in most matters including organization theory, but also for thoughtful feedback and fun discussions about anything including religion. Thanks to Göran Lindqvist for advice on a number of practical issues the value of which increased dramatically as they deadline drew closer. To Patric Regnér for quick and knowledgeable tips in the corridor. To Udo Zander for contacting Madan Pillutla, my dissertation discussant. For advice about book layout, I owe thanks to additional people in the corridor (Erik, Mattias and Emelie), as well as my esthetically inclined buddy Kristoffer and relatives (Maria, Claes Henrik, Carl Fredrik, and Charlotte). Among other people at SSE, I am grateful to Jan Eklöf for helpful talks about statistical analyses.

Outside of SSE, I have benefitted from Richard Swedberg's introduction to economic sociology and general encouragement. Jan Tullberg has shared his wide-ranging perspectives on matters including fairness, morality and ideology.

Additional friends in various disciplines inside and outside of academia have contributed in many and various ways. Markus Ejenäs provided early orientations in organization theory during epic taxi rides on Eastern adventures. Anna Dreber Almenberg has provided precise feedback and engaged

me in fun and stimulating lunch discussions. Torun Lindholm gracefully agreed to read a very rough version of the introductory chapter. Andreas Olsson and I have had many stimulating lunches on wide-ranging topics, and he has also provided precise feedback in relation to learning and ecology. To Kristoffer Strandqvist for his perennial readiness to provide reality checks and advice aimed at saving me from ill-fated mistakes. To Ludvig Beckman for his quick and knowledgeable guides to political science references, and patience with me despite my misguided pre-occupation with empirical questions.

You need people the most when you know the least about what you are doing. My cousin, John Mellkvist, has been a lighthouse of strength in book-cover esthetics. Although the process took place at the same time that he established a new business (SWE Design), he designed the cover of the book and endured a high number of my ignorant and doubtlessly annoying "corrections" of earlier drafts.

My father, too, has been very helpful toward the end of the thesis project. Besides his constant willingness to handle emergencies (and only occasionally create them), he is nowadays weighing in not only on layout and photography but has even helped me to proofread reference lists. Mom is a constant support of me and my research, and has saved me on a number of occasions toward the end by offering last minute care of her grand-children. Thanks also to Torborg and Torbjörn for your enthusiastic caretaking.

Sonia and Malkolm, my shockingly grownup darlings, you have had to endure many evenings lately that I have not been at home; now that will change, and I can't wait to enjoy the summer with you.

My companion in this, as in all things, is my good and beloved Maria. I am very grateful that you provided room for me to focus on the dissertation when I needed it the most. Although it is not much in the way of compensation, the work is dedicated to you and Sonia and Malkolm.

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1. Overview

Achieving a society, a community or otherwise a long-term social organization is a remarkable feat. Natural selection pressures would seem to put organisms in competition with each other. But instead of killing each other at first sight we often achieve cooperative or coordinative arrangements of superior value to the collective. We can achieve such value in several ways. Arguably, a foundation for the achievements is various social orders, which people nowadays often take for granted; but we can nonetheless see how these orders vary even within post-industrialized countries like Sweden and the U.S. For example, how do we treat people from different groups, e.g., men and women? What are the standards for (fair) distribution of resources? How do we achieve social coordination when it is risky, and how might communication and the establishment of shared representations facilitate such arrangements? Finally, liberating ourselves from external orders, to what extent might individual strategic skill play a role for collective value creation and distribution? These are questions considered in the present thesis.

While four separate, empirical papers narrowly contribute to specific research questions and associated discourses, the present introductory essay attempts to put these empirical investigations in a broader context of some important problems in the social sciences.[1] Because the empirical papers address disparate issues, the introductory chapter does not provide in-depth coverage of a single theme. The main emphasis is on the construction of shared beliefs, because it may serve as a platform from which I provide outlines of some major theoretical (and practical) issues that are related to the four empirical investigations. As the introductory chapter was written after the empirical papers, it allowed me to take a different and less individual-oriented perspective on the empirical investigations. This shift in perspective might appeal to an audience in organizational behavior. If the text succeeds at bringing together discourses which are usually distinct, then that is a bonus.

Disposition. In this introductory essay, I begin by briefly situating the dissertation topics in some practical business contexts, including the topic of business studies itself. I then proceed to a loosely organized theoretical introduction in which the specific questions of the four Studies are positioned. The first topic in the thesis title, shared beliefs, refers to the present introductory essay, although it is relevant also for the empirical papers. The theoretical review re-

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[1] Sections that directly involve either of the empirical investigations have been put in bold.

spects evolutionary and ecological perspectives but focuses on social construction processes (leading to shared beliefs) and their implications for the four paper themes of interpersonal trust and coordination, negative discrimination in the form of mnemonic oppression, fairness perceptions, and social interdependence skills leading to value creation. Along the way, I present a possible mechanism for the construction of shared representations (shared beliefs). I also present economic games and other simple designed situations which were used in the four empirical papers, situations which I further analyze briefly in terms of social organization and contextual cues. At the end of the review I de-emphasize structures and focus on agency, though still in relation to social structures and organization. Following this theoretical review, I state the purposes of the Papers, my general research approach and methods, and the empirical results of the papers. Finally, I discuss theoretical, practical, and methodological implications of the papers, including future studies, and I hint at some wider evolutionary and development contexts for the empirical topics.

2. Business Contexts

The present thesis involves trust, standards of fairness, value creation and distribution in negotiations, and negative discrimination. If business research is science, its value cannot be dictated by the extent to which it promises immediate recipes for pressing current corporate concerns. Nonetheless, to make the aforementioned topics more concrete, let us consider an example. Suppose that you are on vacation and happen upon a shop where you find a beautiful carpet that you would like to acquire. Your purchasing behavior in a situation like this might be determined by many things. For example:

- Your purchasing behavior in the carpet situation might be affected by whether you recognize the strategic nature of the situation; for example, the impact it might have on the vendor's attitude toward you to learn that you are going to leave the country tomorrow, as opposed to in six months. Article 4 considers the degree to which people understand the strategic structure of the situation or domain that they are in, and what impact their understanding might have on their negotiation performance.
- You might learn that the previous customer obtained the carpet for half the price that you are asked to pay. Is that fair? Is your perception of fairness affected if you learn that this previous customer has five children

who will sleep on the carpet? Generally, various distributions of benefits or burdens are perceived to be more or less fair. In article 3, we examine cultural and economic determinants of how fair people find various allocation methods of a fixed sum of resources, which are provided or removed.

- Will the conversation with the carpet dealer proceed differently if you are a woman versus a man? Even if the dealer is polite in both cases, will your arguments take hold to different extents in the two cases? Article 2 examines whether men might have different (more) impact than do women on the memories that people bring with them from communication with men and women, and whether people's preferences are similarly affected.

- During the bargaining process in the carpet situation, you and the sales person are likely to arrive or not to arrive at some shared understandings, e.g., of legitimate arguments and eventually perhaps of an acceptable price for the carpet. Article 1 considers how individuals arrive at shared representations and how that achievement might affect their subsequent trusting behavior. This article also takes a step back and considers the residual of negotiation which is taken for granted in society and social interaction: social institutions.

We could similarly think of an episode on a larger scale. How are managers to govern organizations? Papers 3 and 4 are related to topics like reward systems and leadership, respectively, in formal organizations. How can we achieve efficient, fair, and legitimate company regimes? The second paper examines social impact by females and males, regarding business topics as well as regarding non-business topics. Finally, what is a frequent basis for social orders in general? The first paper is related to issues like the emerging common ground after a merger with another firm, e.g., a project within the newly formed mega firm to establish a common vision.

Before embarking on the theoretical review, I will take account of the discipline in which I am operating. This is not only proper but also useful for understanding the empirical investigations, which turn out to be situated in a context compatible with business. I will argue that business tends toward a particular set of social relationships in which explicit exchanges are not taboo.

2.1 Business and Business studies.

It is sometimes said about India that it is not a nation, it is a continent. Something similar might be said about Business Administration. George Bernard Shaw's quip—"If all economists were laid end to end, they would not reach a conclusion"—is an understatement when it comes to Business scholars. The area of business is so heterogeneous as to be almost substitutable for busyness.

Accordingly the field of business studies is notoriously difficult to pin to a pithy definition. Nonetheless, as this is a dissertation in Business Administration, let us try to identify some important elements in business and business studies.

In his discussion of the Swedish discipline *Företagsekonomi*, which corresponds roughly to business studies, Gustafsson (1994, p. 52, my translation) provided the following definition: "The theory of individually and consciously instrumental acts." The definition was connected to the core topic of firms defined as: "The modern corporation is possibly the most developed manifestation of systematic work process. It is the social form, within which consciously goal-oriented and in advance planned specialized, abstract work has been the farthest developed" (p. 35, my translation).

A related theme in definitions of business studies involves exchanges. Engwall (2009) summarized a model of the firm in exchange terms in the following way. Three actors (external providers, internal providers, and customers) were crossed with two flows, one financial and one production flow, moving in opposite directions, to produce six combinations, each of which was said to constitute one aspect of the "object of study" in business administration (Engwall, p. 10).

The first definition hints at the pragmatic (or profane) instrumental approach of subordinating the means to the ends (bottom line). The second definition, involving exchanges, puts an emphasis on the willingness to trade one thing for another. Combined, the definitions remind us about the saying that some people (cynics, according to Wilde, 1892) know the price of everything and the value of nothing. On this view, Business Studies regard (if they regard business) that which is not perceived as sacred, and thus may be exchanged without moral objections (Tetlock, 2003).

Notably, the sacred might have an important role in any human context, including the dealings of wise business executives, but "business" puts the focus on exchanges where one thing can always be traded for another. To the extent that business is creative, it might be so because it does not have to

honor every tradition and norm, but can downplay the sanctity of particular means except for what impact they might have on one's ends, and therein has the potential to be iconoclastic and innovative. Of course, it is not like nothing is sacred for business. Hell, even the Vatican does business! In fact, business is guided by certain values; we won't trade or exchange just anything (e.g., children). Again, the point is that the business per se is limited to that which can be traded, i.e., is not sacred.

Even so, we might still need to qualify a definition of business in terms of sacredness, because it seems too strong. In particular, much business activity might be based on myth and consists of rituals or ceremonial proceedings (e.g., Meyer & Rowan, 1977), "sacred" activity which is likely to be isomorphic with the practices of other businesses in the field (DiMaggio & Powell, 1983). A fruitful way to define business might be in terms of the kinds of social relationships that it allows, because the kind of relationship that is involved might also regulate what is allowed, and what is not because it is sacred.

For example, in a TV show that enjoyed some popularity in Sweden during the last few years, *Solsidan*, a theme was the comic ups and downs of a couple who had just had their first child and was wrestling with the associated new challenges while trying to have an endurable relationship. One day one of them comes up with the clever idea that, in order to divide up the household chores equally, they will assign points to the activities and make sure that each of them earns the same number of points. They create a point system for all the things they need to do, assigning more points to heavy duties and fewer points to easier duties, and so on. One day, as they are going to bed, the husband initiates activities that suggest that they are to have sex. The wife is resistant to begin with, but then says, "OK, if I get 500 points." Then the point system breaks down.

Arguably, to think of a social behavior in terms of quantifiable exchanges means that one has adopted a particular perspective on the behavior. Labeling one's interactions with others in terms of explicitly acknowledged exchanges is a significant statement, as only some relationships are compatible with such mutual and explicit recognition. Any social activity could arguably be viewed as involving exchanges; the question is whether it is socially acceptable to acknowledge that.

The special kinds of sacredness and exchange in business involve particular kinds of relationships. Business relationships do not involve the same kind of rights and obligations as those in intimate relationships. Business is social

but consists of relationships in *Gesellschaft* (Tönnies, 1912). Specifically, business involves relationships characterized by market pricing, equality matching, or authority ranking, but not communal sharing (Fiske, 1992, p. 691-2; cf. *Gemeinschaft*).

In contrast, communal-sharing relationships typically involve some bounded group where everyone within it treats each other as fundamentally equivalent and undifferentiated. (Perhaps for this reason they often view each other as having some common substance, e.g., the same "blood.") Here, people view each other as of the same "kind" and tend to treat each other relatively altruistically. Examples of such relationships are close kinship and intense love; weak versions might be found in ethnic membership (and even minimal group paradigms according to Fiske). In communal sharing, many explicit exchanges (see, e.g., *Solsidan* earlier) are not allowed and are even taboo (Fiske & Tetlock, 1997).

This is why you don't do business with your family; or if you do, you do it differently. (And if you don't do it differently, you might be in trouble.) Even in family business, it is debatable whether one should treat each other as family. (This is true even for people about whom we say that they are "all business"; it is significant that they typically are not part of our family.) The key is that different kinds of relationships entail different obligations and rights. Business involves relationships that are not communal but rather remote enough (in their orientation to an order) such that exchanges are easy to refer to and then still make, rather than taboo because they violate sacred values (e.g., preferences do not become lexicographic).

For people who are related in some way, "business" highlights a tension between different relational types or models (Fiske, 1992). Put differently, I suggest that business points to a progressively achieved ideal through authority ranking, equality matching, and then market pricing—therein approaching the ideal of impersonal (purposive, instrumental) rationality envisioned by Weber (1922; see, e.g., Norberg, 2001, on financial markets) who was familiar with Tönnies's distinction. Of course, even keeping relationships at a professional level might ultimately be dictated less by efficiency than by legitimacy (Meyer & Rowan, 1977).

In sum, then, business could be construed as an ideal type which some institutions approach more clearly (e.g., markets) than do others (e.g., within formal organizations). At the extreme, it is the residual of the sacred in that it involves no communal relationships, and is a context where people are willing to trade freely and openly one thing for another. Thus, business aspires to-

ward market pricing especially outside of the organization's skin (thus leading to numeracy without an end). This is mass markets and market economics.

A theoretical implication of this conception of business is that a business perspective—compared to other social sciences like psychology and sociology—limits the visibility of communal relationships. Even phenomena like Tupperware parties or Facebook arguably involve relationships that are more shallow than are those in Gemeinschaft; but on the other hand it might not be a coincidence if this is not recognized because, as Asplund (1970) pointed out, it might be a sign of the times that people no longer understand the distinction between Gesellschaft and Gemeinschaft. In that case, perhaps a business perspective will do fine for all social phenomena, as all there is in society is business.

As we shall see further below, the empirical investigations of the present thesis all regard situations that fall within this realm, where communal relationships are not involved and people should be willing to trade one thing for another.

Are there also practical implications of this conception of business? Well, defined this way, perhaps business is for men. **In paper 2 in the present dissertation, the division between Gesellschaft and Gemeinschaft helps me identify domains that are perceived by lay people as male and female contexts of epistemic authority.** Interestingly, the discipline of economics once divorced the communal domain (Swedberg, 2009). Originating from the Greek word *oikonomia*, economics once concerned also household keeping, which later became a separate topic of household economics ("home economics") for women. While we might ultimately want to modify this gender stereotypicalization, in the meantime we might want to know also that current definitions of business and economics may favor men.

3. Theoretical Problems

Because the four empirical papers of the present thesis regard quite separate issues, addressing them all in one essay requires some stage setting. Some of the topics that I will bring up next are not addressed immediately in the papers but provide motivating and unifying context. In several cases the topics in themselves are huge, such that the essay will only hint at them and their implications. We may think of this essay as a collection of postcards from various destinations.[2] The processes leading to, and constituting, socially shared representations will be an important theme.[3] In a brief consideration of evolutionary and ecological perspectives, I will mention social learning, followed by a focus on shared cognition and the establishment of shared representations. From this foundation I will touch on resulting behavioral and attitudinal inclinations examined in the empirical papers on interpersonal trusting coordination, fairness perceptions, and negative discrimination based on gender, while I will hold off with the last empirical theme of agentic strategic skill (for value creation and distribution) until after I have presented and discussed all situations (including their embeddedness in social organization) that are examined empirically in the four papers.

  To stay consistent with a naturalistic account, I will start with evolutionary perspectives, which I hope to respect.

3.1 Evolutionary perspectives.

Whether natural selection proceeds by genes alone or at several levels simultaneously (e.g., Campbell, 1974; Caporael & Brewer, 1995; Dawkins, 1976; Nowak, 2006; Nowak et al., 2010), an evolutionary perspective provides an image of humans that contrasts sharply with that of some "standard social-science accounts" (Tooby & Cosmides, 2005) which depict humans as constituted entirely by their social experience (blank slate) and essentially divorced from the animal kingdom. Although a diverse field, evolutionary accounts typically present some predispositions selected for in past environments, so that not all theoretical possibilities are equally likely to develop. What more

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[2] Broadly speaking, if we allow ourselves the artificial distinction between structure and agency, we will begin the theoretical review by focusing on structures, and will emphasize agency at the end.

[3] Because social constructions/shared beliefs is a key theme of the introductory essay, as well as an important component in the first empirical papers, "shared beliefs" is stated as the first essay topic in the title of the dissertation.

does it mean to be informed by an evolutionary perspective? For the present thesis, it is of relevance that humans are disposed to be social, that they can learn, including development of a culture of significance, and that social skills have become crucial for them in their dependence on others (paper 4), a dependence which may involve trust, fairness, and negative discrimination (papers 1-3).

3.1.1 Social malleability in evolutionary perspective. As an adaptation to changing ecological conditions (niches), some animals (including humans) have evolved the potential to modify their behavior in response to events in the animal's life time, a potential for learning (Miller and Escobar, 2002; Shettleworth, 1998). "The classical view of internal representations (knowledge) is that some organisms, including humans, have enduring internal states that allow their behavior to be dictated not only by immediate external stimulation but also by traces of past experience" (Hedberg, 2007, p. 3).

The resulting acquired knowledge structures affect us in a myriad way: "[the] knowledge which is most accessible will constrain what one does (perceive, judge, and act) while that knowledge remains in this state of heightened readiness for use" (Hedberg & Higgins, 2011, p. 882).

Although typically positioned in opposition to positivist research, social construction processes among humans (Berger & Luckmann, 1966) may be understood as an example of the capacity to learn. **Papers 1 and 2 in the present thesis regard social memory. In these Studies we ask: How might we bring social construction processes under experimental control to better understand their antecedents and their consequences?**

Moreover, **paper 3** in the thesis regards culture, the connection of which to evolutionary processes is particularly clear when culture is framed in terms of retained collective traces of the past. Whether culture is that "most complex whole" (Tylor, 1974/1871), webs of public significance (Geertz, 1973) or "population-wide distributions of" individual internal representations, practices, and artifacts (Sperber & Hirschfeld, 1999; cf. Schein, 1990, on organizational culture), it is for practical purposes a human phenomenon (see Whiten et al., 1999, for overview of the minimal forms in other species). For the culture account which involves internal representations (e.g., epidemiological approach; Sperber, 1985), culture is enabled by evolution, and culture and social structures may even co-evolve with genes (e.g., Boyd & Richerson, 1985; see

also Caporael, 2008; Wimsatt & Griesemer, 2007, for integration with developmental systems). [4]

I will now turn to more detailed consideration of internal representations, which are implied in all four papers of the thesis. To account for the emergence of cognitive structures I will first consider ecological perspectives, which regard how organisms acquire (internalize, learn) X from an environment, and then consider the perspective of (constitutive) extended minds, which allows cognition to take place also outside the individual. Thereafter I will discuss the main topic of a naturalistic account of constructions engendered specifically by social processes. To put it differently I will consider the topic of learning from an internalist and ecological view, and then progressively move outside the body to the notion of an extended mind, after which I will discuss social construction proper. This should allow us to see the role of established social constructions as part of an environment that shapes behavioral and attitudinal inclinations in individuals (papers 1-3 on trust, fairness, and discrimination) and in which they may negotiate and act more or less effectively (paper 4).

3.2 Ecology.

Learning too can be viewed as the result of selection, but the result of selection of behaviors during the lifetime of the organism (Skinner, 1981). Learning is constrained by the environmental instances (learning schedules) that the organism is exposed to. Although social psychology famously calls attention to the importance of the "situation" over that of the person as causes of social behavior (e.g., Markus, 2004; Ross & Nisbett, 1991), almost all research focuses on the person. How might we think of the situation, environment or the broader ecology? In an ecological approach (e.g., Fiedler, 2007; Fiedler and Juslin, 2006) we can describe the environment in terms of how stimuli (or stimulus information) are distributed in time and space. How dense or fre-

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[4] Of course, although much is malleable, much in the organismic makeup may also remain. Several features of the human ecology of contemporary industrialized and post-industrialized societies are of recent date (e.g, weapons of mass destruction, airplanes, written language, and computers). The selection pressures may not have been effective for long enough for our genetic makeup to reflect them fully. For example, humans handle probabilistic environmental formats worse than frequentist formats (Gigerenzer & Hoffrage, 1995). **One of the hypotheses we tested in the last paper 4 was whether participants would perform better in a strategic contest when it was stated in a more naturalistic way.**

quent do the relevant stimuli appear? How variable are their appearances? How correlated are the appearances of different stimuli of interest, such that encountering one stimulus does or does not say something about whether another kind of stimulus is likely to be around.

As a parallel in the social sciences, we might mention the literatures in sociology, social anthropology, and history on collective or social memory in terms of media, commemorations, narratives, and so on (e.g., Erll & Nünning, 2008; Olick & Robbins, 1998). These publically available structures constitute part of the (artificial) human ecology.[5]

A mature behavioral science would connect environmental (situation) description to internal processes in the organisms of interest. For example, in an influential overview Higgins (1996) summarized what was known at that time about how stimuli are processed in terms of the internal knowledge structures that are brought to bear. In contrast, the (different) question of how the knowledge structures got into the mind in the first place was not explained. Acquisition of knowledge amounts to learning, a topic with a long history (Aristotle, Thomas Brown, Pavlov, Thorndike, and Vygotsky being some of the classics), so the question is not unexplored, of course. But there has been less cognitive psychology research on how the knowledge structures are acquired than how available knowledge structures are used.

Arguably, organisms have a chance to acquire knowledge depending on how they make contact with the available stimulus information. Besides influence by the aforementioned stimulus distribution, the encounter may depend on both passive and active processes. All else being equal, an individual will be positioned to encounter some stimuli more often than other. Fiedler (2007) described this as topological asymmetries. For example, the information available about my ingroup is likely to be richer (denser and probably more variable, providing a basis also for inferences about correlational patterns) than the information I have about some outgroup. And if, as usually is the case, desirable behaviors are more frequent than undesirable behaviors in both groups, then the greater density should lead to a more positive view of the ingroup. Thus, the topological ingroup-outgroup asymmetry may bias my learning and resulting knowledge structures. Second, besides the topology in which organisms find themselves, their more or less active sampling strategies

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[5] <u>Mass media</u> constitute a business example of a third actor with broad impact (cf. McCombs and Shaw, 1972; Scheufele & Tewksbury, 2007; Walgrave & Van Aelst, 2006), which regularly enters almost everyone's life as a part of the ecology. These shared communications represent collective memory in sociological accounts (e.g., Kansteiner, 2002; Olick & Robbins, 1998).

will also affect, and often bias, the information that they end up with. An example is when an actor samples contingent on a criterion event (or, synonymously, uses output bound rather than input bound sampling strategies; see, e.g., Abraham Wald's conclusion regarding sensitive parts of aircraft during WWII; Mangel & Samaniego, 1984).

The ecological approach (cf. classics like Brunswik, Gibson, Lewin, and Simon) calls for consideration of more than one class of variables; it won't do to focus only on the person or the situation but both sets (e.g., affordances and internal knowledge structures; or stimulus distribution, topologies and sampling strategies) must be considered. But where do the cognitive processes happen? For example, Sperber (1996) proposed an epidemiology of representations consisting of chains of alternating mental representations and public productions, where culture consists of both components but where the latter permit the propagation of the former (p. 3) such that cognitive processes take place within the skull. Next let us consider accounts of cognitive processes which may take place also outside the body.

3.2.1 Extended mind. Going beyond the interaction between environment and actors mentioned under Ecology, Hutchins (1995) indicated how not all cognitive work in flying is carried out by the pilot but is distributed across the equipment in the cockpit. Moreover, such combinatory cognition is true not only for cultural artifacts but also for influence from other people. Social interaction is not only a stimulus on individual cognition; cognition can also be emergent from, or constituted by, social interaction as in joint cognition, where several people may be indispensible contributors in a collective cognitive unit. An example is the collaborative work undertaken in conversation (e.g., definite referring, Clark & Wilkes-Gibbs, 1986; for additional examples, see also Krauss & Fussell, 1996).

In both examples cognition may take place not only within one individual (e.g., Olick, 1999; Smith & Semin, 2004). A middle way between a conception of a group mind on the one hand (McDougall, 1920; Weick & Roberts, 1993; cf. Wegner, 1986) and an individual mind bounded by the skull might be found by Clark & Chalmers (1998) and especially Wilson (2005) who maintained that remembering (the type of cognition examined) is done by individuals but allowed that "this activity is not bounded by what goes on in the head of the individual" (p. 231). Here cognition is not only affected by the situation and draws on situational resources, but might be <u>constituted</u>

partly by transcranial resources like technological and cultural artifacts, and other people.[6]

To remind ourselves about implications for business research, I will gesture briefly at some possible parallels in markets and organizations.

Example 1: Markets as cognitive entities. It is commonly argued in business studies and economic sociology that the price theory in economics (though see Milgrom & Roberts, 1992; Williamson, 1991) glosses over the embeddedness (Granovetter, 1985) and substantial organization that is often involved in markets (e.g., Ahrne, Aspers, & Brunsson, 2011; Johanson & Mattsson, 1987; Swedberg, 2003), and may even be constitutive of markets (e.g., MacKenzie & Millo, 2003) plus the great variety of forms markets may take (e.g., Ahrne, Aspers, & Brunsson, 2011).

In this context, we may take note of the results in experimental economics on the consequences of various forms of market protocols (broadly, market microstructure) that may be driven by quote by the market makers or takers (e.g., foreign exchange), by brokers, or by orders (e.g., continuous double auction or call market). Substantial literatures have tested and documented the considerable impact that situational variations have on obtained efficiency. For example, in continuous double auctions as few participants as 3-4 buyers and 3-4 sellers are enough for markets to behave like standard theory predictions (Smith, 2003, p. 468). And participants do not need to have complete information to arrive at competitive equilibria (p. 475). Indeed, Sunder (2004) made the argument that perhaps markets evolved to compensate for human cognitive limitations and yet achieve allocation efficiency. Simulations indicate that agents who randomize except for obeying their budget constraint may collectively achieve efficient allocations (Gode & Sunder, 1993) in double auction markets (at least for single commodity markets; Smith, 2003). Similarly, Smith (2003, p. 476) speculated that, perhaps, such a market constitutes a supra-individual structure. It seems possible to make a loose but striking analogy between this socio-technical constellation (cf. Callon & Muniesa, 2005) and the extended mind hypothesis.

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[6] For an account founded on a radically different ontology but with similar implications for empirical investigation, see the (pantheistically flavored or ubiquitously agentic) socio-technical agencements of Callon (2007).

Example 2: Formal organizations as memory conglomerates. Literature on organizational memory has included both individuals and publically available structures. Although there are other prominent conceptualizations (e.g., Argote & Ingram, 2000; McGrath, Arrow, & Berdahl, 2000), empirical investigations have continued to attempt tests of Walsh & Ungsons's (1991) memory framework (e.g., Fiedler & Welpe, 2010). Walsh & Ungson adopted a functionalist approach to avoid a false analogy to human information processing. Thus, whatever happens to store decision information is referred to as memory. The resulting storage bins in organizations are quite disparate and include humans (individually or in the form of culture, the latter of which includes stories, language, and shared frameworks that are retained in transmission processes and hence go beyond a purely "collected memory" in Olick's 1999 terminology) as well as purely "collective memories" (role structures, transformations, physical environment), plus the surroundings (external archives). This memory is thought to be distributive in nature. Culture as shared memories (perhaps as well as role structures and transformations) that go beyond what any individual knows ("supraindividual collectivity") might be thought of as elements of extended mind (possibly even including the physical surroundings, as these frame how and where activities happen) in contrast to the storage bins in the form of individuals. Aside from memories in individuals, then, each of the storage bins provide kinds of the aforementioned scaffoldings by individuals or artifacts.

The human ecology is an interactive ecology of social interdependencies. I will now zoom in on the influence of other people. I will begin with direct social influence, which gives rise to socially situated representations and constructions, which can guide the more or less agentic individuals in their oriented courses of action (e.g., in the situations with outcome interdependencies mentioned later in this chapter) that reproduce and produce (Snyder & Cantor, 1998) social reality.[7]

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[7] The preceding discussion of ecology is relevant also for social constructions, as they become elements in the artificial ecology (or, metaphorically speaking, way posts in the conceptual landscape). Thus, all the concepts and tools available to ecological analyses (e.g., stimulus distribution, topological asymmetries, and sampling biases) can ultimately be applied to a social-constructive layer too, along with the collective memories of narratives and commemorations.

3. 3 Shared cognition.

Now that we have discussed several extra-cranial means of cognition, we will focus on the most social such means: other minds and the ensuing shared representations. How do such shared representations arise?

3.3.1 Building blocks. We can use Weber's (1922) concept of social action to handle these interactive environments, although it was part of an interpretative approach to sociology which defined action in terms of the subjective meaning attached by the actor. For Weber, social action was special in that it takes account of (i.e., its subjective meaning is oriented to) the behavior (*Verhalten*) of others.

One reason that social influence leading to perceived common ground (representations) is important is that such (seemingly) mutually recognized representations can remain over time. In contrast to immediate influences flickering back and forth, these representations can become fixtures in social settings (Hardin & Higgins, 1996).[8] Social fixtures are important in that social action can then take these as objects of orientation, just like other people's actions etc can be objects of orientation. According to Weber (1922), a <u>social order</u> is (the subjective meaning of) a social relationship where actions are oriented not only to the actions of others but also to determinate propositions (maxims). They may become building blocks or scaffolding for the social work we need to do in interpersonal society.

Some types of direct social influence processes. When we think of personal influence, we typically think of some actor who influences the focal individual/actor. This is the classical case, perhaps most eloquently expressed (and with data) by Kelman (1958) in terms of compliance, identification, and internalization (further differentiated by, e.g., French & Raven (1959) on legitimacy, and Merton (1957) on different referent groups). Social influence by others on the self can be distinguished from various cases of self persuasion (Janis & King, 1954; Festinger, 1957; Bem, 1965; Higgins & Rholes, 1978). As we shall see

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[8] While mutually acknowledged features that become social fixtures might be relatively inert, like the inter-subjective objects of perception which we refer to as physical reality, this is not to say that they are more inert than dynamic equilibria which involve people who continually act, and therein may reproduce the pre-existing patterns.

further, in self persuasion there is a saying-is-believing (or doing-is-believing) effect whereby the actor persuades himself or herself in the act. [9]

The development of the self concept(s), itself a social construction or fixture, may follow a process of social influence, which also involves perspective-taking. To explain its emergence G.H. Mead (1934; as reported in Deutsch & Krauss, 1965) described significant symbols, which instill the same internal response in the actors as in the observers (cf. joint intentionality if we generalize from responses to other states). To appreciate the meaning of such gestures—i.e., another person's response to it—people need to be able to take the role of another person; and through the generalized organization of others' attitudes to oneself a self concept emerges over time. Much research has documented (see, e.g., Baumeister, 1998) how the self is a regulating fixture for social behavior.

3.3.2 A constructive mechanism for shared representations. We are now ready to encounter cases of interactionist social influence where the source is the other and the self in combination (e.g., Hardin and Higgins, 1996; Echterhoff et al., 2005). **In the first two papers of the thesis we rely on an experimental paradigm that allows us to track memory consequences of communication between two parties.** In this paradigm, the source can be the other and the self in combination, because the memory of the focal person may be affected both by that person's own audience-tuned message to another person (the audience) and by the audience person's confirmation or disconfirmation about the content of the message. This is the process we describe in paper 1 (whereas paper 2 describes a simpler audience-believing process). In paper 1 we suggest that this combinatory process can be a mechanism for social construction and the emergence of social institutions. We need to consider the experimental paradigm in some detail to appreciate the subtle effect.

Briefly, in the Communication Game, participants are induced to send messages they do not necessarily believe in, but may start believing in once the receivers verify their messages. The basic task in the Communication Game is for two people to communicate about a topic, such as a third person. One

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[9] There are also social influence processes happening off line. Remembering after (remembering in) conversation may also be characterized by social contagion (other believing) or socially-shared retrieval-induced forgetting depending on whether the mentioned information was not known (including differently known) or was known to the audience and therefore involves effects of selection rather than novelty or distortion (Hirst & Echterhoff, 2012), both of which processes may promote converging memories.

participant, in the role of sender, initially receives information from the experimenter that she is to write a message to another participant in the game, the receiver, about a third person (target) whom the receiver happens to know. The sender receives a sheet with written information about this third target person. Once the sender has read the information, she returns the sheet to the experimenter, and then tries to describe the target person in a written message to the receiver in such a way (without mentioning any names) that the receiver may identify whom the sender is describing. At the moment when the experimenter provides the sender with the written information, the experimenter mentions to the sender that the recipient happens to like (or not like) the target person. This is an experimental manipulation to control the tone of the messages, because senders spontaneously adapt their messages to recipients. Senders write more positive descriptions to recipients said to like the target person, and more negative descriptions to recipients said to dislike the target person (Higgins & Rholes, 1978).

Some time after the sender has sent off his/her message to the recipient, s/he is later requested to recall the written information about the target person that s/he originally read. In this situation, the memory of the sender is typically modified toward the attitude of the recipient toward the target person. Thus, if the recipient likes the target person, the sender now remembers the text as more positive; whereas if the recipient dislikes the target person, the sender now remembers the text as more negative. This modified memory constitutes one type of shared view (social representation) which is based on the recipient's verification. This is so because the sender acquires the same attitude toward the third person as the recipient does – if and only if the recipient verifies this view about the target person by successfully identifying him/her from the message. In cases where the recipient does not succeed in identifying the target person, there is reduced memory change or none at all (Echterhoff et al., 2005).

The necessity of social verification for the memory change to happen is an example of how this memory is socially motivated. In many situations people have epistemic needs to rely on others to know what is going on. In the mentioned paradigm this can be shown by altering the goal of the communicative exchange. If participants have a non-epistemic goal with the communication, there is no memory change following social verification. For example, if participants are paid money according to how well they audience-tune, then the recipient's verification does not matter for the sender's memory, which is unaffected by the communication (Echterhoff et al., 2008).

Similarly, the memory change is qualified by the participants' motivation to let a particular other person verify their views. When Echterhoff et al. (2005) used German participants in the roles of sender and recipient, the senders' memories were modified toward the recipient's attitude. But when the recipient, whom German senders sent messages to, had a Turkish name, the senders' memories were not affected by the verification of the recipient (i.e., the recipient's success in identifying the target person). This is an example of a more general result that the memory change in this situation depends on the participant's motivation to establish a "shared reality" with another person (see, e.g., Echterhoff et al., 2008). This motivation is weaker if the other person belongs to an outgroup. Most directly, providing participants with (i.e., manipulating) a heightened epistemic need (letting them fail on a related judgment task) enables the aforementioned memory effects, whereas a lowered epistemic need does not (Kopietz et al., 2010).

Because the sender's memory is modified toward the audience's attitude, the result is converging memories in the two individuals. **In paper 1, we refer to audience-tuning followed by social verification as a mechanism behind social construction.** I will argue that this, along with other forms of social construction processes, can be identified as mechanisms responsible for the social fixtures that make up social reality (cf. Searle, 1995, 2010, on status function declarations).

The next two sections will hint at the broad applicability of the aforementioned constructive mechanism, first in relation to the frequent allusion in social sciences to social construction, and second in relation to various types of important social fixtures, which could be targets for shared reality construction.

3.3.3 The experimental science of social construction processes.

> Social construction has in many contexts been a truly liberating idea, but that which on first hearing has liberated some has made all too many smug, comfortable, and trendy in ways that have become merely orthodox. The phrase has become code. If you use it favorably, you deem yourself rather radical. If you trash the phrase, you declare that you are rational, reasonable, and respectable. (Hacking, 1999, p. VII)

Strong versions of social constructionism, e.g., that everything is constituted by social constructions, might be difficult to combine with science aiming at discovering replicable empirical principles; but this account arguably runs into self-defeating propositions (cf. I am lying.) and is also undermined by the disingenuous impression made by proponents who don't live by their words (Why don't you try jumping out of the window if there is no world out there unless we construct it?). In contrast, weaker forms of social constructionism that are the more popular in practice may consist in pointing out that our beliefs about things are often socially engendered.[10] Such forms of social constructionism are compatible with testable propositions, as we show in the first two papers (see Research Approach). **In the first paper, we conceive of the converging memory following the Communication Game as an experimentally induced social construction and examine its effect on trusting coordination. In the second paper, we utilize the same Communication Game to examine whether people are differentially inclined (motivated) to establish a social construction with men and women.**

We have already observed social fixtures in the form of self concepts and shared beliefs about particular objects (persons). We propose in Study 1 that shared reality construction may be related to the difficult question of how social fixtures, like social norms, might be constructed. As pointed out in paper 1, non-experimental methods have difficulties catching the emergence of social fixtures like institutions. Similarly, Cialdini and Trost (1998) referred to Sherif and noted that very little research existed on the origin of norms (cf. Ahrne, Brunsson, & Tamm Hallström, 2007). **Our demonstrating one such mechanism might be one of the contributions of paper 1.**

> We propose that social verification following audience tuning can be one explanation of social institutions or social structure (cf. Hedström, 2005, on endogenized social structure). For example, in an influential overview, Scott (2001) described social institutions to be of three kinds: regulative or legal, normative, and cultural-cognitive or shared understandings. In the present experiment, participants came to have an understanding of a person, an understanding which they believed they shared with another person. Thus, it can be argued that the present experiment produced a *minimal form of a social institution* in the form of a shared understanding. The results in the experiment suggest that this so-

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[10] Also claims that some things (rather than beliefs) are socially constructed can be handled in a naturalistic account (see, e.g., Searle, 1995).

cial institution, despite being minimal (and examined during only a brief interval), enhanced subsequent social coordination in a situation with material outcomes at stake. Thus, on the basis of a social motivation to share reality with other people […], social structures might be reproduced and social coordination might be facilitated.[11] (p. 25, paper 1)

Thus, in paper 1 we interpret social contructions manufactured for our experiment in terms of social institutions (and social structuration). In paper 2, I argue that women are discriminated against by not being welcome to partake fully in the shared reality construction, which undermines the representation of women's interests in the public arena.

To hint at the potential breadth of the involved mechanism, I will briefly mention a few basic social fixtures, all of which are critical components in ongoing social regulation in human society and could be subject to the shared reality mechanisms that we utilize in papers 1 and 2.

3.3.4 Additional types of (endogenous and governing) shared beliefs. Social settings are characterized by shared beliefs or expectations of various kinds (see also Zucker, 1986). Expectations in the form of obligations that are known to apply to everyone, we might refer to as (injunctive) social norms. Social norms might be one of the consequences of the aforementioned forms of social construction (Sherif, 1935); they are a powerful source of influence on actors. For example, Cialdini and colleagues have distinguished between descriptive norms and injunctive norms (cf. informative and normative motivations for conforming; Deutsch and Gerard, 1955; see also other reasons for behavioral uniformity in Hirshleifer & Teoh, 2003), and showed independent effects of each (e.g., Cialdini, Kallgren, & Reno, 1991), further enhanced when they were framed provincially (Goldstein, Cialdini, & Griskevicius, 2008).

If (injunctive) social norms involve (privileges and) obligations that apply in general, those privileges and obligations that refer to only particular social positions (socially recognized actor categories; Levine et al., 1993) we might refer to as social roles. Experimental procedures typically involve roles. For example, when we are testing social verification we are relying on social roles: one person is a sender and one person is a receiver or audience.

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[11] This view is consistent also with the narrowed-down version of Scott in Ahrne & Brunsson (2011) who understands social institutions as only the first pillar of what's taken for granted.

In some cases, individuals internalize the positions they are in, and start viewing themselves as others have viewed them based on their social positions. Such internalized designations can be referred to as social <u>identities</u> (Levine et al., 1993). In terms of memory, such an identity has become an available knowledge structure (Tulving & Pearlstone, 1966). In contrast, available knowledge structures may be more or less accessible, i.e., have more or less retrieval potential. For example, one's sense of membership in a collective may increase the accessibility of a particular social identity which thus becomes the pre-potent one. One of the fascinating features of groups is how easily we may identify with them. In the minimal group paradigm, people are assigned to groups on nonsense grounds, and yet start favoring members of their own group over members of other groups in subsequent judgments and decision (Tajfel, 1970; Tajfel, Billig, et al. (1971).

The main theoretical frameworks for phenomena involving collective identity have been social identity theory (Tajfel & Turner, 1979) which mainly provides an explanation for the ingroup favoritism that follows from collectivity identity, and self categorization theory (Turner, 1985) which mainly accounts for the emergence of a context-dependent level of identity. While pursuit of self-esteem through a positive distinctiveness was originally the motivational explanation for the former theory, an epistemic motive of uncertainty management has been one motivational explanation for the latter (e.g., Hogg, 2000) along with a more evolutionarily based account of dual motivations for distinctiveness and belonging (Brewer, 1991).

Thus, the present proposal is that social norms, roles, and identities could be constructed via role-taking and social verification. Whether the socially constructed landscape of fixtures is to be perceived as constitutive of extended minds, or merely stuff to acquire for an individual mind within the skull, such fixtures often serve a regulative function. The regulatory function of the self concept(s) might be particularly obvious in that it embodies standards we need to live up to, as in self-regulation; but other social fixtures including social identity also partake in the social regulation. In the present thesis I will examine a few of the basic behavioral and attitudinal inclinations that constitute socially regulated behavior in a society: interpersonal trust, fairness standards, and discrimination against some individuals or groups. (The fourth topic of the dissertation, on strategic skill of individuals, will be discussed later as it involves individual variation in people's navigation within the structures.)

These three phenomena covered in papers 1-3 are not only constituent parts of the socially constructed landscape (of established social fixtures/memories/constructions) but also follow from it. In particular, as we shall see in paper 1, the establishment of a social fixture by means of the shared reality machinery may also facilitate trusting coordination among individuals. Furthermore, while some people view trust as a structure (Zucker, 1986), in paper 3 we study a social structure in the form of fairness standards, which turn out to be influenced by culture and socio-economic structure. And in paper 2, I relate the establishment of social fixtures to gender-based discrimination, of a cognitive form which is presumably socially engendered. These three effects receive deeper theoretical and empirical consideration in papers 1-3, but I will now introduce some important features of the papers.

3. 4 Resulting and constitutive individual/behavioral inclinations: Trust, Fairness, and Discrimination

3.4.1 Interpersonal trust and coordination. Human society is characterized by deep social interdependence. People (need to) rely on others to achieve their goals, whether the goals are personal or collective. However, others' future behaviors (and states) are uncertain, so choosing to rely on others is risky. One way to view trust is that it is a substitute for formal control mechanisms (Rousseau et al., 1998). In that regard trust could have advantages over formal arrangements. For example, trust might increase efficiency when formal control mechanisms are expensive or difficult to utilize. In particular, when the formal control mechanisms (including monitoring) are sufficiently expensive or difficult to undertake, then, in the absence of trust, less than optimal amounts of investment or trade could result.

Conversely, formal arrangements could "crowd out" trust, which is readily seen from an attribution perspective (Heider, 1958; Kelley, 1967; cf. Lepper et al., 1973, regarding motivation). First, the existence of a formal control system might undermine attribution of trustworthiness to one's potential trustees because there is an alternative explanation for trustworthy behavior. Second, the control system might also limit possible behaviors of the trustee such that no habit of actually conducting oneself trustworthily can develop in this person. Thirdly, an entity that chooses to rely heavily on formal control systems might signal distrust, which can become self-fulfilling (Bohnet, Frey, & Huck, 2001; Falk & Kosfeld, 2006). Thus, interpersonal trust is not only important;

it is also sensitive to social arrangements often adopted in business and favored by related scientific disciplines (cf. Ghoshal & Moran, 1996).

An influential definition of trust as a psychological state was offered by Rousseau et al. (1998) and can be adapted for the present thesis as willingness to accept vulnerability, under risky social (inter)dependence, based on positive expectations of others' behavior or intentions.[12] Notably, trust does not seem to be reducible to risk in general but has a social component, witness the phenomenon of betrayal aversion (Bohnet & Zeckhauser, 2004; Bohnet et al., 2008), such that people abhor a social risk (someone letting you down) over an equiprobable non-social risk (lottery).

Various forms of interpersonal trust may be distinguished (besides variation regarding the entities involved, levels of analysis, etc). A distinction with currency across several social sciences is to separate forms that approach control mechanisms on the one hand (deterrence based, and perhaps even institution based trust) and more clear cut cases of trust like calculative versus relational (affective or even identity based) trust (Rousseau et al., 1998). In the present thesis, we rely on brief structured situations among strangers (to be described shortly) such that mainly calculative trust is likely to be in play.

Because prior research (e.g., Cox, 2004; Ashraf, Bohnet, & Piankov, 2006) has found that trust performance on some classical measures (e.g., the investment game; Berg, Dickhaut, & McCabe, 1995) is associated with altruism, we controlled for altruistic game tendencies (following Fehr, 2009, p. 240) when we measured trusting behavior though in our case with weak-link coordination games (see below under "Situations"). We called the resulting, novel concept for trusting coordination (paper 1). The use of a behavioral measure also allowed us to go beyond the commonly used self-report scales used in social psychology where people simply rate how much they trust another person, so that we could see if people would "put their money where their mouth is."

In this introductory essay we have spent much space on shared representations and their emergence. In the first paper we tested the impact of successful social construction on trusting coordination. Before participants made interdependent choices for real money, they either succeeded or failed in the earlier mentioned Communication

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[12] Others provide behavioral definitions of trust. For example, Fehr (2009) defined trust as a behavior, and then related it to belief in trustworthiness, as well as to risk preferences and social preferences.

Game; that is, they either succeeded or failed at establishing a shared reality with a counterpart. Conceivably, any prior collaborative success might give rise to trusting inclination among the involved parties. To rule out this alternative account, we included as comparison condition of people who were on the same team (but never had a chance to establish a shared reality). Thus, we tested whether, as hypothesized, there would be a unique effect of shared reality establishment on trusting coordination.[13]

Based on prior research we have classified role-taking + social verification to be one kind of social construction process. The present test of its possible impact on trusting coordination could shed light on how such social constructions structure human interaction.

3.4.2 Sense of fairness. Fairness is a standard which members in a community might orient to, and is typically viewed as one of a handful of components of morality (e.g., Haidt & Graham, 2007). The fairness of economic distribution and re-distribution is a defining issue involved between left-right political ideologies. Extensive research has examined people's sense of justice or fairness when it comes to outcomes (distributive fairness), procedures, and interaction. The third paper regards determinants of perceived distributive fairness.[14]

Fairness is not only a value in itself but has profound and pervasive consequences. For example, employees' sense of fairness is a leading (de)motivator in corporations (Cohen-Charash and Spector, 2001; Colquit et al., 2001), and fairness figures prominently also in political life (e.g., Lupu & Pontusson, 2011) and affects the durability of negotiated agreements (Druckman & Albin, 2011).

There are sizeable income differences within and across countries. It is an open question to what extent fairness plays a role in actual choices or is

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[13] The mere collaboration condition is a rigorous comparison not only because successful collaboration is intuitively a situation in which pro-social effects might arise. Putting people in the same team also gives rise to a minimal group, which has been shown to result in ingroup favoritism (e.g., Tajfel et al., 1971) and could be associated with altruism.

[14] In some literatures, justice and fairness are two distinct such guides. For example, Rawls (1963) defines fairness as fair play: the existence of impartial rules by which people actually play. In the here relevant literature on perception of fairness and justice, they are typically used synonymously. One reason might be that the data stem from lay people's judgments of fairness (or justice) and as we shall see it is doubtful that people uniformly stick to a narrow definition of either. In the present Chapter, I use "fairness" but thereby make no distinction to "justice."

merely a consensual concept (Konow, 2003) which might be used differently in different situations (Kahneman et al., 1986a); and the impact of fairness might differ across different cultures. Some conceptions of morality suggest typologies (Haidt, 2001; Rai & Fiske, 2011), but these may not be necessary or essential (Jost & Kay, 2010). Influential contemporary accounts of morality (e.g., Haidt's; Rai and Fiske's), which examined cross-cultural differences, suggest that our moral intuitions are constructed.

To extend knowledge about fairness determinants, paper 2 elicited fairness ratings of employees in Citibank regarding how to distribute a gain or a loss among employees at a company sub-unit. What are the factors that affect what people find to be fair? Classical allocation rules for distributing some resources among members of a collective are equality, need, and merit/equity. A number of other rules can be devised; two additional examples that we examined in paper 2 are proportionality (benefits or burdens are divided in proportion to one's preexisting pay) and hierarchy (proportional to one's rank in the collective/organization). **Like other social structures, fairness perceptions could be implicated by resource distributions and conceptual schemata. The data collection at Citibank allowed us to compare impact by country of respondent, such that we could examine how the societal inequality in a country might affect people's view of whether a particular distribution principle (e.g., merit or need) was relatively fairer. Also, we administered measures of cultural orientation, such that we could take into account whether people oriented to hierarchy as well as whether they were individualist/collectivist in outlook. In our study, fairness turned out to be a versatile construct in that it could therein be applied both to micro- or group-level legitimacy such as the data from Citibank employees, and to macro-level data such as the Gini coefficients for income distribution in the relevant countries. Interestingly, the two sets turned out to be related, with fairness perception as the bridging variable.**

The other side of the coin of fairness is unfair treatment, or negative discrimination. Interestingly, negative discrimination might also involve social constructions, and this time in terms of disinviting some people from partaking in social construction processes.

3.4.3 Gender-based discrimination. The fact that human societies are characterized by unequal distribution of resources among its inhabitants is reflected also in other and more targeted effects. Some individuals or groups of individuals might be disadvantaged in their probabilities to obtain value for themselves, in ways that are not explained by their internal features like competencies or motivations to achieve for themselves (e.g., Wennerås & Wold, 1997; for a different view, see Polachek, 1981). When there is thus not a "level playing field," we might describe this as negative discrimination against some people (Dovidio & Gaertner, 2010, p.1085):

> According to Allport (1954), discrimination involves denying "individuals or groups of people equality of treatment which they may wish" (p. 51). Racial discrimination involves direct harm, failure to help, nonverbal behaviors, and overt pejorative evaluations of outgroup members.

Because (probably all) social positions (i.e., recognized social categories) are associated with stereotypes, each with its own idiosyncratic advantages and disadvantages, it is difficult to know which groups, on balance, are more poorly treated than others. Perhaps the largest group popularly thought to be discriminated against is women, roughly half of all humans. In most countries in the world, women have lower average salaries than men have (United Nations Statistics Division [UNSD], 2011) and are less well represented in corporate (McKinsey, 2010) and political hierarchies (UNSD, 2011).

Women as discrimination targets highlight that discrimination can happen in many ways. The classical definition offered by Allport (and Dovidio & Gaertner) suggests that negative discrimination is hostile and involves pejorative evaluations of the targeted group. This definition does not fit women, however, who are typically found to be more, not less, liked by both men and women; and yet they seem to be discriminated against (e.g., Eagly, Mladinic, & Otto, 1991; Glick, Lameiras, et al., 2004). Thus, the important phenomenon of negative discrimination does not vary only in terms of its targets.

To study discrimination against women I relied on memory measures. Memory is a non-obtrusive way to infer the internal processes that have taken place (archeology of the mind); moreover, these traces, that the processes have given rise to, have powerful and fundamental effects on people's subsequent perception, judgment, and behavior. Discrimination that affects the mind/memory could be broad spectrum because the traces typically remain beyond the initial situation. For women as targets of discrimination, memory-based discrimination could be relevant because, while women are liked more,

they are also considered less competent in certain areas (Glick et al., 2004; Lindgren, 1999). There are many situations (Festinger, 1954)—perhaps all situations (Hardin & Higgins, 1996)—where people need to obtain knowledge and beliefs from others. **In such situations, people might be less willing to obtain the input from women (paper 2). We might refer to this as gender differences in epistemic authority. Like in paper 1, the Communication Game used an unobtrusive method to detect social influence: influence through receivers of communications. Gender differences in such influence would amount to a novel and subtle non-hostile discrimination contrary to classical definition by Allport (and research about black men in the U.S.), as well as going beyond the Goldberg-paradigm (Goldberg, 1968) and studies specifically on gender differences in social influence (e.g., Carli , 2004). To the best of my knowledge, it would also be the first time that gender-based discrimination was shown to happen in terms of memory trace.[15]**

Thus, Study 1 and Study 2 involve the Communication Game. All Studies except Study 2 (and including the so-far not mentioned Study 4) also involved structured situations of strategic interactions. Let us touch on these remaining situations now.

3. 5 Situations

The studies in the dissertation involve simple, designed structures. In contrast, they consider neither "wicked problems" (Rittel & Webber, 1973) which are challenging to analyze, nor do the studies capture strategies that aim at changing (or creating) the game structure (Grant, 2010, p. 103). These are important limitations; in return the simplified structures provide interpretable data as far as they go (see later on partial organization, as well as Research Approach).

What features are important for social situations? One important feature is the outcomes associated with choices in social situations. One of the consequences of the mathematical theory of games (von Neumann & Morgenstern, 1944) is a number of games which might be said to constitute a taxonomy of outcome-interdependent situations. Such games are defined by the involved actors (players), their choices (strategies), the rules of the interac-

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[15] Individuals' available knowledge structures constrain their behaviors. Therefore, people's memories have subtle but powerful effects.

tion, and the outcomes in terms of utilities associated with combination of choices by the actors (payoffs). The framework can be applied to empirical studies of human interaction by substituting actors with individuals, by substituting utilities with some measurable outcome dimension like money, and by presenting the resulting situation in a way that probably puts people in it. Many interesting situations can be characterized partly or entirely as economic games. If the mentioned features are the most critical in social interaction, then the set of economic games could be applied to every kind of social situations and every kind of actor in terms of payoffs such that it might have great breadth of appeal; some prominent researchers even argue that it might be the social science analogy to the periodic table in chemistry and could help unify the behavioral/social sciences (e.g., Camerer, 2003; Gintis, 2007).

In cooperative game theory, actors can form binding agreements (coalitions) such that research interest can focus on how to divide the benefits achieved from the coalition. What principles of distribution are efficient, equitable, fair, and so on when a collective has some resources? Does it matter whether a gain or a loss is distributed? **In paper 3, members in a transnational corporation assess the fairness of various principles of allocating resources. As we will see, people's judgments differ depending on whether a gain or a loss is to be allocated, as well as depending on the cultural orientation of the judge and the economic inequality pattern of the society in which the judgment is made.**

In non-cooperative game theory, actors cannot form binding agreements. This is class of games lay people typically refer to when they talk about economic games. One of the most fundamental means to predict behavior in games is dominance. For example, in a dyadic game where actor A is at least as well off (and sometimes better off) with option I over option II no matter what actor B does, it makes little sense for actor A to choose option II. Thus, according to the standard theory actors should choose dominant strategies, as well as believe that others will choose dominant strategies, such that they can respond to that. Obvious as this might seem, when the situation requires several iterations of this reasoning, the chances that actual human beings will behave accordingly might decrease.

The Beauty contest (Moulin, 1986, chapter 4) is an example of such iteratively dominance solvable games in that it provides a scale of number of iterations out of a potentially high or indefinite number. Briefly, a group of participants are publicly asked to provide numbers between 0 and 100, where

the winner is said (still publicly) to be the person whose number is closest to some particular fraction (typically $\rho<1$) of the average. If people's choices are interpreted as following a predictable path of going from the observation that random responses in the group should give an average of 50, a typical answer reflects 1-2 steps from that (e.g., Camerer, Ho, and Chong, 2004) but should depend on context. **In paper 4, I utilized this game (as well as a naturalistic version of it, designed so that people can reason a larger number of steps) as a measure of people's social interdependence skill. Notably, and in contrast to cognitive hierarchies or level-k analyses, skill is defined in relation to the winning number; that is, skill is inversely related to the absolute distance between the person's chosen number and the winning number in a group.**

The most prominent solution concept in game theory, Nash equilibrium (NE), involves a combination of choices that are stable in that no actor can benefit from moving given the other parties' choices. That is to say, everyone is best replying to everyone else's best replies. In the Beauty Contest above, when $0< \rho<1$ and any real number is allowed, the NE is 0.

When outcome-interdependent choices are tested, the interests of ego are often pitted against those of alter. At its simplest, other-regard can be measured as direct part-taking in alter's outcomes. In dictator games, one person determines, unilaterally, how to divide up some pre-defined resource between themselves and others such that these games might measure altruism (Kahneman, Knetsch, and Thaler, 1986b). At NE the allocator shares nothing of the resource, but empirical outcomes typically involve substantial sharing (e.g., Henrich et al. on universal deviation from self-interested prediction?).

For many interesting situations there is not a unique NE solution. Coordination games have multiple equilibria in pure strategies, such that NE does not provide a unique prediction. Apart from therein providing an interesting testing bed for behavioral game theory (Camerer, 2003), some coordination situations are of great interest to social scientists in general in that they can model important social processes like interpersonal trust when there are payoff dominant equilibria which are also risky. For example, in weak link games the overall payoffs are higher the better that the weakest link is in the group, but actors are punished for deviating from the weakest link in a positive direction and hence rewarded for matching (and thereby constituting) the weakest link, which is an incentive to push down the weakest link to everyone's detriment. The distribution of initial responses seems to result in payoffs falling

far short of the pareto optimal equilibrium (e.g., Van Huyck, Battalio, & Beil, 1990). **In paper 1, we study how trusting coordination in a stag hunt, as well as in a more general weak link version (adapted from Van Huyck et al.) involving five actors, is affected by a previous chance to collaborate or form a shared representation with another anonymous actor.**

An important set of economic games that have been studied heavily in the last fifty years are games where the actors know their own payoffs but have imperfect information about the payoffs of other actors, and are allowed to communicate with their counterparts in order to achieve desirable joint choices. These games are typically referred to as *bargaining and negotiations*. By relaxing the assumption of rationality, Raiffa (1982; see also 2002 for a development) enabled game-theoretic outcome dimensions to become relevant for extensive research in social sciences besides economics like psychology and business/management, political science, and law.

Because the communicative aspect of negotiations can be construed as collaborative, the negotiation parties need to collaborate (in the sense of communicating successfully) at the same time as they compete (in the sense of ultimately having to divide among themselves whatever value there is collectively) (Lax and Sebenius, 1986). A further tension between collaboration and competition comes from the structure of the substantive negotiation issues to be resolved. This is because, with regard to explicit outcomes, negotiations can be divided like other games into constant-sum games and variable-sum games (cf. Walton & McKersie, 1965). Negotiations are often represented in terms of some number of issues that the negotiators need to agree on in order to arrive at a deal. Based on subsets of these issues, a single negotiation may often be modeled as containing both constant sum games and variable sum games. The challenge of resolving issue sets with variable total sum thus provides a tension between a collaborative aspect of creating value and a competitive aspect of ultimately distributing that value among the parties.

Issue structures can be divided in further informative ways. For example, value may be created (i.e., making more total value available to the collective for later distribution among parties) either when issues are compatible, such that the negotiators truly prefer the same options regarding the issue, or when issues are integrative, such that the negotiators have opposite desires but one party cares more than the other such that trades can be made among the counterparts such that at least someone is better off and none worse off. Negotiators typically do not succeed at realizing all collective value that can be

created. This depends partly on their limited understanding of value creating potential in a negotiation. Also, a substantial proportion of negotiation dyads do not even succeed at agreeing on compatible alternatives that both prefer (e.g., Thompson and Hastie, 1990). Thus each kind of issue (distributive, compatible, integrative, etc) poses a challenge to negotiators. **I studied negotiation situations containing all three kinds of issues in paper 4.**

Besides the economic games (guessing games, dictator game, weak link games, and negotiations) I also utilized the earlier mentioned communication game with memory implications. Further below, under Research Approach, I will return to the specific situations that were studied in the present dissertation.

3.5.1 Social organization in the studies. Having acquainted ourselves briefly with the simple and designed situations (including the earlier presented communication game) that were examined in the present studies, we may consider the social organization in which they are arguably embedded. I believe that this will also show that we have investigated a context that is compatible with business, conceived, at the beginning of the essay, as involving the type of social relationships that allow explicitly acknowledged exchanges.

Principles of partial organization. In a framework including phenomena falling between formal organizations and non-organized settings, Ahrne & Brunsson (2011) proposed that such cases of partial organization might be fruitfully characterized in terms of whether/to what extent they involved explicitly decided membership, hierarchy, rules, monitoring, and sanctions. Here, organization entails a decided order, as opposed to other social orders like networks and institutions (but not necessarily distinct from markets; see Ahrne, Aspers, & Brunsson, 2011).

The five-component scheme illustrates that phenomena that seem untouched by organization might not be. For example, take the studies of the present thesis. Although they might seem removed from organizational concerns, they do involve membership (participants are exclusively recruited from the university, school, or corporation in question). There is a hierarchy, which is particularly strong for the experiments in that the experimenter is the authority figure but was also present in paper 4, whereas the corporate survey in paper 3 might have lacked such explicit hierarchical study roles. Explicit rules flow from the instructions given by the experimenter as well as by the teacher

in paper 4 but was less salient in paper 3. It is difficult to think of a setting where monitoring is more salient than a laboratory study (paper 1) but monitoring is central to the studies in all papers 1-4. Finally, explicit monetary incentives were provided in paper 1 and a grading system was used in paper 4, whereas the other studies might not have involved any decided sanctions, except for the sense of "doing well" or "doing not so well" as a participant, another form of motivation. In this scheme, then, the study in paper 1 was a formal organization, and possibly the studies in paper 4, too, whereas the studies in papers 2 and especially 3 involved only partial organization. (In fact, in this scheme, most laboratory experiments would constitute formal organizations.) In the discussion, I will revisit this observation and consider how future research could build on this insight.

We may fruitfully observe a few additional contextual aspects of the economic games: outcome focus, monetary context, and market setting. Such consideration might inform ultimate application of findings to other societal contexts.

Outcome focus. The idealization of behavior in economic games in terms of a sole focus on some all-encompassing outcomes is understandable in light of the preference model employed in micro economic analysis. But when we replace the tautological utilities (Samuelson, 1938) with substantive outcomes, like money, it becomes an open question to what extent the substantive outcomes will dictate behavior. Behavioral sciences, as well as everyday experience, provide many examples of how people are proximately affected by all kinds of features and aspects of the world around them and inside them. If we conceive of the issue broadly, organisms show not only voluntary but also involuntary responses (e.g., a knee jerk reflex), where the frequency of the latter responses does not respond to outcomes. More narrowly, tradition/custom, morality, emotions, and knowledge accessibility are behavioral determinants and yet typically not outcome-based in a proximate sense. However, the empirical strategy of testing situations where only outcomes differ could be preemptive when the outcomes are salient or there is even little else for actors to orient to. This does not invalidate usage of such situations, but they may stack the cards in favor of finding impact of outcomes on choices and against finding impact of other factors. In this perspective, examination of other kinds of factors in economic games, e.g., social construction or strategic skill in the present thesis, should provide a conservative test of the impact of these other

kinds of factors. Also, as mentioned earlier, it provides a context that is compatible with business in its focus on ends rather than means.

Ironically, non-human animals might be better fit empirically than humans to the standard economic model, possibly not only because humans are more complex (such that they rather be modeled as consisting of several agents rather than constitute one) but also because humans have their behavior under social control more than other non-eusocial social animals (e.g., Ross, 2011). For example, decisions may be taken to match social norms or appropriateness to identity/role/self (March, 1994; Weber, Kopelman, and Messick, 2004). What might be important cues?

Exchange cues. One feature that might affect behavioral norms or notions of appropriateness is money. Money is used to incentivize study participants but may crowd out other forms of motivation, as well as affect people's orientation to each other. Because the crowding out feature is well known (e.g., Deci, Koestner, & Ryan, 1999; cf. also Gneezy & Rustichini, 2000a and 2000b), let me devote the limited space to the second issue, money's impact on people's orientation to each other.

Money, as a means of exchange, might act as more than a pure incentive (see also Zelizer, 1994). Vohs et al. (2006) found that monetary contexts influence people's orientation to each other. Specifically, money is associated with an inclination toward self sufficiency (less inclination toward dependency or accepting dependents) perhaps involving also greater psychological distance (Trope & Liberman, 2003). Moreover, DeVoe & Iyengar (2010) found that allocation principles of equality versus merit were thought less fair when money rather than other resources was distributed. As I will return to in the discussion, a systematic examination of the consequences of money versus other incentivizing resources might be a valuable contribution to behavioral game theory. If Vohs, DeVoe, Iyengar are right, these effects might undermine pro-social efficiency in the paid situations in paper 1.[16]

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[16] *A form of institutional trust.* However, even though money is an exchange cue, it may also signal that the routine social interdependency is partly taken care of (such that self-sufficient orientations etc don't undermine collective outcomes of the prescribed type). There might be social interdependencies with different depth. As soon as money is in play, i.e., as soon as we use money, it might introduce a platform that ensures us that much of the difficult groundwork is taken care of, such that we can master the ensuing shallow interdependence among self-interested actors (L.R. Caporael, personal communication, 16 June, 2009). That would predict more rather than less pro-social efficiency in the economic games.

As we have noted earlier, the market exchange might be a collective configuration with special properties. If we are willing to contrast with other contexts, like political contexts, we can take account of Elster (1986) who argued that the behavior of consumers in a market is private whereas political behavior of citizens in a forum is public. In particular, the mentioned consequences of a monetary context in terms of self sufficiency, greater psychological distance, and favoring merit-based allocation principles (in accordance with market-pricing relationships) could facilitate the calculative orientation, described at the beginning of this essay as the ideal type of business (Weber; Callon & Muniesa). Markets might compel behavior more than do other collective contexts (cf. Ledyard's, 1995, analogy to ping pong balls in a physics experiment) partly because people are put in such a calculating mode.

Market settings. I should not go overboard with the interpretation of the current studies in terms of markets, however, because market contexts are often more extreme. Smith (2003; 2008) observed on the different patterns obtained in personal exchange between two anonymous individuals ("external order of social exchange") and impersonal exchange in a market setting ("extended order of markets). As summarized by Smith (2003, p. 466):

> …experimental economists have reported mixed results on rationality: people are often better (e.g., in two-person anonymous interactions), in agreement with (e.g., in flow supply and demand markets), or worse (e.g., in asset trading), in achieving gains for themselves and others than is predicted by rational analysis. Patterns in these contradictions and confirmations provide important clues to the implicit rules and norms that people may follow…

Depending on setting, then, results may differ substantially regarding realization of individual and collective interests. Smith (p. 501) suggested that markets economize on a number of intangibles like information, understanding, rationality, number of agents, and virtue (cf. Fiske, 1992, on market pricing relationships; see also Rai & Fiske, 2011).[17] In contrast,

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[17] If markets provide repeated judgments and decisions of a similar kind, they might also allow for automatization. Psychological research during the last 30-40 years has documented the existence of processes that differ in terms of factors like control, awareness, efficiency, and intentions, where those that lack all except efficiency tend toward the "automatic" but can develop from more deliberate and controlled versions through practice (e.g., Shiffrin & Schneider, 1977). The importance of this distinction is that the different kinds of processes might give rise to behaviors that are so different as if we were modeling two different kinds of actors or types.

> Reciprocity, trust, and trustworthiness are important in personal exchange where formal markets are not worth their cost (…) They are also important in contracting as not every margin of gain at the expense of other can be anticipated.

Notably, what Smith referred to as the domain of personal exchange includes the kind of aforementioned economic games used in the present study.

The observations on outcome-focused games, exchange cues, and market settings remind us about the general and obvious difficulty in extrapolating (aggregating) individual behaviors to societal outcomes, e.g., in markets. Looking back on our examples, we can see that they highlight market-related features of the economic games we utilize in papers 1, 3, and 4, though not fully, as Smith's examples show. Furthermore, the Communication Game employed in papers 1 and 2 does not involve an outcome focus, exchange cues, or a market setting, and therein complements the economic games and broadens the domain of the thesis. The connection we test, and find, in paper 1 between the communication game and trusting coordination is encouraging in that it traverses the settings, from communication in general to an economic game among a couple of a handful of people. In sum, then, it seems that the examined situations are located somewhere between one extreme of communal contexts alien to business and another extreme of purely anonymous asset markets.

Because of the varying demands depending on the social interdependence context, it is challenging for the agents to adjust, and people may vary in how well they handle the different social interdependencies. We have talked a lot about structures, but what about actors? Although I do not mean to abandon the consideration of social structures, there will now be a gestalt shift in figure and ground. The final topic of the theory overview emphasizes individual differences (papers 3 and 4), especially in social interdependence skill and their consequences (the topic of paper 4).

3.6 Agency

3.6.1 Individual differences and degrees of agency. On the one hand, people repeat their own behavior as past behavior establishes procedural memories and habits, which becomes more accessible and therefore more likely to happen. People also repeat the behavior of others because of the myriad ways (some of which were previously touched on) in which they are influenced by others. We have also discussed the collectively recognized con-

structions which may regulate social behavior. On the other hand, behavior can be described as enacted as well as enacting, a medium as well as outcome, each of which is captured in concepts like structuration (Giddens, 1984) and circumvent a simplistic distinction between agency and structure. There is nothing to rule out that the individual actors have an effect. While behavior has a tendency to repeat itself, agent factors might add explanatory power.

There are many ways in which individuals can differ. Among them, the many attempts to find consequential and global traits have typically found some (McCrae & Costa, 1999) but limited with predictive validity (though less devastatingly than classically argued by Mischel, 1968; see, e.g., Funder, 2010, for a recent overview). In the present thesis, we utilized measures of individual differences in two different ways, in paper 3 and paper 4.

Paper 3 included individual measures of culturally conditioned orientations. Although culture might be argued to be a population-level construct (Hofstede, 2006; see GLOBE debate in *Journal of International Business Studies* 2006-2010), it might be implemented in individuals, such that surveys can be utilized. One of the most heavily researched dimensions in cross-cultural research is individualism versus collectivism (Hofstede, 1980; see Brewer & Chen, 2007, for more recent conceptualizations; and Hong et al., 2000; Oyserman et al., 2008, and others regarding conceptualization in terms of temporary cultural states; see Markus & Kitayama 1991 on self concept; Triandis & Gelfand, 1998, on self concept, goals, attitudes versus norms/responsibilities, relationship versus cost/benefit; Oyserman et al., 2002, for more recent data). In Paper 3 on fairness perceptions, we administered self-reports regarding culturally conditioned orientations toward horizontal and vertical individualism/collectivism. We used these measures to predict people's fairness judgment regarding how to allocate (i.e., how equal the allocation should be of) benefits or burdens within a multinational corporation.

As I took a different tack in paper 4 and tried to identify principles that would lead to more agency in social interaction, measures of performance became relevant. Importantly, the individual differences that seem to matter the most for people's performances are abilities (e.g., Schmidt & Hunter, 1998).[18]

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[18] The scope of the present chapter does not allow much digression but we could also identify non-ability based principles that could predict agentic behavior. First, to the extent that individual actors can make a difference, it should matter whether the individuals are enterprising and attempt changes. The likelihood of such attempts should be affected by people's basic assumptions regarding the perceived structures. For example, a belief that the

If we cast the net widely in order to find individual differences that might have an impact in the context of structures, what might such differences involve? If we consider the social world, the structures that matter are social, and a critical feature should be social interdependence.

3.6.2 Social interdependence and skill in evolutionary perspective.

Compared to other (non-eusocial) animals, humans are uniquely dependent on their conspecifics. Human infants are helpless for a uniquely long time but even as adults humans are "obligately social" (Caporael, 1997). Mandatory social living entails special demands. Vast literatures describe people's ability (e.g., Onishi & Baillargeon, 2005) and inclination to make inferences about the states and traits of people around them (Heider, 1958; Kelley, 1967; Malle, 1999; Gilbert, 1998; Epley, 2010) presumably in order for them to be able to anticipate and interact successfully with other people. Human behavior is characterized by socially interdependent choices, social influence, and complex social organization. Indeed, a Machiavellian hypothesis has been proposed (Byrne & Whiten, 1988) for the dramatic increase in particular brain structures (neocortical proportion of the brain; e.g., Dunbar, 1992).

For example, for their taxonomy of interpersonal situations, Kelley et al. (2003) cited Tooby and Cosmides's (1992) argument that special adaptations for creating a map for social behavior should be equally likely as adaptations for vision or balance, and then added (my emphasis):

> *What could be more central to such a map, we submit, than understanding precisely how one is interdependent with others in the social environment?* Coping effectively with this interdependence is, after all, central to successful resolution of such adaptive concerns as mate selection, reproduction, child rearing, monitoring and besting sexual rivals, resource and food acquisition, forming and maintaining reliable alliances while fending off competitors, and protection against predators, to name some of the more significant examples. (p. 8)

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world is ultimately malleable should facilitate agency attempts over a belief that the world is ultimately fixed (e.g., Dweck and Leggett, 1988) because in the second case there is less of a point trying. (One's degree of agency could also depend on related things like one's tolerance for norm violation.) Empirical research supports this conjecture (Kray & Haselhuhn, 2007). Second, it might also be possible to anticipate agentic power in individuals by taking notice of orientations that entail more or less decision-making as part of the self-regulatory style. A prominent example might be a promotion focus versus a prevention focus (Higgins, 1997). Depending on the definition of choice, we might interpret promotion-guided behavior to involve more choice than prevention-guided behavior.

…the individual must be able to discern which situation she is in and which she is not in; must appreciate the values, norms, dispositions, and motives relevant to the existing situation; must be able to predict the likely behavior of interaction partners in this situation; must anticipate potential unfoldings of events over time; and must imagine each of these from the partner's perspective. (p. 9)

Humans' social ability or ability to strategize is remarkable, but might also vary in magnitude across individuals. **In the last paper 4 in the thesis, I try to study this based on a framework of behavior under social interdependence. The postulated social-interdependence skill (SIS; Hedberg, 2006) builds on economic games and suggests degrees of agency. Based on four fundamental components (structural understanding, dynamic mastery, behavioral flexibility, and self knowledge), SIS makes predictions of social behavior in a variety of social structures. Because knowledge is power, SIS might also index degree of agency in the company of social structures. In paper 4, I utilize economic games to measure the first two components of SIS, and then use those measures to predict performance in more free-form social interaction in negotiations.**

3.6.3 The broad societal applicability of bargaining and negotiation.

Consider three examples of agentic behavior at the top. First, even the most influential individuals in an organization will often exercise their influence through a smaller group of representatives. While agency exercised by individuals at the top of a hierarchy might be special in some ways, like most other agency it will happen in dynamic interaction with social structures, which are produced and reproduced in the act. For many decisions, formal organizations involve some form of collective decision-making, which is decision-making that is ultimately binding on the entire group (i.e., should be legitimate for all group members). According to Elster (2007), bargaining together with arguing and voting constitute the three mechanisms by which to aggregate individual policy differences in such collective decision-making.

Second, political systems like presidentialism and parliamentarism are designed such that no single actor should be able to rule autonomously (Tsebelis, 1995; for business parallels see Keeley, 1995). When several decision bodies (veto players) are crucial for change of the status quo to take place, and appointment to these bodies is nearly independent, individual agents can be expected to effect change only if they orient ably to the interdependence be-

tween the decision bodies (cf. Kingdon, 1995; Walton & McKersie, 1965; Putnam, 1988, for diplomacy parallels; Padgett & Ansell, 1993, for a historical parallel).

Third, leadership among humans might arguably involve almost any dimension of human existence. People spend much of their awake time in organizations; it is easy to envision that anything humanly possible could happen and could have to be confronted by a manager or leader. Historically, prominent perspectives on leadership have focused on the traits of leaders, their styles, typical activities (roles) and associated skills, the different demands on leaders in different situations, exchanges between leaders and followers, the deeper (or more lofty) values leaders might engage, and the importance that ethical dimensions might have for legitimacy (e.g., Eagly & Carli, 2003; Northhouse, 2003; Yukl, 1989). Classic ethnographic studies have found managers/leaders to be surprisingly caught up in communicative snippets and disjointed activities (Carlsson, 1951; Mintzberg, 1975; Kotter, 1982) rather than planning, organizing, controlling, and so on (Fayol, 1916). Other perspectives have questioned the special status of leaders and have argued that the "followers" are in power, and only allow the leader to lead for as long as they want to (Meindl, 1995), therein also emphasizing social interdependence.

A commonality among these previous instances—of leadership exchanges between followers and leaders, collective decision making in formal organizations, and the juggling of interdependent decision bodies in a power-balanced system—is that they all should place a premium on social-interdependence skill and skillful negotiation.[19]

Negotiation is not only a powerful model for understanding governance in organizations and politics, leadership, markets, and business (what more basic business activity is there than the process of arriving on the terms of a deal?). It is also a way re-connect to the four themes of the present thesis: common ground and social hope (paper 1), social interdependence skill and negotiation (paper 4), distributive fairness (paper 3), and negative discrimination (paper 2). This means that we can return to the themes in each of the papers.

In order for negotiation (in a non-trivial, human sense) to be possible, counterparts need not only to orient to each other but they also need to have

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[19] Of course, the negotiation domain has intuitive connections to markets, too. For example, a dyadic negotiation turns into an auction, the typical protocol for markets, once one or more additional buyer or seller joins the negotiation and the bidding (Raiffa, 2002).

means of communication that are commonly understood and to have hope that the exercise could amount to something. If this is capital for society building (cf. Zucker, 1986, on production of trust), how is the capital accumulated? As we have argued based on prior studies with the Communication Game, role-taking coupled with social verification might be a vehicle whereby common ground is accumulated (in the form of "shared reality"). **But is social verification more effective establishing common ground than mere collaboration? And more importantly how might social verification and mere collaboration each affect the social hope (trust) that is so essential for even giving negotiation (and other risky social interaction) a chance? These are questions asked in paper 1.**

As "negotiation" include activities like problem solving and trade, it is trivial to note that negotiation has value-creating potential. In that sense it is difficult to think of activities more worthy of attention for furthering the common good (for members of a group, coworkers in an organization, and citizens of a state or federation). As noted earlier, it is also difficult to think of any more basic activity in business than the process whereby economic agents come to agree on the terms of a deal.

What negotiation simulations show is that negotiation matters in another way too. Individuals put in the same situation, structurally, achieve very different outcomes for themselves and their counterparts. The range of outcomes is often staggering. Outcomes do not seem to be dictated by optimization of identical functions under constraints (Mas-Colell, Whinston, and Green, 1995). Indeed, recent research supports the popular intuition that Who negotiates matters too. A substantial proportion of the outcome variation appears to be connected to the identity of the negotiator (Elfenbein et al., 2008). There is only a snag. The individual features responsible for these differences are not known. Despite decades of research, the established knowledge on this topic is limited to less than a handful of variables that are either obvious (IQ) and/or unreliably related (Big 5 traits) with little predictive power. **As mentioned, I propose a framework for individual differences in social interdependence skill (paper 4). Despite the image of "dealers and wheelers" that such concepts might connote, the empirical tests in paper 4 of SIS suggest that this skill is predictive NOT of competitive negotiation but rather of the creation aspect of negotiation. We might therein have obtained a lead on how to identify individuals who have the potential to contribute to the common good that may benefit us all.**

Notably the common good may, but need not, benefit us all. However much of a "win-win" that a negotiation might appear to be, at some point all that newly created value, which the negotiators have produced, will need to be divided in some way. Will I get more or less of it? Distributive concerns are an important part of any negotiation. **In paper 3 we ask: When resources are to be divided in an organization, what principle of distribution do people find to be fair? Should everyone receive equal amounts? Should we try to make the amounts proportional to some measure of the individuals' performance? Should we rather make the amounts proportional to some measure of the individuals' need? Or should we base the amounts on people's prior compensation sizes so that everyone gets equally much more in terms of percent? Or, finally, should we base it on corporate hierarchy such that those at the top get more than those at the bottom? People's intuitions about this might differ depending on whether there is a gain to be divided, as just mentioned, or a loss where people need to contribute to cover the deficit. Perhaps most interestingly, the corporation in which we examined this question, Citibank, has branches in many countries. How might the answers to the above questions be affected by different cultures? And given that choice of distribution principles ultimately affects income distribution, how are the answers regarding fairness influenced by the existing economic inequality of the society in which the respondent lives?**

The fairness study presumes what everyone knows: that people are often not treated equally. People typically find some such differences to be legitimate, for example, when they are based on desert. What might be less acceptable, at least in principle, is negative discrimination against individuals based on their social category membership like ethnicity or gender. How might we thus orient differently to different people? **In study 2, I ask: What might be a basic discrimination mechanism (which incidentally could also provide a possible explanation for different negotiation inclinations of men and women)? I propose a novel form of discrimination mechanism that operates by means of the memory trace that people may leave in those they interact with. The subtlety of the mechanism could make most people into innocent perpetrators of negative discrimination against women.**

Having arrived at the end of the theoretical overview, let us now consider the specific questions addressed in the four papers. In sum they address social

verification and negative discrimination in distributive and productive human interaction. What might be the distinct effects of shared understanding, perceived incompetence, fairness concerns, and strategic skill?

4. Purposes of Papers (1-4)

I. Social institutions are basic elements in social science, like structures they might constitute even a "founding or epistemic metaphor of social scientific […] discourse" (Sewell, 1992). How might one account for their emergence? What role might role taking and social verification, and its possible establishment of shared representations (shared reality), play?

- Does role-taking coupled with social verification go beyond mere collaborative success in providing (1) shared beliefs and (2) trust effects? Also, (3) what might be trust-related conceptualizations which are more unique consequences of social verification (and more consequential) than self-reported trust in another person's judgment?

II. What might be basic and yet un-researched ways in which women are discriminated against? Specifically, are there differences between the epistemic authority of women versus men? Does epistemic authority depend on topic domain? Through what responses might such differences manifest themselves?

- To what extent, and when, can negative gender-based discrimination be detected in individuals' (senders') memory traces and liking attitudes following minimal (mainly one-way) communication?

III. Fairness is a pervasive standard in human affairs. What are some determinants of people's fairness judgments?

- When profits and losses are to be distributed among people in a multi-national corporation, which methods/principles of distribution are perceived to be relatively fair? How are the allocators' perceptions affected by their cultural orientations and by the economic inequality of the society in which they operate?

IV. Although social structures/institutions are pervasive, they are not dictatorial, and they may partly be subject to agency. At the same time humans are "obligately socially interdependent" (Caporael, 1997). Are there special ways in which people differ; specifically in how skillfully

they navigate social interdependencies? Or are we for such questions (at best) relegated to general measures like IQ and broad personality traits?

- How might a theoretical framework for social interdependence skill look like? As one type of operationalization, are individual differences in guessing-game performance predictive in negotiations? (And how might task format matter for people's understanding and the measure's predictive power?)

One common purpose of the papers is thus to identify features in social behavior and interaction that ultimately may enable value enhancing interactions and negotiations that can further the common good in human society. Although this clearly includes business, I shall return to implications that are specific to business.

5. Research Approach

5.1 Ontology

Quantitative empirical research often ignores discussing its philosophical foundations, but may do so at its peril.

A classical case was the behaviorism movement in psychology (see Heidbreder, 1933). Behaviorists took pride in contrasting themselves with the intricate philosophical concerns of the then competing Gestalt school. Because of the behaviorists' strict (and presumably strong) common sense approach aiming for objective knowledge, they did not have to get lost in philosophical speculation, it was thought. But their apparently scientific rather than speculative approach also made the behaviorists vulnerable to unexamined assumptions. Watson's (1913) commitment to the scientific approach made him rule out all accounts that involved anything that was not materialist, but in so doing he also made a pre-scientific distinction regarding what is real (in his case, physical matter) and what is not (mind), which ultimately made behaviorism irrelevant to psychology, as researchers in psychology came to recognize the epistemological behaviorism of relying on only publically available data but did not confuse this methodological rigor with ontological behaviorism which ruled out the existence of anything not directly observable.

The hasty assumption of Watson, in combination with other developments (e.g., Chomsky's critique in 1959 of Skinner), ushered in the cognitive revolution in psychology (e.g., Miller, Galanter, & Pribram, 1960; Neisser,

1967). The irony is that cognitive psychology—which eventually became a mainstream perspective which now also need not consider its philosophy very much as it is taken for granted—could be accused of falling prey to similar ontological commitments. What I mean here is the assumption that cognitive processes take place only within the skull or skin. This time the pre-scientific distinction is that processes and representations beneath the skin might partake in cognition, whereas processes and events outside might not. This could be a reason for why social psychology has had such a hard time taking the situation seriously even though many prominent observers seem to regard the power of the situation as the raison d'être of social psychology (e.g., Ross, & Nisbett, 1991; Markus, 2004).[20]

In this introductory chapter, I (perhaps along with my socio-technical staff of actants) try to hold off on the assumption of solely internal cognition.

In short, it is useful to articulate one's ontology even if it seems straightforward. For these reasons I will say something about the starting points for the present Studies.

I do not believe that everything is a dream. Nor that I (whatever "I" mean) am alone. That is to say, I believe there is something out there. Furthermore, I believe that I am at least somewhat epistemologically empowered, such that I might have a chance to learn about that something out there.

I cannot see why the existence of a world "out there" need rule out ontological creation—for example, by means of inventive experiments that put people in situations that did not previously exist (say, treating Stanley Milgram's studies like design science).

Reality and the Social Construction of X. One of the phenomena for which an individual level of analysis might not do is social construction. While I do not believe that all is a dream, I do believe that some of our perceptions are socially engendered. Of course, there is a difference between the notion that our representations are socially constructed and the notion that what is represented, "out there," is socially constructed. The present work is predicated on the view (e.g., Searle, 2010) that there are "brute facts" out there, which do not depend on observers for their existence, even though there are also things out there that are dependent on observers for their existence (e.g., money). Both these facts/things are possible to study scientifically with methods that are

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[20] People's concern for their psychological connectedness (perceived similarity between two current views of oneself, now vs. in the future) might be another reason for the resistance (Bartels & Rips, 2010; Montgomery, Hedberg, & Montgomery, 2011).

limited to publically available data. The focus of the studies on social construction (papers 1 and 2) involve social construction of representations/beliefs. One of the contributions from the present thesis might be the way in which it provides an explicit and operationalized account of measured social constructions, including measured antecedents and consequences.

5.2 Knowledge interests

The research questions in the present Studies are all positive. (Even paper 3 on fairness perceptions involves positive research on people's judgments, which happen to regard normative issues.) In terms of Habermas's knowledge interests (1971), the present Studies are motivated primarily by technical interests in prediction and control, although understanding and emancipation are certainly important, valuable, and welcome.

Science and Business Administration. Good theory and useful technology are two important aims of science. First, the fruit of research is theory, and theory stimulates new questions. But in order for the theories to gain traction, they need to be tested; we need to stick out our necks and take the risk that our dreamy thoughts are incorrect. Also, like the Lewinian saying goes, nothing is more practical. Which raises the second aim. Ultimately can we build a replica of that we are studying? Can we build a human? Can we build an organization? That is the technical knowledge interest (dream) in the tradition of which this thesis is written.

Business studies/Business Administration has its own concerns, traditions, and priorities. For many reasons (like phenomena involving complex organization and responsive subjects of investigation), business studies pose special challenges, which may make the classical scientific aim of gradual approximations to truth harder to come by.[21] While business research might not

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[21] Of course, organization is a basic figure of thought. But organized phenomena conflict with atomism as a scientific approach. Although its approach is not monolithic, science typically proceeds by dividing up phenomena in their components and then *adding* those components back together when accounting for the entirety. Researchers operating at several levels of analysis have recognized the possibility that atomism is fundamentally incomplete a research approach. In psychology, organization approaches have had currency in gestalt approaches to perception (though as wholes rather than as organizations of parts) (or through interaction effects, though rarely of a very high order). In research devoted to neural matter, people recognize the functional organization of the brain at several levels of analysis (e.g., Churchland & Sejnowski, 1992; Shepherd, 1998). Closer to home for the typical reader of the thesis, social organization poses a defining challenge for macroscopic social sciences like sociology and economics. A difficulty with organization is that it may

be empirical in the committed sense of the natural sciences, it is often supposed that it has to be able to answer the call of relevance (ecological validity) to business. For the same reason—that answers are demanded—it would be easy to see why business studies could be susceptible to conclusions that are broadcasted despite poor empirical grounding, a sign of which might be the priority placed on trendiness (cf. Abrahamson, 1996) and probably exists to various degrees in all scientific disciplines. One way to mitigate the risk that demand for scientific answers force the research community to produce findings with poor grounding is to allow for the possibility that business research can be valuable even in cases where it does not promise immediate recipes for pressing corporate concerns.

Why did I choose to do quantitative studies in artificially structured situations? All Studies in the thesis are empirical but none is from the field; two studies are experiments and two Studies are observational studies; all are examining designed situations. I could have examined phenomena happening further outside of my control; so why didn't I? The designed situations in the present thesis allowed simplification, which enables interpretation of the data. Most importantly, they allow replication. Whatever we find, we can test again. Like J. S. Mill argued (1865, according to Hochberg, 1998, p. 285), our perception that something is real "rests on the permanent possibility of obtaining further sensations from it." Empirical effects that are replicable appear to us to be real. What more can one hope for?

5.3 Methods

All studies in the thesis collect data from individuals, but also involve a supra-individual level of analysis (e.g. in papers 1-4, respectively, resulting overlapping memory representations, resulting gender based patterns, explanatory Gini coefficients for income inequality, and resulting joint outcomes in a negotiation), and paper 4 explicitly models individual and supra-individual levels (dyadic level) separately for both the explanatory and the dependent variables.

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undermine comparability. To develop general principles we need to find comparable cases as the domain of our principles. But if everything is organized perhaps everything is unique. For example, social collectives even as small as work groups can vary so extensively that it is hard to find comparable groups on which to draw conclusions/replications (Hackman & Katz, 2010). If entities, such as a work group, cannot be well defined, it is difficult to identify the essential conditions needed for replication of obtained results, such that reliable principles can be accumulated.

Overall the papers in the present thesis consist of two experimental studies (papers 1 and 2) and two sets of observational studies (papers 3 and 4). In one of the studies (paper 1) we used the most common participant population of US undergraduates (cf. Henrich, Heine, and Norenzayan, 2010) but we mostly (for all other studies) collected data from other groups like business executives, retail bank employees, high-school students, and Swedish undergraduates; and the participants came from Sweden, Russia, and the U.S., and for the bank employees also from Brazil, Argentina, Mexico, Australia, Singapore, Taiwan, and the Philippines. Except for the study on gender-based discrimination (paper 2), all papers involved situations with stated economic consequences, and there were actual material payoffs in the first paper on trusting coordination. Moreover, the situations with real or hypothetical money involved creating and distributing, or only distributing resources, with or without communication. Finally, papers 1 (communication game and economic games) and 4 (economic games and negotiation) each involved two different situations, whereas papers 2 (communication game) and 3 (distribution of a gain or a loss) involved only one situation.

- Non-economic game kinds of situations
    - The communication game (papers 1 and 2) involved performance rather than choices and explicit payoffs (although the identification outcome in the social-verification conditions corresponds to coordinating on the same true answer, and although the sender as well as receiver can earn success or failure).
    - The collaboration condition in paper 1 again involved performance, and here the success/failure outcomes that both parties are facing in conjunction are clear.
- Economic game situations with perfect information and without communication
    - Coalition is not a given
        - Coordination games with multiple equilibria (paper 1) with material payoffs
        - Iteratively dominance solvable games (paper 4) with public recognition as payoff
    - Coalition is a given
        - Paper 3 about fairness ratings in hypothetical constant-sum scenarios (involving +/- outcome domains)

- Economic game situations with communication and imperfect information (paper 4)
    - Variable sum (compatible and integrative issues) versus constant sum (distributive issues) payoffs in terms of public recognition

Collectively the measures cover the classical triad of cognitive, affective and behavioral aspects, though there is an emphasis on behavioral measures: recall memory; liking (ratings); messages, individual decisions, social decisions (including outcompeting others, donating, and coordinating trustingly), and agreement to a deal including its prior communicative process.

Reliability. Because I/we used single-item measures on a few occasions in the papers, I should provide some consideration of measurement reliability.[22]

- Paper 1 contained a few single-item constructs: on mood, sufficiency of information given, and epistemic trust. However, each of these were used in the same way as previous research that we wanted to make contact with (e.g., Echterhoff et al., 2005) and were only included to replicate that research. In contrast, for the main measures of this Study, the inter-rater reliability of the texts (message and recall) was high, and we used three economic games as an index to measure trusting coordination.
- In paper 2 on gender-based discrimination, the main measures were the open-ended texts produced by the participants (message and recall) and a single-item liking rating. It would have been ideal to have several items of liking but that measure was an addition to the main memory measure and thus not prioritized. On the other hand, it was more serious that the coded message and recall texts showed low inter-rater reliability. Although not a perfect solution, this was handled by using a larger number of raters than usual. Guided by the Spearman-Brown prophecy I thereby achieved acceptable levels of reliability for their average ratings (.85 and .78 in terms of Pearson correlation), which were used in the subsequent analyses.
- In paper 3, each of the four scales of culturally conditioned orientations toward horizontal and vertical individualism and collectivism (Singelis et al., 1995) exhibited acceptable homogeneity (Cronbach's α). Also, we im-

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[22] I/We did not try to calculate the reliability of all measures, but only those measures that were based on manual coding (inter-rater reliability) or scales (homogeneity). In hindsight this could be a shortcoming and might be added in future submissions if space allows.

proved on many earlier studies on fairness ratings of distribution principles by constructing distribution indices that were based on five ratings.

- In paper 4, the first study contained a single-item measure of the main predictor, the naturalistic guessing game, whereas the second study utilized two measures of (another) guessing game, which might have been one reason the effects were stronger in the second study. Each of the negotiation outcome components in paper 4 (distributive, integrative, and compatible) was based on several issues.

Validity. The applicability of our findings to particular business contexts could suffer compared to studies that examine the particular business context directly, but generalizability does not necessarily suffer, as we are equally out of our depth every time we want to generalize, whatever the method that originally led us to some result. Except when extra-laboratory studies share specific features with the context to which we hope to generalize, it is not obvious why extra-laboratory studies per se would allow easier translation to a different "real-world" business context. As mentioned earlier, one of the advantages of experimentation is that we can study that which is otherwise not (Mook, 1983). From this perspective we might actively aim for externally invalid studies. (For example, we may be interested in the existence of an effect rather than a pronouncement on its generality. Is X a possibility?) [23] In any case, simple, manufactured situations allow good monitoring and control over the involved variables such that the internal validity can be high.[24]

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[23] Why did we deceive our participants in the experimental studies (papers 1 and 2)? There are many reasons against deception (Hertwig & Ortmann, 2001). For example, if participants are routinely deceived they may become suspicious and incredulous even at the point of entering new experiments, thereby "contaminating" the subject pool and undermining future research. On the other hand, it is often difficult to arrange the desired experimental condition by letting nature run its course. Also, by avoiding that participants realize what is being studied, it might often also be possible to circumvent demand-induced effects (Levitt & List, 2007, p. 159). Sometimes this is possible to achieve by not telling the entire truth.

[24] Conducting truly representative research would be very demanding. It is an improvement to sample external stimuli in addition to participants. However, behavior depends not only on participant population and external stimuli, but also on internal state. As one case, research on belongingness (Thorndike, 1931) and behavior systems (Domjan, 1998; Timberlake et al. 1989) in animal behavior finds instinctive drift where, dependent on the animal's internal state, some stimulus-response associations are easier than others to reinforce and may emerge even when competing responses are reinforced. For example, depending on whether the feeding system is activated in hamsters, Shettleworth (1975) found that only feeding-appropriate responses would follow reinforcement. A truly representative design samples not only representative participants or representative external stimuli but also pro-

More generally, while there are several aspects of validity (see also Messick, 1995, for a comprehensive view), a nested or hierarchical nature to these aspects could be defended. In such a hierarchy of validities, external validity could be argued to presume internal validity; because without a clear grasp of the X's affecting the Y's, there is nothing to generalize about. Indeed, if there is a weakness to the present studies in this regard it might be that internal validity in turn presumes construct validity and conceptual clarity regarding the involved models, which could be improved in the present papers. For example, in none of the Studies have I so far constructed formal models of the examined phenomena. The reason is that I have not found that the complexity requires, or that the regularity of accumulated data warrants, formal models.[25] Nonetheless such modeling could have unforeseen benefits, for example, in terms of greater understanding of the implied theory.

That being said, there are obvious limitations for what conclusions we may derive from these studies. Their simplicity provides some transparence for interpretation and understanding of micro-mechanisms, but it is entirely unclear if and to what extent the involved mechanisms will play out straightforwardly on a more macroscopic level. We provide some discussion of this in, e.g., paper 1 and paper 4.

6. Summaries of Papers (1-4) and Conclusions

The present thesis examines collaborative decision-making, trust, fairness, and communicative inclusion/exclusion in structured situations with shared beliefs.

I. Social institutions are basic elements in social science. Like social structures they might constitute even a "founding or epistemic metaphor of social scientific […] discourse" (Sewell, 1992). How might one account for their emergence? What role might role taking and social verification,

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vides a representative sample of activated behavior systems. In humans, these are called motivational states. For example, we might want to make sure that we have representative samples of people in promotion states and prevention states (Higgins, 1997) among our participants. Moreover, we should also provide the representative crossings, so that particular external stimuli are provided to particular people in particular motivational states.

[25] However, as a hypothesis from the psychology of science: you may be affected by what you consume. A focus on model clarity could lead to a biased view of collected and potential data, i.e., too much attention paid to particular models makes the world look like the model.

and its possible establishment of shared representations (shared reality), play?

    a. Does role-taking coupled with social verification go beyond mere collaborative success in providing (1) shared beliefs and (2) trust effects? Also, (3) what might be trust-related conceptualizations which are more unique consequences of social verification (and more consequential) than self-reported trust in another person's judgment?

We conducted an experiment where messages by participants in social verification conditions either were verified or falsified by a recipient, whereas descriptions by participants in mere collaboration conditions either succeeded or failed in terms of accuracy. Subsequently, all participants made choices for real money where their outcomes were mutually dependent on the choices of other people.

We found that message role taking + social verification not only established shared representations and (stated) epistemic trust but that it also enables (revealed) trusting coordination, beyond the effects of mere collaboration. We suggest that the effects collectively constitute a mechanism behind the emergence of social institutions.

II.   What might be basic and yet un-researched ways in which women are discriminated against? Specifically, are there differences between the epistemic authority of women versus men? Does epistemic authority depend on topic domain? Through what responses might such differences manifest themselves?

    a. To what extent, and when, can negative gender-based discrimination be detected in individuals' (senders') memory traces and liking attitudes following minimal (mainly one-way) communication?

In an experiment like in Paper 1, participants wrote messages to either a female or male recipient. Upon receiving verification, participants recalled what they could remember about the topic that they had written about (as in in Paper 1) as well as stated their liking of the topic.

Females were systematically discriminated against in that they had less impact than males on people's enduring memories [shared beliefs] after social verification, whereas a measure that is subject to strategic considerations showed domain-specific effects for both males and females.

This might be a cognitive mechanism constituting gender-based negative discrimination.

III. Fairness is a pervasive standard in human affairs. What are some determinants of people's fairness judgments?

    a. When profits and losses are to be distributed among people in a multi-national corporation, which methods/principles of distribution are perceived to be relatively fair? How are the allocators' perceptions affected by their cultural orientations and by the economic inequality of the society in which they operate?

Employees at Citibank offices in eight countries evaluated hypothetical scenarios where either a surplus or deficit for a company unit was to be divided among the employees in this unit. Employees rated how fair they perceived that using five distribution principles (merit, equality, need, proportionality, and hierarchy) would be.

Fairness levels were affected by whether a gain or a loss was involved in that distribution of losses was generally perceived as less fair than distribution of gains. Respondents from more equal societies provided lower fairness ratings, and in particular relatively lower ratings (than respondents from other countries) for rules that lead to more equal distributions. Finally, collectivism (especially horizontal collectivism) made people more fairness-appreciative of principles that counteract inequality.

IV. Although social structures/institutions are pervasive, they are not dictatorial, and they may partly be subject to agency. At the same time humans are "obligately socially interdependent" (Caporael, 1997). Are there special ways in which people differ; specifically in how skillfully they navigate social interdependencies? Or are we for such questions (at best) relegated to general measures like general mental ability and broad personality traits?

    a. How might a theoretical framework for social interdependence skill look like? As one type of operationalization, are individual differences in guessing-game performance predictive in negotiations? (And how might task format matter for people's understanding and the measure's predictive power?)

In two studies, I measured social interdependence skill (SIS) with economic guessing games and predicted negotiation outcomes, which were

measured in a standard negotiation situation (New Recruit; Neale, 1997).

How proficiently do people handle social interdependency structures? I provided a theoretical framework, and showed impact of the SIS components (also if controlling for general mental ability) on individual outcomes in both Studies, as well as in Study 2 on value creation which benefited both ego and alter in a negotiation.

Human interactions may be characterized by more or less trust, oppression, fairness, and skill. In sum, the four studies have collectively obtained empirical results on the emergence of social structures, with consequences of social processes for trusting coordination, negative discrimination, and perceived fairness, and have examined an important set of social skills to manage the social maze successfully. While the individual Studies addressed distinct processes and phenomena, collectively they have examined and corroborated novel effects of several determinants (social constructions, societal inequality, and socially strategic thinking) and proposed a social-construction mechanism (role-taking + social verification) in social interactions, with impact on gender groups.

The four studies traversed levels of analysis, up or down.

Micro to macro levels of analysis. In paper 1, the investigated shared beliefs and trusting coordination happened on a dyadic level, and we discussed an experimental social science grounded in processes involving individuals but with application to societal processes at higher levels of analysis. The agency analyses in paper 4 included models incorporating two levels of analysis (individual and dyadic level) as well as models at only the dyadic level (with further speculation about affected larger-scale supra-individual processes like social dilemmas and market bubbles). Thus, the examined variables instantiated in individuals, e.g., memories (1 and 2) and strategic skill (4), appeared as plausible micro foundations for societal phenomena at higher levels of analysis.

Macro toward micro levels of analysis. We saw impact of macro social structures in papers 2 and 3. In paper 2 the gender of one's counterpart, conceivably a macro variable if it has force by virtue of being a social category, influenced

people's likelihood of forming shared beliefs. In paper 3 the country Gini coefficient for income influenced the individuals' fairness judgments.[26]

7. Discussion of Implications

There has not been one research frontier, or one big theory, that I have addressed in this introductory chapter. The main theme that I have raised in this Introduction is the emergence of shared beliefs, whether they be internal or external, and whether they be acquired or constructed. From the basis of at least some minimal shared understanding, people go down interactive trajectories characterized by variables like trust, fairness, and discrimination. If papers 1-3 on these topics involved structured behavior, then finally I took the opposite tack and examined individual differences and agency by means of using measures of strategic skill (SIS) in paper 4.

The papers might be said to take a social-cognitive perspective, though less so in paper 3 in fairness. The establishment of shared beliefs in paper 1 (and 2) is arguably foundational for the other papers, and shared beliefs therefore constitute a main topic in the present Introduction. Among overlapping themes in the papers, we find social inequality in paper 2 on discrimination and in paper 3 on fairness, and disproportional social influence in paper 2 on discrimination and in paper 4 on strategic skill.

Here I will discuss empirical, theoretical, and methodological contributions. I will also mention some limitations. Finally I will propose future research that could contribute useful results to the present discussions, as well as suggest some practical business implications.

7.1 Theoretical, methodological, and empirical contributions

Novel concepts and frameworks. Each of the papers made a theoretical contribution.

In the first paper we investigated the emergence of shared beliefs and its effects on subsequent social interaction. Such "shared reality" following role-taking and social verification is foundational for much social regulation (Har-

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[26] Though, if we take fairness to be a consensual standard at the group level, then the effect of Gini remains on a collective level (and instead it could be the individual variables of cultural orientation that affects more macro-level variables, unless also cultural orientation is conceived as transcending individual measures in which all are supra-level constructs).

din & Higgins, 1996). While researchers have found that the establishment of shared beliefs may be associated with enhanced trust in one another's judgment (epistemic trust; Echterhoff et al., 2005), we hypothesized that the establishment of shared beliefs is the first stage in a coordination process, which thus begins with internal states and ultimately manifests also in behavioral coordination.[27]

Many social situations are such that desirable outcomes can be reached only when actors coordinate successfully with each other. For example, coordination is a fundamental problem to solve in formal organizations (e.g., Jaffee, 2001; Milgrom & Roberts, 1992). More generally, because coordination situations involve social interdependence, people may or may not choose to enter into them and thus make themselves dependent on others. Although potentially profitable, being dependent on others is risky; hence we baptized this choice one of trusting coordination. Informed by prior research on interpersonal trust (e.g., Cox, 2004; Ashraf, Bohnet, & Piankov, 2006), which has documented contamination by altruistic tendencies in trust measures, we defined the concept of trusting coordination as separate from pro-social concerns. As we note in paper 1, trusting coordination might usefully capture important real-world phenomena, like the acceptance of intrinsically worthless money or coordination on a leader person, both of which phenomena may enhance the collective good among actors even if they do not value each others' well-being. Thus, paper 1 introduced a new concept, trusting coordination, which involves the risky social coordination in weak link situations absent altruistic concerns.

In paper 2, I proposed a novel type of gender-based discrimination. My starting point was the observation that, although women appear to be discriminated against in many domains, existing research suggests that they are liked more than men are, such that other bases for discrimination are likely. One alternative basis for discrimination against women might be that they are often perceived to be less competent. I reasoned that this could have relevance for the social construction processes that people engage in to establish understanding they cannot derive from their own immediate experiences. In particular, I proposed that gender-based discrimination happens by social memory trace in that people (men and women) are less willing to rely on women for the buildup of their understanding of the world, the result of

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[27] Notably the first stage in paper 1 not only involves coordinated representations but also a combinatory effort of role-taking (person 1) and verification (person 2).

which we might refer to as social reality. I call this discrimination by memory trace.

Much past research about stereotyping, prejudice, and discrimination is grounded in a conception of memory/knowledge structures that may guide automatic or controlled responses to socially categorized actors (e.g., Devine, 1989; Greenwald et al., 2002). What is special about discrimination by memory trace is thus not that it involves available and accessible knowledge structures, but that the discrimination varies in the extent to which information is acquired (becomes available and remains somewhat accessible).

An interesting question that a novel type of discrimination raises is whether it is involved in the same functions as other discrimination types or whether it has other functions too. It will also be important to learn to what extent it is limited to discrimination against women in the role of receivers in dyadic exchanges or if it pertains to larger group discussions, where information management has been found to be a problem (Wittenbaum et al., 2004).

The third paper on fairness perceptions is probably the weakest theoretically. A minor contribution might be the distribution principle of proportionality. This is the notion that a benefit or burden should be distributed in proportion to existing compensation levels, such that the people with the higher salaries should receive proportionally larger shares of a surplus (and vice versa should have to contribute proportionally larger shares when there is a deficit to cover). In practice this might be the most common principle but the authors of paper 3 are unaware of scholarly examination. Unsurprisingly, participants find this principle to be relatively fair, as it is overall ranked only after merit-based allocation.

A somewhat more important innovation in paper 3 is the way we combine the ratings for the various allocation principles. The resulting distribution indices could be viewed as a methodological innovation just as much as a theoretical one, but I discuss it here as it has theoretical implications. In particular, paper 3 examines the impact of various determinants on people's fairness ratings of five allocation principles. We construct the distribution indices by combining the ratings of the five allocation principles. This is a methodological improvement in that we thereby increase statistical power. More importantly, it represents an implied interpretation of what's at stake in these fairness judgments. This is because we combine the ratings for the allocation principles based on what the consequences are for inequality. Thus we assume crudely that what people are concerned with when they evaluate an allocation

principle is whether it will lead to more or less inequality. For example, distributing a surplus based on need is likely to decrease inequality whereas distributing the surplus based on hierarchy is likely to maintain or increase the inequality. By adding the ratings for allocation principles that lead to less inequality and subtracting the ratings to allocation principles that lead to maintained or more inequality, we construct an index which increases as people favor (fairnesswise) principles that lead to less inequality and decreases as people favor (fairnesswise) principles that lead to maintained or more inequality. Thus, we obtain a measure of people's general leaning in terms of whether equality-producing or inequality-producing allocation principles are perceived to be relatively fairer. In other words, distribution indices are used to draw out the inequality effect of various principles and test impact of this aspect on people's fairness intuitions.

We may also note that thus collapsing the data for the various allocation principles based on their consequences for inequality also turns the rating into a purely distributive matter. Individual allocation principles might contain procedural aspects even when a benefit or a burden is to be divided, but once we collapse the principles into a distribution index based on their consequences for inequality, then the rating is only about distributive fairness.

In paper 4 the main theoretical contribution is the framework for social interdependence skill (SIS). Taking social interdependence to be a *sine qua non* in society, I hypothesized that people would vary on how well they handle social interdependence per se. To analyze this skill, I proposed four relevant processes: (1) noticing the structure of social interdependence situations, (2) anticipating others' likely responses to such situations and generating one's own best reply, (3) flexibly deciding whether or not to maximize personal outcome within the short-term situation at hand, and (4) realistically assessing one's own sophistication in relation to other relevant actors.

Economic games, including structured negotiations, capture many situations involving social interdependency. In paper 4, I observe that existing individual differences that might predict negotiation outcomes could be organized in terms of the SIS framework.

Aside from the operationalization of processes 1 and 2 in paper 4, SIS is currently a generic shell to be fleshed out with empirical findings. SIS appears to have a positive correlation to general mental ability but is distinct from it. An interesting relation might obtain to other skills that seem distinct from GMA, e.g., the various forms of rationality according to Stanovich (2009). More generally, the SIS framework could be related to overriding responses

that are related also to cognitive impulsivity (Frederick, 2006), delay of gratification and other temporal dilemmas (Metcalfe & Mischel, 1999; Frederick et al., 2002), and social dilemmas (Olson, 1965; Hardin, 1968).

Methodological contributions. As mentioned earlier, the concept of social construction has typically been used to highlight contingency; that is to say, that beliefs or things need not be the way they are, and that the way they are are due to social processes of some kind. Such processes have been contrasted with scientific approaches that aim to discover the nature of various phenomena. In papers 1 and 2, we have made contact with the discourses on social construction while conducting experimental studies. By conceiving of the communication game and the resulting shared reality in terms of social construction, the apparent opposition between experimental methods and social construction processes is dissolved. Also, it enabled us to study causal effects of social construction processes.

I have noted earlier that the distribution indices in paper 3 could be viewed as either a theoretical or a methodological contribution. Here I can add a methodological advance. By collapsing across the various allocation principles, the distribution indices represent a common metric for allocation principles: their impact on the inequality of the system in which they are used. Because the distribution indices thus may potentially translate data on any allocation principle into this single dimension, they should also facilitate comparison. For example, distribution indices should facilitate meta-analyses if we thereby can see past the particular allocation principles and focus on their consequences for inequality. Thus, by combining the ratings for several fairness principles, based on their effects on inequality, we constructed a tool that is grounded in the underlying concern of distributive fairness (inequality outcomes), provides more statistical power than individual components, and can bridge empirical studies that utilized different fairness principles by focusing on their inequality effects.

In paper 4, two methodological contributions were made. First, while a large literature has usually measured absolute levels of choice in the beauty contest as strategic sophistication, I defined it in terms of the actual competition; i.e., absolute linear distance to the winning number, corresponding to the competition seen from the perspective of the participants. In this way, sophistication requires also that one can predict where a particular group will end up, and best respond to that (SIS components 1 and 2). This is important given that it might be irrational to respond rationally in an irrational world.

Second, paper 4 contributed a novel, naturalistic version of the guessing game (Hedberg & Gabrielsson, 2009), which seems to be more intuitive for lay people. The motivation was the observation that economic games are often presented so that they are difficult to understand even when they depict familiar situations. Because SIS is designed to capture strategic thinking, rather than understanding of complicated representations, the naturalistic game was constructed to be easier to understand for lay people.

Empirical findings that go beyond the obvious. It is desirable for empirical research that results are somewhat surprising, as we want research to be informative. I believe each of the present four studies provides evidence of non-obvious effects that matter for social interactions and broader societal issues.

That effects are surprising may not be apparent in hindsight (Fischhoff, 1975). But such hindsight bias can be addressed. Because I repeatedly encountered a hindsight bias particularly for the results of the fairness study (paper 3), I began asking people for their predictions in the setting before I told them the result. Plainly, people were surprised by these results; when asked for the direction between societal inequality and fairness ratings, people overwhelmingly (17 out of 20) predicted, often with great confidence, that societal inequality would be related to fairness ratings in the opposite direction (high inequality associated with fairness endorsement of rules that would maintain the inequality) to the actual results (high inequality associated with endorsement of rules that would counteract the inequality). One business historian predicted the correct direction, and two people were uncertain.

I believe it is clearer that the other studies contained non-obvious results. In paper 1 why should subsequent trusting coordination be enhanced more by establishment of a shared representation than by other successful collaboration? In paper 2 why should women, in the role of receivers of communications, be discriminated by memory trace? And after 50 years of mostly unsuccessful attempts to find non-standard predictors of negotiation outcomes, why should a measure of social interdependence skill in paper 4 predict people's negotiation outcomes?

7.2 Some limitations

Few studies on each topic and possible context sensitivity. When carrying out a set of studies, there is a choice in terms of variation versus accumulation. In this dissertation I went for variety, and spent only one study or a couple of studies

on each topic. A downside of this choice is that the empirical findings are less definite than they otherwise could be. Furthermore, because I have carried out several of the studies on a shoe string, for example while I was teaching (paper 4) or while visiting high schools (paper 2), conditions were sometimes noisy, and it will be important to continue related studies to replicate effects and identify boundary conditions.

To develop a better understanding of the involved phenomena, the study contexts should be examined further in the future. In the theoretical overview, I noted several features (beyond those manipulated or explicitly hypothesized to matter in the Studies) that could matter, for example, business and market settings including outcome focus and monetary context. Variation on these features should be informative for a deeper understanding of boundary conditions and robustness of the obtained effects. For example, if behavioral game theory, which typically relies on monetary rewards, is systematically skewed in comparison to situations incentivized through other means, then that would certainly be important to know— both because it would call for interesting exploration of different behavioral patterns with other resources in play and because behavioral game theory findings are increasingly often used to inform important practices.

I have maintained that carrying out studies in business contexts is no guarantee that they will apply better than lab studies to business contexts other than the studied context. Nonetheless, adding to the existing studies (in simple environments) studies in more naturalistic settings could form a combination which might share features with many other real-world phenomena to which they as a combination might then generalize more realistically.

As noted earlier even these simple studies in artificial/designed situations involve considerable social organization, which may approach formal organizations according to the definition of Ahrne & Brunsson (2011). As we have observed, indeed most experimental studies with humans could thus be characterized as formal organizations. If organization of the examined phenomena is emphasized, difficulty of generalization is emphasized. On the other hand, the often successful history of accumulative research on individuals points to the possibility of extracting general principles from human experimentation. Most of all, the extent to which most of our hypotheses were supported in the present Studies strongly suggests to me that the proposed principles had something to do with our findings and can have applicability to different domains for as long as the applications remain faithful to those same principles.

7.3 Some promising research paradigms

Let me finally say a few words about some promising methods and research paradigms. We can observe one development already undertaken in the present thesis, another the possibility of which is hinted at by some related developments in organization research, and a final one that extends the present paradigm recursively.

A systematic experimental science of social construction. A naturalistic view of social construction might be ripening (e.g., Sperber, 1996). An invitation to an experimental science of social construction processes could liberate business researchers who want to acknowledge and study socially engendered beliefs and things in society and business life, and have restricted themselves in terms of methodology in order to respect the presumed implications of a constructionist view. As a related example, consider the stimulating theoretical paper on organization, social networks, and institutions by Ahrne and Brunsson (2011).

In their attempt to distinguish organization from institution, Ahrne and Brunsson (2011) highlighted that only organization can be attributed to specific individuals, whereas (p. 91): "Even if institutions and networks are perceived as human products and not as states of nature, it is fundamentally unclear how they have arisen. They cannot be explained by referring to a few people only." From an experimental methods viewpoint a different picture emerges. In paper 1 (and 2) what we claim is precisely that we can refer a minimal institution in the form of a social construction to the involved participants (and the experimenter). In contrast, Ahrne and Brunsson (2011) went on to say that studies of institutions begin once the institutions already exist, again in contradiction to paper 1 (and 2). The more restrictive view of social institutions is unlikely to be unique, and additional features of social institutions could be affected by whether an experimental viewpoint is adopted or not (e.g., categorical differences between stability and instability might become gradated under simulation or experimental tests). Once experiments are routinely employed to systematically explore the dynamics of micro-based social institutions, the resulting, different perspective could warrant the relaxation of additional assumptions.

A research agenda for an experimental organization science. Perhaps we can push the (experimental) envelope further than social constructions, again grounding ourselves in the organizational manifesto of Ahrne & Brunsson (2011). Com-

plex social phenomena pose a problem for experimental science in that it becomes complicated or unethical to undertake controlled experimental manipulations (though exceptions exist, e.g., Salganik et al., 2006). However, the notion of partial organization could facilitate bridging attempts. In their identification of five critical components of organization, I believe that Ahrne and Brunsson (2011) also provided constructs that could be operationalized experimentally, thus facilitating contact between experimental science and organization science.

Recall that Ahrne & Brunsson (2011) distinguished organization from social networks and institutions as a decided order in terms of one or more of the elements of membership, hierarchy, rules, monitoring and sanctions. First, Ahrne & Brunsson's organization framework can be interpreted to show how some existing experimental research is already continuous with organization science. For example, membership is related to minimal-group or social-identity research, and sanctions are related to conditioning research.

Second, the organization framework can be interpreted to show how novel experimental organization research could be stimulated. For example, we might test experimentally how people respond to rules of various kinds and under various circumstances. Earlier in this chapter, I touched on descriptive and injunctive social norms. A systematic investigation of impact of rules would go further. For example, existing and future results in experimental sciences might be organized in terms of whether they involve not only social norms but also other rules like habits, routines, standards, policies, and laws. Moreover, from the perspective of organization it is of importance how the decided order comes about. For example, was it created for the experiment or did it already exist? If it was created for the experiment, did the experimenter decide the rule or did the rule emerge in a group of interacting participants? If the rule was provided to the participants, how was it presented to them? Most importantly, what are the effects of the various rules and decision contexts? These are obvious questions from the perspective of organization but have received little experimental research and could inspire novel, systematic research programs based on experimental methods.

Third, future experimental research programs could potentially accommodate a more expansive view than the five elements of Ahrne and Brunsson (2011). For example, if we think that one part of a definition of a complete, formal organization should be common purpose(s), then we can take account of the kind of experimental research undertaken in papers 1 and 2 in the present thesis. Both papers describe mechanisms that give rise to shared repre-

sentations, and paper 1 also shows effects of those shared representations on the important organizational phenomenon of social coordination. Because the shared representations were under experimental control, they should qualify as a decided order. Then, shared representations (e.g., a common purpose) could qualify as a sixth component of partial organization, as they have an organization origin even though they become institutionalized for the participants who carry the representations. This perspective further underscores how papers 1 and 2 contribute to organization science.

Experimental research on the five or six principles of partial organization could contribute to an account of complete, formal organization, grounded in a methodology that may have been underutilized in organization science. Because experiments enable tests of causality, such grounding would include possible causal roles of the various organizational variables. Thus, on the one hand, a focused review of existing experimental literatures on the principles of partial organization would suggest causal models of micro processes of organization. On the other hand, identification of questions that have received little attention with experimental methods could give rise to novel experimental research programs, on the causal roles of additional organizational variables.

Social network propagation of shared beliefs. Based on the current concern with social constructions or shared beliefs, an obvious kind of study to do would be to see how the shared beliefs propagate in chains or networks beyond a single dyad. This could also examine whether my finding in paper 2—that only some people, men, are included in the construction processes—applies in a social network, too. A possible development of papers 1 and 2 would be to examine propagation in networks of various configurations. This would contribute toward a better understanding of the implications of the present social-construction mechanism for larger-scale social phenomena.

7.4 Some practical implications

Let us briefly consider implications for market behavior and behavior in formal organizations.

At the beginning of this essay (chapter 1) we imagined finding ourselves on vacation and in a shop where we desired to buy a carpet. This situation allowed us to connect to the questions examined in the four empirical papers on trusting coordination, discrimination, fairness, and social interdependence

skill. The results of the empirical studies could shed further light on the situation, as well as give rise to some interesting new questions.

- For example, the successful use in paper 4 of the framework of social interdependence skill (SIS) to predict negotiations might not only show that different people would do differently well in this situation but that we might be able to predict somewhat who will do well. Of course, it would seem natural to expect also that experience in this kind of situation matters. This give rise to a practical question of how SIS might interact with learning in a situation like this, which provides professionals with repeated experience (e.g., Shanteau, 1992) which could give them an advantage. A possibility might even be to include a learning component in an extended version of SIS.

- Where did we go on this vacation? Paper 3 suggest that people from unequal societies value principled allocation schemes (in terms of fairness) and are more likely than others to find principles that lead to more equality to be relatively fair. Of course, talk may be cheap, and whether people in, say, Brazil, will "put their money where their mouth is" is beyond the existing data. Fairness is arguably a context-dependent concept (though not necessarily context-specific; Konow, 2003), which competes with many other forces in determining action. A practical follow-up question is the extent to which this concept would influence behavior in a naturally occurring market.

- In papers 1 and 2 we emphasize the impact of common beliefs, and we note that some groups, notably women, might be discriminated against in that they can have less influence on such social beliefs. In a negotiation about a carpet, the arguments by female negotiators might then not register to the same extent that male negotiators' arguments would. Such a pattern would raise interesting research questions about the negotiation process and social influence. First, discrimination by memory trace could undermine women's influence to guide the negotiation conversation in a desirable direction, with possibly poorer results for women. On the other hand, learning more about the interests of the other party than what that party learns about one's own interests might not be a disadvantage. To the extent that one can stand one's ground and assert one's right to have one's needs being met, knowledge about the other party's interests could even be an advantage in that one can choose to address those needs creatively in a way that suits one's own

agenda. Second, as we have noted there is no difference in the social tuning to women and men; people are equally inclined to take the perspective of a female recipient as to take the perspective of a male recipient. In uninterrupted negotiations, it may be enough that people tune to the interests of female counterparts, just as they do with male counterparts, since the reaction of the counterpart might be enough to keep the issue in discussion. However, for more extended negotiations with many interruptions, memory process could play a larger role, possibly undermining the force of female interests and arguments. Third, as I note in paper 2, there could be differences depending on domain, such that women and men might be in an equivalent position if carpet buying is considered a task appropriate also for women.

In addition of these examples of behavior in a market context, we may consider practical implications for behavior in formal organizations, as in corporations (selection, recruitment, compensation, and leadership) as well as in political contexts (voting rights).

Recruitment and selection. Recruitment and selection in companies are processes traditionally handled through HR departments, though increasingly part of general management responsibilities. To the extent that skill at handling situations with mutually dependent actors is important, the operationalization of SIS in paper 4 provides the HR department with a novel selection tool. The SIS framework might further facilitate broad consideration of skills in job candidates.

Also the findings on discrimination in paper 2 may have implications for selection and recruitment. Discrimination by memory trace is such a sneaky discrimination that it is unlikely to be noticed by either perpetrators or victims, and may include people without blatant prejudices against women. If women's voices are thereby not heard in the organization, in cliquish male groups this discrimination mechanism may lead to strongly shared beliefs; resulting preferences might further disadvantage female applicants and strengthen homophily among the personnel in a vicious circle.

A homogeneous staff could impact the productivity of teamwork within the organization but, despite many powerful reasons to expect positive effects, the evidence is mixed regarding productivity effects of diversity (e.g., Swann et al., 2004) and the impact of diversity on group work is heavily debated. However, because the present discrimination involves memory trace, it might be directly related to the well-documented difficulty for groups to take account

of individual members' unique information (Stasser & Titus, 1985; Wittenbaum et al., 2004). If discrimination by memory trace generalizes to interaction within groups, then groups might have particular problems with utilizing information that is unique to a female individual. In any case, poorer retention of information residing with females, whether in only dyads or also in larger groups, undermines effective resource utilization in society.[28]

Reward systems. The findings on distributive fairness in paper 3 might have bearing on compensation schemes, another traditional domain for HR management. In paper 3, we found that people from more unequal societies were more inclined to view inequality-reducing allocation schemes to be fair, as well as more inclined to view any principled allocation scheme to be fair. These findings, as well as the impact of individualism and collectivism, could inform differential country practices in firms with operations in different countries. Such corporate practices could achieve important effects of fairness views like legitimacy and motivation. For example, adopting principled approaches (i.e., using allocation methods rather than ad hoc discretion) might be particularly appreciated in unequal societies.

Moreover, to the extent that preferences based on shared beliefs mostly from men (paper 2) also favor men, it seems likely that those preferences may translate also into higher compensation going to the favored men. If merit-based compensation is the general ideology in corporations across the world (DeVoe & Iyengar, 2010), then reduced productivity from male-homogeneous groups coupled with greater compensation to males would seem unfair.

Leadership. Talent management is increasingly a central concern also for general management, not least in view of knowledge intense industries where the personnel is becoming increasingly decisive for the competitive advantage (cf. Argote & Ingram, 2000). As an example of the value of knowing the present findings for exercising good leadership, one of the important roles for good managers/leaders in teamwork seems to be to ascertain that mentioned unique information in the group remains in discussion (Wittenbaum et al., 2004). Thus, insight into the present results on discrimination, fairness, and

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[28] The hypothesized account for discrimination by memory trace—that gender-based discrimination depends on beliefs that women have low competence—could also suggest a remedy. Just like in the research on unique and shared information in groups, systematically pointing out the expertise of women who may hold unique information should facilitate information retention.

SIS can be tools for general managers and leaders. Conversely, several of the competencies highlighted by the skill-based leadership school (e.g., Mumford et al., 2000) suggest that social interdependence skill is important for leaders and general managers, and could be an especially useful tool for recruitment of people to such roles.

Political influence. What are the potential consequences for women if we consider collective decision-making more broadly? Besides bargaining, Elster (2007) suggested that collective decision-making can happen through arguing and voting. If our collective beliefs take less account of women's beliefs, women are likely to be less influential in arguing (and probably indirectly in formal voting processes). While women received formal suffrage in many countries a century ago, the phenomenon of gender-based exclusion from social construction processes (discrimination by memory trace) suggests that extension of voice to the entire population might not have been completed for (probably as important) informal processes.

8. Outlook

Ultimately this is a thesis about value creation and value distribution in a social world of agreement and disagreement. I have spent much space on agreement and disagreement in terms of shared beliefs, because they seem to be involved in so many central processes in society.

The pleasure of cognitive sharing might be unique to humans. Just like human toddlers, chimpanzees may get others to do things for them, but extensive research suggests that only human toddlers delight in joint attention (Bruner, 1975; Carpenter et al., 1998). This could be the beginning of interpersonal society. From joint attention there is a small step to joint views, as in internalized states or memories, at the very least because attention is associated with the encoding of memories (e.g., Eichenbaum & Cohen, 2001, p. 11) but also because it is difficult to imagine role-taking and a shared reality without the capacity for joint attention.

Thus, social influence might be important for members of all social animals but it is unclear why non-human animals should care about, or even notice, rejection from the construction of collective views (e.g., Tomasello et al,

2005).[29] Discrimination based on exclusion from the construction of shared beliefs (paper 2) is deeply human. Because of how much in human life hinges on social constructions (and resulting organization), such discrimination can have devastating consequences. Homophily has been touted as one of the (two) main spontaneous inclinations in human organizations (Gruenfeld & Tiedens, 2010); both its effects and its maintenance could involve the mechanism for shared constructions that I have discussed in the present essay, and which we utilized to study trusting coordination and discrimination in papers 1 and 2.

Fortunately, the human ability for abstraction could also enable us to adopt rules to counteract such exclusion from social construction processes. Fairness standards (paper 3) figure prominently here, and they might be one of the means whereby we can protect those who are vulnerable, whether due to social position or more portable features like ability, e.g., social interdependence skill (paper 4) which is in unequal supply too. How we deal with discrimination, fairness, and the rewards to the skilled can affect the legitimacy of those human institutions (and other regulating fixtures) that helped produce value for the collective in the first place. While common views can become a liability if they are restricted to cliques, legitimacy springs from consensual values. It seems clear that a memory-based social science has much to offer, especially if we can get a handle on social memories.

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[29] If they do not even have the concept of joint attention, how could they have a concern for shared beliefs? Also, consider the relatively recent emergence (probably) of deliberate teaching in human history (Nelson, 2005).

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