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Cooperation and Distrust – a Contradiction?

Abstract: Trust is usually considered a prerequisite of cooperation in social dilemmas. Experimental studies show that people cooperate surprisingly often. However, this may happen because almost no risk from cooperation exists, and trust can be shallow. In daily life, trust is normally more evidence-based: that is, sufficient information has to be provided to allow the development of trust. The higher the risk resulting from cooperation, the more necessary such a collection of information becomes. During the phase of information gathering, a state of distrust, rather than a state of trust, may be evolutionarily functional. Experimental studies show that people in a state of distrust (a) do not take the opinion of others automatically as their true position, but rather display extensive attributional considerations, (b) generate ideas opposite to, or incongruent with, those in the message of the distrusted others, and prefer non-routine strategies, (c) perform better in logical reasoning, and (d) show an increase in cognitive flexibility. We will discuss whether distrust can be seen as a state of mind that enhances mindful processing. Furthermore, we examine whether a state of distrust improves accuracy in detecting fraud and lies, and thus decreases the risk involved in cooperation in the long run.

1 What do experimental social dilemmas have in common with social dilemma situations in daily life?

In social sciences, decision-making and social interactions are often analyzed by using experiments designed as social dilemmas. The so-called "trust games" are one important group of such social dilemmas: two or more players are provided with a certain amount of money, and each of them is asked to give a share of this money, or all of it, to a collective account (Fehr and Fischbacher 2004). The referee multiplies the resulting amount of money with a factor b ($1 < b < n$). This outcome determines the returns of the game and is apportioned among the players independent of their particular stake. The structure of social dilemmas in this game can be easily identified. Players win the most by investing the least, but only as long as there are other players who invest enough, and therefore act cooperatively. The gain is maximized if all players cooperate.

It is assumed that those players who invest all or most of their money *trust* the other player or players because they expect cooperation (positive or benevolent behavior) without being able to apply control over the respective outcome. Thus, Mayer, Davis, and Schoorman (1995:712) define trust as follows: "Trust is the willingness of a

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party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." Trust (or distrust) may be a disposition as well as a certain state of mind. In the first case, the player has the general tendency to expect benevolence (or malevolence) from most other people, not only in trust games but also in other situations (cf. Rotter 1967). In the second case, the trust (or distrust) of the player is not generally given but refers to a specific person or to a specific group and may be induced by more or less extensive experiences or sensations. In their meta-analyses, Balliet and van Lange (2013) show that overall specific trust is more associated with cooperation (r = .58) than with dispositional trust (r = .26).

In these trust games, as well as in other games with other dilemma structures, cooperative behavior may increase, and defective, egoistic, behavior may decrease, under certain conditions. More cooperation is shown if players interact more often, instead of engaging in one-shot games, the monetary incentive for cooperative (compared to that for defective) behavior is relatively high, the players are similar in their attitudes, or the players trust each other (Balliet and Van Lange 2013; Dirks and Ferrin 2001; Fischer 2009; Hardin 2006).

So what do these experimental games have in common with social interactions in daily life? First, many social interactions in daily life often have the structure of a social dilemma. Just think of the recent donation appeal by Wikipedia, in late 2015, to support this non-profit information website, or the decision whether or not one should report an observed offense to the police. Second, people encountering social dilemmas in daily life may also be previously unknown to each other, and may only interact for a short period of time, as is the case in experimental games.

However, many "players" in daily life may not come together with the sole purpose of attending to a social dilemma. Interacting partners in daily life may already have more or less competent knowledge about each other, and/or the person to be trusted may represent a certain social role, such as that of a physician or a supervisor.

In this respect, person-specific trust or distrust in daily life is even more rationally justified. On the one hand, the justification can be based on one's own experiences with the other person. Ideally, this trust is built up slowly and turns from a calculus-based trust to a knowledge-based trust, or even to an identification-based trust (Lewicki and Bunker 1996; Lewicki, Tomlinson, and Gillespie 2006; Rempel, Holmes, and Zanna 1985). On the other hand, it may be a role-based trust. The trust of groups of people, such as judges or physicians, as well as organizations, is transferred to their particular representatives. It is an abstract trust of a function, or a role owner, as well as the system of organization behind him or her which ensures that role-adequate behavior is met and maintained (Kramer 1999; McKnight, Cummings, and Chervany 1998; Oswald 2006; Oswald 2010). This role-based trust can be developed (a) via direct contact with role owners, (b) via information from a third party about the reputation of the person or organization in question, or (c) via information from the media (Ferrin, Dirks, and Shah 2006). Nevertheless, it is necessary to state that in

most social dilemmas in daily life, people refer to knowledge-based trust developed via direct or indirect experiences.

In contrast to daily life, there is rarely role-based trust in one-shot trust games. Knowledge-based trust, which may develop through repetitions, is relatively reduced, as possibilities for behavioral feedback are very restricted. In addition, before we ask ourselves if one can speak of trust in these situations at all, we should consider the very low risks at stake in experimental games. In most studies the monetary incentive for a cooperative or defective decision amounts only to a "pocket money" of several Euros, and no real loss is possible if participants' trust (cooperation) is betrayed by the partner (e.g., Harth and Regner 2016: average earnings 12.23 €, no real loss possible; Brañas-Garza, Espín, and Lenkei 2016: average earnings between 9 and 11 €, no real loss possible). This fact is often criticized, as it has been shown that the magnitude of the monetary incentive influences the decision behavior (Gneezy and Rustichini 2000; Parco, Rapoport, and Stein 2002).

2 The necessity of well-founded trust varies with the risk from cooperation

The risk arising from cooperative behavior can vary strongly. That risk may be a simple loss of game money, or a loss of real money from a few pence up to millions, or several years in prison (if one plays a prisoner's dilemma in real life), or even the loss of one's own life. The latter loss can happen, for example, up in the mountains when a rope team with two climbers gets into a dangerous situation. The higher the risk of a social dilemma, the more secure one has to be that one's partner can be trusted (Mayer, Davis, and Schoorman 1995). Balliet and Van Lange (2013) show, using a meta-analysis, that trust exhibits a stronger positive association with cooperation during situations involving larger, compared to smaller, amounts of conflict. Thus, trust matters more when there is a serious conflict of interest.

Alternatively, in case of high risks, one can establish control or protective measures, such as the so-called "worst-case protection" or "hedges", which often exist as supplementary agreements (with corresponding compensations) in case of missing cooperation (Meyerson, Weick, and Kramer 1996). A combination of trust and some control in cases of high risk may be meaningful for the further development of trust (Das and Teng 1998; Gangl, Hofmann, and Kirchler 2015). However, if the decision to cooperate is made by external persons or authorities, the structure of the decision changes. This is no longer a social dilemma at all (cf. Messick and Brewer 1983).

If the risks are low, people may choose cooperative behavior because they understand it as a kind of social politeness. If they choose to defect, they will breach this politeness norm and have to expect social disapproval. In such cases it may be enough to see the other person, or to hear their voice, to build up a feeling of trustworthiness.

This automatically-developed feeling needs to be differentiated from the more rational process of assessing the likelihood of becoming the victim of exploitation (Neumann 2014). Dunning et al. (2014) prove, in their studies, that this feeling of trustworthiness towards strangers is due to a *norm* mandating that they show respect for each other *even* if they are not convinced of their goodwill.

If, as in such a case, no knowledge about the trustworthiness of the specific partner is required, Lewicki and Bunker (1996) talk of a calculus-based trust. As soon as the risks from cooperation increase, however, the situation changes significantly, as mentioned above. In romantic relationships, a kind of testing of mutual reliability and integrity takes place after the first romantic feelings are felt. A jealous watch is kept over appointments or promises. The social behavior of the partner towards friends and relatives is also tested, so as to build up knowledge about his or her benevolence and integrity (Rempel, Holmes, and Zanna 1985). Whenever the risks in the relationship increase, for example, in case of the decision to have a child, new critical partner tests may take place. An emancipated woman will thus try to ensure that the partner takes responsibility for parenting, even if that means that he has to cut down his career intentions to a certain degree.

Trust development follows another path in case of role-based trust, as previously mentioned. If the possibility of behavior testing of the role owner is missing, as for example with a new physician, trust relies on the general reputation of the social role or organization (Diekmann and Wyder 2002; Li and Jia 2008). This reputation is normally built using information from third parties, one's own experiences with representatives of this social role or organization, and/or by reports and statistics in the media. This form of trust may also be accompanied by more or less extensive tests and inquiries.

These trust tests are tainted with uncertainty. A trust decision is inevitably a prediction based on the strength of past experience, and this prediction may be erroneous. *However, it is important for further argumentation to know the fact that people facing an increasing risk from cooperative behavior will make a point of knowledge-based trust, built up through their own experiences, or the experiences of third parties.* Furthermore, where this justified trust does not exist, further control mechanisms will be demanded as a substitute for trust. Finally, the question remains as to the quality of the trust test: how correct the prediction is, and how valid the resulting trust decisions have been. We thereby reach the central topic of this essay.

3 Cognitive functions of distrust

With increasing risk, cooperative behavior is probably based on knowledge-based trust in the specific person, or the role owner. The more critical the test, the more profound should be the knowledge. Interestingly, the motivation for such a *crucial*

test is often a state of distrust. Let us analyze the research which corroborates this assumption.

The research about cognitive functions of distrust has vastly increased over the last twenty years and shows that a state of distrust is connected with (a) reasoning about alternative explanations, (b) the use of non-routine strategies, (c) cognitive flexibility and (d) the overcoming of a positive test strategy. We will report the main results of this research, because an overview of all studies may provide a new insight into the importance of distrust as a state of mind.

3.1 In a state of distrust people think about possible alternative explanations

People in a normal environment usually trust the statements of others and consider them as true. This well-developed "truth bias" may be considered as a heuristic that does not only simplify the cognitive processes during social interactions, but also makes the communication easier and contributes to the maintenance of social relations (Grice 1975; Kraut and Higgings 1984; Stiff, Kim, and Ramesh 1992). In a state of distrust, however, people have doubts about whether statements can be taken at face value. Distrust can be considered as the perception that the environment is not normal and functions as a warning signal – things may not be as they appear (Schul, Mayo, and Burnstein 2004). Thus, distrust indicates danger, that is, the possibility of being cheated by the interaction partner who may try to get ahead at the expense of others. While trust means renouncing social control, totally or at least partially (Mayer, Davis, and Schoorman 1995), in a state of distrust it appears necessary to check the behavior of the distrusted person.

Therefore, one of the most relevant functions of distrust is that people are no longer guided by first impressions or the seemingly obvious reasons for another's behavior; instead they take a closer look at the circumstances. Fein and colleagues (Fein, McCloskey, and Tomlinson 1997; Fein 1996; Hilton, Fein, and Miller 1993) were able to show that the fundamental tendency to explain the behavior of others as a definite expression of their attitudes or disposition, the so-called correspondence bias (Jones and Harris 1967), decreases in a state of distrust or suspicion. Students' political statements were questioned much more regarding external influences, and were less attributed to their own political attitude, if the analysts were in a state of distrust rather than in a neutral state of mind.

Furthermore, according to Schul, Burnstein, and Bardi (1996), as well as Schul, Mayo, and Burnstein (2004), distrust can be interpreted as the tendency to be ready to resist the persuasive intent of others and to think about possible alternative explanations. If people suspect the validity of messages, as argued by the authors, they encode messages as if they were true and, at the same time, as if their opposite was true. Thus, people tend to search for non-obvious alternative interpretations of the given informa-

tion, although such attempts might be cognitively taxing (Schul, Burnstein, and Bardi 1996). It can, however, be assumed that the opposite of any given information should be more quickly available in situations of distrust than of trust, and incongruent or so-called "counter-scenarios" should be more easily activated. This latter assumption was tested in an extraordinary study by Schul, Mayo, and Burnstein (2004). When subjects were primed with an adjective (e.g., "difficult") superimposed on a face presented on the computer screen, they recognized synonyms (e.g., "complicated") faster than antonyms (e.g., "easy") if the face was trustworthy. However, antonyms were recognized faster than synonyms if the face was untrustworthy. According to Schul, Mayo, and Burnstein (2004), this interaction effect corroborates the assumption that an activation of incongruent associations is a generalized pattern of response in a state of distrust.

We could not replicate these results in four experiments (Ulshöfer, Ruffieux, and Oswald 2013). While the study by Schul, Mayo, and Burnstein (2004) was conducted in Israel, ours were conducted in Switzerland, and it may be possible that the effects of this specific paradigm are culture-specific. However, there are diverse studies with different experimental paradigms which show that people in a state of distrust are stimulated to leave the standard path of association and thought, as we will demonstrate below.

Before we analyze these further studies, we want to explain a bit more how distrust and trust are manipulated in these experiments. This explanation will probably facilitate readers' understanding, but has also the benefit that the description of the following studies with either the same or diverse manipulations of distrust and trust remains more economical and manageable. Distrust is often manipulated independently of the upcoming task that subjects have to fulfill. In Schul, Mayo, and Burnstein (2004), as well as in other studies, faces with trustworthy or untrustworthy expressions have been used to elicit a state of trust or distrust in the subjects (experiment 3 in Schul, Mayo, and Burnstein 2008). In other studies, tasks which lead to distrust have to be solved. For example, one has to judge if a questionnaire was answered by women, or by men who only pretend to be women. Those questionnaires contain, for example, descriptions of what is in the purse of the person answering, or how one might exchange a flat tire (experiment 1 in Schul, Mayo, and Burnstein 2008). Another priming method is used by Mayer and Mussweiler (2011) in their second experiment. Subjects have to set up correct sentences from several words. They receive so-called "scrambled sentences" in which several words are presented in a randomized order, with one word often not belonging to the sentence. In the condition of distrust, a majority of the resulting sentences had distrustful content, for example, "asked a fraudulent question". In other experiments the priming of distrust occurs unconsciously. Subjects have to fulfill a lexical decision task (LDT) where they have to decide whether a letter combination is a word (e.g., "jacket") or a non-word (e.g., "bealk"). Before these words or non-words are shown on the screen, the verbs "ver-

trauen [trust]" or "misstrauen [distrust]" are shown for 13 ms. (experiments 1 and 3 in Mayer and Mussweiler 2011).

A manipulation check was not always executed in these experiments, and the effects of a distrust manipulation were not always compared to a trust manipulation, only to a neutral control group. Nonetheless, several studies showed a consistent picture.

3.2 Distrusting individuals prefer non-routine strategies in unusual environments

As already mentioned, Schul, Burnstein, and Bardi (1996) and Schul, Mayo, and Burnstein (2004) assume that distrustful people are on guard, believe things may not be as they appear, activate incongruent associations, and consider alternative explanations of the obvious reasons of another's behavior. Elaborating further on these assumptions, the authors now postulate, from a broader perspective, that people who distrust will particularly avoid those strategies to solve problems that are frequently or routinely taken. Schul, Mayo, and Burnstein (2008:1294) postulate that trust and distrust are generally associated with different types of thought processes: under conditions of trust, people succeed more in making inferences about typical environments, whereas those who distrust perform better in environments that are unusual, unexpected, or non-routine. In three experiments the authors analyzed how subjects in a state of distrust solve problems with routine solutions (for example, to predict changes of a variable Y which increases when two predictors X_1 and X_2 increase) or solve problems which have solutions that deviate from the routine (for example, to predict changes of a variable Y which increases with predictor X_1, but decreases with predictor X_2). Schul, Mayo, and Burnstein (2008) confirmed their hypothesis and commented on their findings in this way: distrust "sensitizes individuals to departures from the expected and increases the likelihood that they will search for irregularities and non-routine contingencies" (Schul, Mayo, and Burnstein 2008:1300).

3.3 A state of distrust may enhance cognitive flexibility

On the basis of the assumptions by Schul, Mayo, and Burnstein (2004; 2008), Mayer and Mussweiler (2011) reasoned that distrust is also beneficial for cognitive flexibility, which is one of the main components of creativity: "[…] people in a distrust-mind elaborate more, and they do so in a specific way: They seem to entertain multiple interpretations of potentially valid information rather than to elaborate intensely on that information within only one interpretation frame. […] The latter is consistent with category diversity and is thus indicative of cognitive flexibility" (Mayer and Mussweiler 2011:1263). Given that lots of studies show that creativity in groups implies a context

of mutual trust (Bechtoldt et al. 2010; Ekvall and Ryhammar 1999), they reduce their postulate to such situations where people act alone, and therefore are in a private context. In their first experiment, the authors showed that subliminally-primed distrust (vs. trust) had detrimental effects on creativity (measured by an idea-generation-task) presumed to be public. However, an opposite tendency emerged as soon as people believed themselves to be in a private environment. Further experiments support the assumption that distrust enhances creativity, whereas cognitive flexibility mediates the interrelation. The last two of the four experiments focus mainly on cognitive flexibility. If cognitive flexibility increases, the question arises as to whether people perceive even less typical representative members of semantic categories (e.g., vehicle, furniture or vegetable) still as members of their category, or rather judge that they do not fit their category after all. The higher the so-called "category inclusiveness", the more participants are willing to include even less representative members in their category. In fact, Mayer and Mussweiler (2011) show that subliminally primed distrust induces an increased category inclusiveness and thus cognitive flexibility. In Experiment 3, for example, participants under conditions of distrust included less typical exemplars (e.g., "camel") more in their respective categories (e.g., "vehicle") than participants under conditions of trust or in a neutral state of mind.

3.4 A state of distrust helps to overcome a Positive Test Heuristic

Our thinking and perception is normally based on hypotheses, and we therefore tend to test those phenomena which are predicted by our assumptions. This tendency to search for predicted phenomena, and not for those which falsify the hypothesis, is called a Positive Test Heuristic. Under certain premises, this heuristic leads automatically to an affirmation of the tested hypothesis, and thus even to an illusory confirmation (Klayman and Ha 1987; Oswald and Grosjean 2004). Wason (1960; 1968) has analyzed the strategies of his subjects under such preconditions. In the paradigm of the 'rule discovery task', subjects were shown a sequence of numbers (e.g., 2–4–6) and had to find the rule behind this sequence (Wason 1960). Most subjects thought of the rule as 'a sequence of even numbers', and named triples as, for example, 6–8–12 or 20–22–24. They applied the Positive Test Heuristic. However, the correct rule was *more general* than the assumed one, as it was 'any series of increasing numbers'.

They always received a positive feedback regarding the test of their hypothesis, even though it was wrong. Only a Negative Test Heuristic would lead them to the correct rule: they have to name a triple which is contrary to their own hypothesis. Mayo, Alfasi, and Schwarz (2014) tested whether a state of distrust helps subjects to avoid the Positive Test Heuristic. The basis of this study is the assumption that a person in a state of distrust focuses on how things may be different from the hypothesis they have in mind. The researchers compared four groups of subjects, who had different degrees of dispositions to trust, or were manipulated with trust and distrust. They confirmed

their hypothesis. Subjects in a state of distrust, or a disposition to distrust, used the Negative Test Heuristic more often than those subjects in a state of trust or a disposition to trust. In contrast to Mayer and Mussweiler (2011), they demonstrated that the initial idea-generation stage is not the only route to the higher creativity observed (Mayo, Alfasi, and Schwarz 2014).

In the second paradigm, the 'selection task' subjects had to prove the logical rule "if *p* then *q*" (Wason 1968). A correct test required that the subjects not only tested for *p*, but also for non-*q*, which normally only 5–10 % of subjects do. Gigerenzer and Hug (1992) found that subjects did better if there was a possibility that cheating has taken place, and that they were able to uncover it. If the rule "if *p* then *q*" is introduced as a social rule, such as "If one sleeps in a mountain shelter, then one should bring wood for the keeper of the shelter", subjects tested non-*q* more often. The subjects decided to investigate whether those persons who did *not* carry wood up to the shelter will sleep there or not. To test non-*q* under this condition is much easier than under an abstract rule such as "If there is a vowel on the front side, there is a number on the back side."

4 Does distrust improve the detection of cheating and lying?

The cognitive consequences of distrust are seen as a result of evolutionary adaptation processes which have developed out of constant danger of being cheated by others (Mayer and Mussweiler 2011; Schul, Mayo, and Burnstein 2004; 2008). People can protect themselves, if they consider what might happen if the opposite of what the other says is true (Schul, Mayo, and Burnstein 2004). Moreover, people under conditions of distrust are likely to avoid routine strategies, because these strategies are easily anticipated by whoever may be seeking to deceive them (Schul, Mayo, and Burnstein 2008). Mayer and Mussweiler (2011:1263) also emphasized the adaptive advantage of preparing oneself through elaborate information processing, and with counter-scenarios for possible cheating. They compared this adaptive strategy to the less effective strategy of avoiding every situation which may be associated with a potential fraud.

So we summarize that a state of distrust leads to elaborate information processing: alerting subjects not to take information at face value, but rather increasing the likelihood that they will consider that things might be different from what meets the eye (Schul, Mayo, and Burnstein 2004); enhancing unusual non-routine strategies in problem solving (Schul, Mayo, and Burnstein 2008); activating cognitive flexibility (Mayer and Mussweiler 2011); and improving critical hypotheses testing (Mayo, Alfasi, and Schwarz 2014). It therefore seems reasonable to assume that distrust enhances a subject's ability to uncover the 'true' intentions of liars and cheaters. One would assume, for example, that people in a state of distrust will pay more attention to the con-

tents of the statements of others, analyze possible ulterior motives more, and therefore uncover more logical inconsistencies (see Appendix for an example). However, one also has to question the assumed adaptiveness of these strategies.

Indeed, to our surprise, even though there are numerous studies about the adaptive consequences of distrust, until now there has been no study to test whether distrust is advantageous for the accuracy of detecting fraud or lies. Recently, Reinhard and Schwarz (2012) have shown that the accuracy of lie detection can be improved if people elaborate the content of a message instead of relying on non-verbal behavior. It improves the accuracy of lie detection because content cues, for example, the number of reported details, or logical inconsistency, are generally more valid than non-verbal cues, such as gaze aversion (Vrij 2008). However, the elaboration of information processing in this study was due to a manipulated negative mood rather than to a state of distrust. Additionally, in a pretest by Ruffieux and Oswald (2015), it was examined whether subliminal primed distrust (vs. control condition) increased the accuracy of lie detection, given that judgments should be especially driven by logical inconsistencies of the arguments. Indeed, the accuracy of judgments in a state of distrust (76.7 %) was better than for participants in a neutral state of mind (63.3 %). Although this difference of the overall accuracy was not statistically significant, it could be verified that distrust improves the detection of a lie, but not at the expense of detecting the truth. Moreover, the additionally measured self-report about cues used during the veracity judgment showed that participants under conditions of distrust predominantly reported having used contradiction or inconsistency as a cue (53.3 %), whereas those in a neutral state of mind reported this less often (40 %).

However, the hypothesis that, in a state of distrust, people are better at uncovering cheating and fraud is not necessarily a truism, nor so easy to confirm. One has to consider that people who are afraid of fraud and cheating are not the only ones who have developed this effective cognitive strategy: the cheaters and liars have done so too (Schul, Mayo, and Burnstein 2004). Furthermore, the state of distrust has to be differentiated from the disposition to distrust. The latter can even be counterproductive, because a general tendency to distrust may lead to a weak tendency to show trusting behavior and to a strategy of avoiding situations which may be associated with fraud. There will therefore be few possibilities to learn from experience, and generally distrusting people run the risk of wrongfully accusing others (Yamagishi, Kikuchi, and Kosugi 1999).

Finally, how confident people are in their distrust may be crucial. In the cited studies, merely a state of distrust was manipulated, rather than a firm conviction that a person has malicious intentions. However, a person needs to be uncertain as to whether they should trust or not, or they may not critically examine the other party and the environment and may thus easily fall for a Positive Test Heuristic.

To sum up this section: from an evolutionary point of view, a state of distrust should especially serve the function of detecting cheating or lying sooner, and more

accurately, than a neutral state or a state of trust. Unfortunately, this conclusion has not yet been sufficiently investigated.

5 Distrust and significant risks arising from cooperation

As long as cooperation is examined in social dilemmas, where the risk from cooperation is little more than pocket money, we will not learn when (and under which circumstances) people reliably trust their interaction partner. Trust in these experimental situations may not be much more than easily-shaken confidence in politeness norms. As soon as there are significant risks from cooperation, another level of trust needs to exist. From a theoretical point of view, it is worth mentioning that more research about the process of trust development has been conducted on experimental dilemmas (Ismayilov and Potters 2016; Neumann 2014; Przepiorka and Diekmann 2012). However, these apply to general situations, with only a low cooperation risk. To know more about cooperation in daily life, we have to learn something about the development of trust when the risk arising from cooperation varies. Without direct or indirect experience regarding the benevolence and integrity of the other partner, one may not expect cooperative behavior in real conflict situations, or cooperation may end very abruptly.

What role does distrust play in the development of trust, when the risk arising from cooperation is significant? Even if it may be paradoxical at first glance, distrust seems to be a functional state of mind for the development of trust. To reduce the risk from cooperation in a dilemma, one has to make the correct decision as to whether the other party is to be trusted. Nothing could be worse than betting on the wrong horse and judging trustworthiness wrongly. A correct decision requires elaborate and critical information processing about the benevolence and the integrity of one's partner. Moreover, we now know that this occurs more often under circumstances of distrust than it does under circumstances of trust.

Appendix

Notes: Andreas Diekmann and Margit E. Oswald are in the same place at the same time in the mountains, on the First (8357 ft.), in the Kander-Valley, Switzerland. But can we trust this assumption? Is the picture possibly fake? What kind of counter-scenarios may be possible? Questions like these belong to people who are in a state of distrust, and *they* will detect the striking inconsistencies in the shadows.

Fig. 1: Andreas Diekmann and Margit E. Oswald in the same place at the same time.

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