Relationships to Social Robots:
Towards a Triadic Analysis of Media-oriented Behavior

Joachim R. Höflich
University of Erfurt

ABSTRACT

People are living in relationships not only to other people but also to media, including things and robots. As the theory of media equation suggests, people treat media as if they were real persons. This theoretical perspective is also relevant to the case of human-robot interaction. A distinctive feature of such interaction is that the relation to social robots also depends on the human likeness as an anthropomorphic perspective underlines. But people seem to prefer a certain imperfection; otherwise they feel uncanny. This paper explores the idea of robots as media and people's relations to them. The paper argues that robots are seen not only in the context of a relationship with a medium but also as a medium that 'mediates.' This means that robots connect between the environment and other people, but can also divide them. The paper concludes with a proposed perspective that widens a dyadic model of human-robot-interaction towards a triadic analysis.

INTRODUCTION: WHO IS THE MURDERER?

After living in a computer world, we are moving towards a world of robots. Such robots include those that are not only machines but also those that assist our life. Increasingly they are becoming a part of our social life – for the better or the worse. This necessitates a broader view on robots not only as 'interaction partners' but also as an integral part of our interpersonal networks. A short story will introduce the theme of this paper: Solaria – a future world, populated by human descendants. The few colonists on this world prefer to communicate exclusively via media. Holographic projections enable them to look at each other. Face-to-face conversations are not usual. Confronted with a real other being, the inhabitants of Solaria would feel very uncomfortable. Only robot servants get into direct contact with their human owners and masters. Solaria is a very innovative world and an Eldorado of robots concerning the research and industry of robot-technology.

However, a murder has been unexpectedly committed in this utopian world. This incident is not supposed to happen on Solaria. Firstly, as already mentioned, humans strictly avoid direct contact with each other. So it is quite improbable that a person could approach closely enough to strike someone dead. Secondly, robotic laws prevent robots with high-end artificial intelligence (positronic brains) from harming humans. The first law especially indicates that a robot may not injure a human being or, through inaction, allow a human being to come to harm (see Asimov, 1991, p. 44). Installed permanently in the positronic brain of every robot, there should be no way to bypass these rules. They must be obeyed strictly and with no exceptions. Then, how is it still possible to instrumentalize a robot to commit a murder? What about the implementation of two robots that are compatible to their programs, and also, could establish a situation where the Laws of Robotics would not work? This story is, of course, attributable to the science fiction author Isaac Asimov and one may recognize that the criminal case presented here outlines one of his popular novels from 1956, serialized in *Astonishing Science Fiction* and published under the title *The Naked Sun*.

With this introduction, I would like to point out that the relationship between humans and social robots is more complex than a dyadic one; rather, it is embedded in a triadic relationship where the robot is not only 'a third' (thing) but also 'the third' (social entity or communication partner). This characterizes robots as social robots as it is indicated by a definition presented by Fong, Nourbakhsh and Dautenhahn (2003): "Social robots are embodied agents that are part of a heterogeneous group: a society of robots or humans" (p. 144). My following comments are indeed well illustrated by the aforementioned futuristic story, because it shows that robots are socially linked between persons (in this case as a link between Ego and Alter with the intention to kill without being 'aware' of this). But this could also be in a socially positive sense, for instance, as a mediator between two persons or between a person and his or her environment. As a starting point, I will explore the idea that the human-robot relationship is based on a dyadic model of interaction, which underlines that people refer to robots not simply as a thing but in a social sense, that is, as if it is a real person. Two aspects will especially be regarded: one is how humans tend to have relationships to things in general and to media in particular, and the other is how this relationship (above all, with robots) seems to be dependent on the extent to which the robot looks like a human. Illustrating with some examples, I will extend this assumption by adding a perspective of the third person not only as a substitute for a dyadic analysis but even more as an additional view on ongoing interactions between humans and robots.

RELATIONSHIPS BETWEEN HUMANS AND SOCIAL ROBOTS

Everyday life is increasingly becoming mediated. Today, mass media serve as a central reference providing orientation in life. The Internet and the variety of communication options through cyberspace accentuate this trend. This is not only because people are using the Internet for interpersonal communication but also because technological advancements are inducing media to become mobile. Lately, a new medium has arisen; that is, the robot. The robot can be considered as the real mobile medium because it is able to move autonomously, while in the case of mobile communication, it is the people who are mobile and the medium itself is not mobile. A robot can be defined in various ways depending on the theoretical point of view. The perspective of a robot as will be seen here is not the robot as a machine, a sensomotoric machine or an autonomous machine. Instead it will be looked at as a medium. A media perspective is a perspective on communication, and the medium is something that 'mediates,' connects, and relates to that. It is mediating between humans as well as between humans and their environment. Furthermore, this perspective posits that people have relations to media (see Höflich, 2003, p. 90), which are in a certain sense 'talking back.' From this point of view, robots can be understood as a special type of media, that is, "interactive media" (Krotz, 2007, p. 155). Zhao (2006) in particular locates the relationship to robots as a relationship with media. He contrasts a relationship with media to a communication via media, and also, to other computer-mediated interpersonal communication (CMC) devices. Robots enable individuals to communicate directly with them. On this matter, Zhao (2006) states: "Humanoid social robots differ from CMC technologies in that they are not a medium through which humans interact, but rather a medium with which humans interact. Acting as human surrogates, humanoid social robots extend the domain of human expression, discourse and communication into the computerized world" (p. 402). Thus, robots represent "a special medium of communication that affects the way we see ourselves and relate to others" (Zhao, p. 413).

Depending on the ways a medium is used (may it be more or less personal), the meaning of a medium will be constituted, and also, a distinctive relationship will be established or stabilized. Regardless of being material (hardware) or not (e.g., software agents), those interactive media seem to possess some sort of presumed 'communicative intelligence' or communicative skills. Whatever the consequences of such developments may be, it indicates a pluralization of social interaction forms (Scholtz, 2008). The more variety a media world offers, the more diverse the communicative practices in the context of media usage become. Scientists interested in this new research field (the human-robot interaction – HRI) would like "to understand and shape the interactions between one or more humans and one or more robots" (Goodrich & Schulz, 2007, p. 15).

MEDIA SEEN AS SOCIAL ACTORS: THE MEDIA EQUATION

"Mediated life equals real life," according to Reeves and Nass (1996, p. 7). People have relationships with media, although one might add that the relationships are in an 'as if' sense. As Reeves and Nass state, "People respond socially and naturally to media even though they believe it is not reasonable to do so, and even though they don't think that these responses characterize themselves" (p. 7). In the context of mass communication, such an 'as if' relation is well known. There is a relationship to a person who indeed really exists but he or she is only 'present' via media as a media persona (e.g., a TV-soap character or an actor in a movie). Horton and Wohl (1956) termed such unidirectional relationships as para-social interactions. The media persona becomes a communicative reference point although s/he never runs the risk of getting into face-to-face contact in reality. This idea can be extended to explain the communication with a medium: the medium itself gets a

communicative reference based on imagination and secured by technological feedback (interactivity of the medium).

Interaction with media and with media-generated creatures can be felt as real. Computers, as well as computer-generated creatures and virtual personae, will be personified as illustrated by the early example of Kyoko Date, a Japanese virtual figure that even became a pop star. This indicates that emotional bindings are not only possible to humans, but also to non-human creatures, including pets and even spiritual phenomena (see also Cerulo, 2009). Robots are a special case: they are real, physically present (except for the case of software robots) and interactive. However, a social robot cannot act in a social way. Considering Max Weber's (1976) understanding of social action as reciprocal meaningful (sinnhaftes) behavior (p. 1), eventually, relationships to robots are not "interpersonal," but instead, quasi-interpersonal and quasi-social. The robot is a machine without empathy; but its reaction is interpreted as social. Therefore, Krotz (2007) suggests using the term "pseudosocial" to paraphrase the social component of the interaction with a robot (p. 161).

In order to explain this phenomenon, Reeves and Nass (1996) use the term "media equation," indicating that interactions with media (from television to the computer) are social affairs following the rules of face-to-face interaction. These do not basically differ from interactions in real life. They state, "It is possible to take a psychology research paper about how people respond to other people, replace the word 'human' with the word 'computer', and get the same results" (Reeves & Nass, 1996, p. 28), which is a somewhat exaggerated proposition. In a certain sense, I propose to replace the word "computer" with the word "social robot" because this better expresses the fact that a person is able to start an emotional relationship to a technical, interactive artifact. However, further empirical research will be helpful in order to explore the position and its related questions further. For instance, what are the rules of distance behavior? Do people have, in the sense of proxemics, the same social distances to robots as to other people? We are just at the beginning of this line of research development, but it shows that people even have emotional relationships to "strange" creatures such as the Tamagotchi, and they have a feeling of grief when the virtual creature dies. Nevertheless, it is an "as if" interaction with problematic consequences, as Sherry Turkle (2011) says: "It will begin with our seeing the new life as 'as if' life and then deciding that 'as if' may be life enough. Even now, as we contemplate 'creatures' with artificial feelings and intelligence, we come to reflect differently our own. The question here is not whether machines can be made to think like people but whether people have always thought like machines" (p. 54).

ANTHROPOMORPHIC PERSPECTIVE

Although relationships to social robots cannot be more than quasi-interpersonal, interaction with a robot seems, in so far as we do not have further communication experiences, to occur in the frame of interpersonal communication, using the well known rules, the nonverbal cues and responding towards the well established pattern of physical attractiveness. Apparently, a reference frame for interpersonal communication in human-robot interaction is supposed to be reinforced if the robot counterpart is assembled in a human-like way: "By endowing robots with the capability of communicating with us at a level we can understand, a human level, and by building robots that have at least some appearances of humanlike features, we are rapidly moving towards an era when robots interact with us not only in a functional sense but also in a personal sense" (Levy, 2007, p. 12). At this stage, one should ask what peculiarities differentiate human-robot interaction from human-human interaction. Is there a point existing where the humanlike assembling of a social robot results in the inability to distinguish between the two forms of communication? Dealing with these questions, Masahiro Mori (1970) proposes the hypothesis of the "uncanny valley," assuming that there is no linear relationship between the variables human-likeness and familiarity. One can

assume that people prefer a humanlike appearance of a robotic creature to have a certain relationship. Indeed, increasing human-likeness of the robot causes the rise of a feeling of familiarity; namely, an emotional tendency referring to the artifact (the robot is supposed as real being). However, after a special amount of human-likeness, there exists a critical area, described by Mori as a valley. Now, people begin to feel very uneasy when confronted with such a robot. It is very interesting that the feeling of familiarity increases much more if the social robot moves. In turn, from a special amount of human-likeness, people start to feel much more eerie in the presence of a moving robot than in the case of a still robot. The following diagram illustrates the phenomenon:
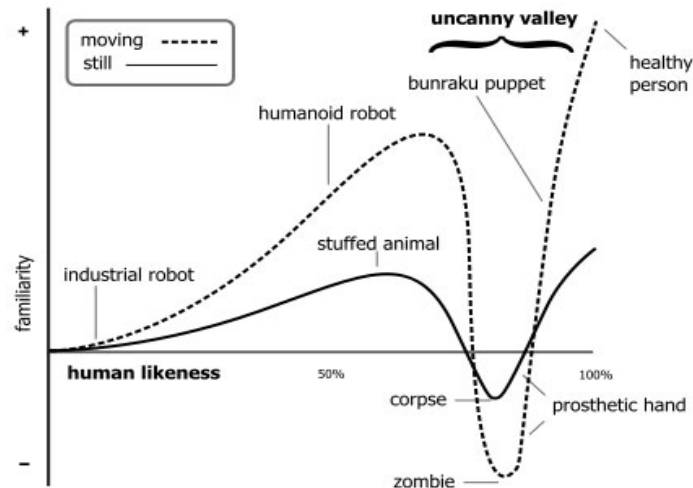

Figure 1. Uncanny valley (Mori, 1970; simplified version of the translated original figure).

The phenomenon of the uncanny indicates that the interaction is framed, meaning, in the words of Erving Goffman (1974), "What is going on here?" (p. 8). In this sense, "The uncanny has to do with the strangeness of framing and boarders, an experience of liminal" (Royle, 2003, p. 3). A "psychology of the uncanny" is not really a new idea. As early as 1906, Ernst Jentsch, a German psychiatrist, mentioned such cognitive processes. Jentsch states that the uncanny originates if a person is confronted with an unfamiliar object or event. In a certain sense, one is not at home but separate from the home – in German, nicht-heimlich. Because of this, it becomes "un-heimlich" – eerie. In those situations, a person cannot fall back on accustomed orientation guidelines, leading to a feeling of uneasiness. Two types of doubt produce especially high discomfort: Doubts about the ensoulment of a creature (finally, it pretends to be alive through its appearance or/and movement) and doubts about the ensoulment of a non-alive machine (a feeling comparable with the appearance of a dead human). The author especially highlights that people feel highly embarrassed if they combine their visual perception of a human-like creature with the attribution of a soul or some sort of bodily functions. As an example, Jentsch describes life-size automatic machines doing complex activities simultaneously, such as blowing a trumpet, dancing, and so on. The more delicate and lifelike they are, the more a feeling of uneasiness they produce (Jentsch, 1906, p. 203). Jentsch's body of ideas was taken up by Sigmund Freud (1970) in his essay about "The Uncanny." In contrast to Jentsch, Freud chooses a psychoanalytic approach. He assumes that uneasiness is based on the result of a psychological suppression process. The uncanny is understood as "previously familiar, well-known. The prefix 'un' indicates the suppression" (Freud, p. 267).

A study conducted in summer 2012 at the University of Erfurt regarding the acceptance of social robots (based on 81 qualitative interviews; average age 26.4 years, 53% female) offers some

hints that there is something uncanny. The more complex (with elaborated functionality) and the more human-like the robot is, the less accepted it is. Partly the results of the study are similar to the results of a study by Halpern and Katz (2012), which found "only that recognition of human likeness in robots influence participants' attitudes, which suggests that it is not the exposure to particular robots but rather the recognition of human attributes that affected subjects' attitudes" (Halpern & Katz, 2012, p. 2). Empirical research has not yet succeeded in proving clear results for the uncanny valley, although it can be supposed that, in general, abnormalities also produce discomfort in a virtual context (see also MacDorman, Green, Ho, & Koch, 2009). As a conclusion, one has to consider that machines must not be too perfect because this could give rise to confusion and even fear (the uncanny valley), and such confusion and fear can especially be found in the early years of human-like machines or automata (see Kraemer, 2008, p. 27). Fortunately, robots have not yet reached such a perfect stage. Therefore, communication between a person and a medium is only successful when the human being is willing to adjust his/her behavior to the inadequacies of the medium (Krotz, 2007, p. 160). Here, by comparing the human-robot interaction with the human-animal interaction an analogy can be drawn. A sound example for this is the relationship between a person and his/her dog. Some dog owners are very proud of their stubborn pets, attributing them to some sort of intellectual personality. The German sociologist Hondrich (1997) explains this phenomenon by stating that humans recognize their own wish to live a self-determined life through observing the rebelliousness of their pets (p. 630). And it seems that this very lack of total obedience – because they do not 'function' as a machine – strengthens the emotional bonds.

TRIADIC RELATIONSHIPS AND HUMAN-ROBOT RELATIONSHIPS: THREE EXAMPLES

People may have distinctive relationships with robots. They act as if they were real, which could be called a 'robot equation' that partly depends on a human likeness of the robot but with tolerances of imperfection. Human-robot relationships, however, do not only involve a relationship with a medium (the robot) but also a communication via the medium, where the medium is not only a third thing but a third entity despite its quasi-social nature. This could be illustrated with the following figure and the examples:
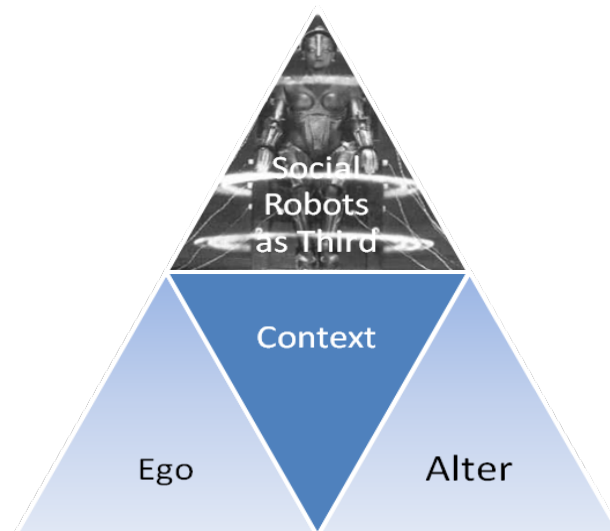

Figure 2: Ego-Alter-Robot triadic relation

An introductory example: Turing and the Third

A triadic perspective on "intelligent machines" can be found already in the concept of the Turing test (or better, judgment) that analyzes the intelligence of a computer and a human being. He proposed a so-called imitation game that was basically described as follows:

> The new form of the problem can be described in terms of a game which we call the 'imitation game'. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels, X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A.' (Turing, 1950, p. 433)

His question here was what would happen when a machine took the A part in this game. The interesting point is that Turing's concern was not a simple estimation of the (person or machine) opposite, but instead, a comparison from an observer's point of view, because he assumed that a comparative view is fundamental when a robot enters into the social field of acting individuals. The following three examples illustrate in which way robots serve as a third. In the first case, the robot is temporarily excluded from the dyad. Case two and three deal with the fact that a robot establishes a dyadic contact between two people or describe the situation of a robot being a team member of group communication.

Communication with robots and their social exclusion

The first example is the Sony's electronic pet AIBO (Artificial Intelligence robot, in the Japanese language, 'partner'), which has already gained some research attention (see e.g., Krotz, 2007, p. 130ff.; Scholz, 2008). AIBO is an example of a social robot that came into private households as an entertainment robot and interactive medium. The electronic dog was accepted because it seemed so real that the human beings behaved as if it was an independent actor – a real pet (Krotz, 2007, p. 136), but actually, it is a special form of communication. As Krotz mentioned, the communication with AIBO results in the projection of AIBO interacting in a human way – it is like an autistic communication (Krotz, 2007, p. 137). What is interesting, however, is not the relationship structure between human and electronic dog but the way people talk about the "dog."

Problematic situations generate communications to clarify why something does not work. This ideally brings solutions to approach the problem in a communicative way. Problems with AIBO arise if the human does not understand AIBO, and vice versa. As a study by Muhle (2008) shows, the communication with AIBO stops in such cases before it continues again. If all attempts at a solution do not work, it generates communication between the attendants. The problems are discussed interpersonally and the robot will be excluded from this. This seems to be a special character of the human-robot communication: The robot is an excluded third, as Muhle confirmed. In the sequences in which the humans try to interpret the statements of the robot, it is not seen as a present and available communication partner anymore (Muhle, 2008, p. 18). Here, human communication differs in a fundamental way. Furthermore, this emphasizes the hybrid status of the robot (Braun, 2000) that loses its "humanity" and is interpreted as the object itself. Such a human behavior where the status of a human subject is denied can only be seen in rare cases of temporary "de-personalization" for example, towards children, mentally disabled people or dementia patients. People may talk about them during their presence as if they were not present. This seems analogous

to the communication with animals (Bergmann, 1988) and refers to a special moment of the third person: the temporary exclusion and the reduction to a thing in an otherwise emotional relation.

Communication via robots – the case of KASPAR as a mediator

The second example refers to helping robots, such as those that read the newspapers or make Internet connections, or robots that serve as mediators enabling communication. This includes the seal-robot Paro (developed by the Japanese researcher Takanori Shibata) that is used in homes for the elderly. Paro acts as a young seal that demands attention and care, and shows how the human does not only deal with the artificial creature, but also increases communication between the patients of the home and the nursing staff. Another example is the museum-robot Fritz (developed within the German research project "Learning Humanoid Robots"), which can communicate with several people at the same time (Weber, 2006). In the broadest sense, these are "assistive robots," which help people in an interactive sense (Feil-Seifer & Matarić, 2005, p. 465). Another example of this type of robots is KASPAR, a "socially capable robotic platform," which Robins, Dautenhahn and Dickerson (2009) discussed in their study *From Isolation to Communication*. It is a robot the size of a child that can make facial expressions, gestures and head movements, but with a controlled complexity. Indeed, it is the intention to de-personalize the face in order to achieve the possibility of creating projections. The robot KASPAR is controlled by a wireless remote control and is used in the therapy of autistic children in well-known environments.

Autistics, it is presumed, are missing the "Theory of Mind," that means the ability to describe their own feelings as well as those of others. According to Dautenhahn (1999) there are problems especially in the "reading" of emotions within reciprocal eye and body contact. It is, as the author indicates, difficult for autistics to look other people in the face (see also Cole, 1999, p. 116). However, the behavior of KASPAR shows a special predictability, as well as a limited expression repertoire. The characteristic of KASPAR makes it easier for autistic children to establish contact to it in the presence of researchers and other children. Studies show that there is a certain generalization of the behavior towards KASPAR. "Not only do they show a level of direct, physical engagement with KASPAR, but they also appear to generalize this behavior at least to co-present others. Thus, children appear to use touching and gazing at KASPAR prior to touching and gazing to co-present others. Furthermore, children appear to show some awareness of co-present others' perception of KASPAR, turning gaze at them following some potential relevant action on the part of KASPAR that they treated as having perceived" (Robins, Dautenhahn, & Dickerson, 2009). In this case, the robot is the third ('person'), which connects rather than separates. Additionally, it evokes a notable behavior of the autistic children, which is also confirmed by the people who are well-known to them.

Group communication and robots – the group context

The last example refers to robots in-group settings. As Goodrich and Schultz (2007) state, "HRI problems are not restricted to a single human and a single robot, though this is certainly one important type of interaction" (p. 22). Group communication that involves robots could be found in rescue operations (e.g., "search and rescue," such as in the context of the World Trade Center disaster) or even in the military where it has a special relevance (Barnes & Jentsch, 2010). As already noted, Reeves and Nass (1996) have suggested that the feeling of "team" may also affect the interactions with media (pp. 158-159). Robots will become a part of human teams and thus bring new moments into the cooperation among the members of a team. Addressing such a group

communication, Thompson and Gillan (2010) state, "Researchers have effectively argued that emerging automated entities like robots and expert systems can serve as a new kind of team member – albeit technological – in situations where coordination, shared goals of team members, and interdependence among humans and technology exist" (p. 69). In such a group communication that involves humans and automated entities, according to the authors, it is important to consider social factors such as the extent to which those robots conform to the already existing rules as well as to a human appearance (one just has to think of the "uncanny valley"). Another important point of this example is that the robot will not only be a part of a triadic relation, but it is also located within a group structure. Although Georg Simmel stated that the third person brings the important change and the new quality, which is not essentially affected if a fourth person comes along, it is important to make a distinction between a robot as the third and a robot as a group member because of a distinctive collective orientation In addition, as Singer (2009) mentions in his inspiring book *Wired for War*, humans develop strong emotional bonds with such "warrobots." So-called improvised explosive devices (IEDs) are extremely dangerous things, and it is the duty of the EOD team (Explosive Ordnance Disposal) to "hunt" them as a military bomb squad. "Scooby-Doo" was the team's PackBot in Iraq, and one day a critical event happened: Scooby Doo was "killed" – or rather blown up by an IED. Unfortunately, the specialists were not able to repair it (him?). The EOD who carried the box with the robot parts into the repair facility was terribly upset – he did not want a new machine, but he wanted Scooby-Doo back. Singer concluded as follows: "And yet while new technologies are breaking down the traditional soldierly bonds, entirely new bonds are being created in unmanned wars. People, including the most hardened soldiers, are projecting all sorts of thoughts, feelings, and emotions onto their new machines, creating a whole new side of the experience of war" (p. 338).

THE THIRD PERSON IN THE CONTEXT OF INTERPERSONAL COMMUNICATION

If a third person – or even a robot – enters the stage of interpersonal communication something changes, be it enriching or restricting. Traditional communication models tend to take a dyadic perspective, a process where Ego and Alter, a sender and a receiver communicate in a reciprocal way. This model is not necessarily inappropriate but rather incomplete because communication involves not only a shared (although not always consensual) orientation towards a third object, as illustrated by the A-B-X model by Newcomb (1953), but also the (mere) existence – be it the physical presence or the anticipated existence – of a third person that influences the communication process. Although there has been certain development in understanding human communication process as discussed above, Becker (2006) points out that the understanding of human-machine interaction is still under development. Becker states, "It seems as though most concepts of man-machine interactions still start with the assumption of a simple transmitter-receiver model, according to which the message sent by the transmitter arrives at the receiver exactly as originally intended and is interpreted in accordance with the transmitter's intention" (p. 43). However, human-machine interaction would benefit from taking a relational perspective. According to Becker, the question is not what a robot can perform or is able to do, but is about its skills as an agent in a social network; that is, in a field of social relations where a robot is an integral part. This introduces another relevant aspect; that is, the presence of others and the significance of third persons who present the frame of communication, and also, are framed on their own. And eventually, the meaning of the robot is not negotiated with the robot as social entity, but together with others in a process of continuous reciprocal indication.

One example of our research is underlining this assumption. An explanatory study, done in summer 2012 at the University of Erfurt, based on the method of introspection and a research diary, looked at the emotional relationships toward a baby simulator, known as RealCare Baby. One female student adopted this baby, called Lilly, for one week. During this week an emotional relationship between the 'mother' and the electronic child emerged. This was also influenced by the social environment, for instance the integration of the baby simulator into the already existing relationship with a boyfriend. The boyfriend not only accepted the social experiment but also showed some emotional involvement (for instance kissing the 'baby' on the forehead), ended up strengthening the relationship in a triadic sense.

The influence of a third person is well known not only in the case of the mother-father-child relationship where a baby may fundamentally change the already existing relationship, but also in the psychological field where the third is of special relevance such as the case of therapist or psychiatrist. From a sociological point of view, it was Georg Simmel who especially called attention to this social prototype. To understand the phenomenon of the third, some basic assumptions should be mentioned.

The third person is significant whenever knowledge is shared with another and is hidden from another. Simmel's (1995) comment on secret addresses the point: If there is a secret triads emerge (p. 383ff; see also Nedelmann, 1985). In Simmel's remarks, the third person is especially relevant in the context of the (quantitative) determination of a group (see further: Freud, 1976). With a third person, there is an additional person in a quantitative sense. Consequently, the relation to others is changed (Hessinger, 2010, p. 65). The constellation of the actors acquires a new quality that does not fundamentally change even if a fourth or fifth comes along. The third person makes change of alliances possible. Therefore, the third person has the characteristic to connect and to separate. Simmel (1995) further stated:

> Where three elements A, B, and C build an alliance, besides the direct relation between, for example, A and B, an indirect one is gained, developing through the common relation of A and B in regard to C. This is a formal sociological enrichment. In addition to the connection by the straight and shortest line, every two elements are furthermore linked by a fractured one. Points where these elements do not have a direct contact are put in touch through the third element, which respectively turns a different side towards these elements but therewith nevertheless integrates them within the unity of its personality… The direct connection is not only strengthened through the indirect connection, but disrupted as well. There is no howsoever intimate relation, where one is not occasionally perceived as a perpetrator by the other two. This is also true for the case that only concerns the individual's participation in certain sentiments, which only unfold their 'being focused' as well as their bashful delicateness within the focused gaze from eye to eye. Every sensitive conjointness of two is thus irritated by a bystander. (pp. 114-115)[1] [2]

The third person is seen as a sociological prototype (Freund, 1976). Thereby, the meaning of a dyadic intersubjectivity is not excluded, but the figure of the third person is necessary to understand the moment of institutionalization. In this way, a kind of stability is established, so that the individual arbitrariness is socialized at the same time: Sociality as a dyadic-structured

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[1] Simmel expiates the third person three times (Simmel, 1995, p. 125ff; see also Bedorf, 2003, p. 129ff): a) The impartial and mediator, b) the smiling third (tertius gaudens), and c) an advantage for himself, a winning and dominating third (divide et impera).

[2] This quotation was taken from the German text as translated and interpreted by the author.

phenomenon is unstable. Only through the addition of the third person does it obtain enough consistency (Lindemann, 2006, p. 140). A group of three does not require the presence of a single individual. The elements can be changed without the triad losing its functionality. According to Bedorf (2003), this is not possible in a dyad because the irreplaceability of both individuals is important for the dyad (p. 123). He says that the continuity of a relation is a central condition of the dyad; therefore, it needs both individuals to exist.

In this way, the analysis of specific interpersonal relations will be more complex. It shows that these are included in a communicative structure where the individual acts with the view to a counterpart, but also thinking about potential others. As Simmel said, a third person can both connect and separate. In the example of a love story, this could be a marriage broker who helps two people to be a couple. However, a third person can also separate or cause trouble in a relationship, so that the couple breaks up in the worst case (see also Lenz, 2010). Intangible beings, such as robots, can, as the examples illustrate, also be located in this context: the robot could be included and excluded, and also, include and exclude. In order to obtain a deeper understanding of the multiple facets of an ego-alter-robot interaction, further research is necessary. Nevertheless, the question at hand is also an analytic one: It depends on who the third person is in such a relational analysis from the view of the researcher. In this case, and based on a social acceptance of the robot as an interaction partner, a constellation of ego and alter is confronted with the robot as the third (person), the robot standing opposite to such a constellation. It is the question of how an existing social constellation considers the robot, how it will be involved in this relation, and which social status the robot acquires in this existing interpersonal structure. In the presence of the robot as third person, what is the behavior of Ego and Alter like? If we keep Simmel in mind, will the robot connect or separate them? Will it initiate relations between ego and alter or will it isolate them? And finally, is it possible that a robot can be a member of a social group or a team? Is the robot an intruder or a legitimate third? Otherwise, a (real) person could be seen as a third and be looked at whether or not a robot is included or excluded (think of the case of AIBO that was partially excluded). Such a comprehensive analysis of the ego-alter-robot interaction will eventually offer insights into the dimensions of robots as social agents.

PROSPECT: MEDIA ANALYSIS AND THE THIRD PERSON

A scientific perspective offers a distinctive view of the world; it includes some aspects but also excludes others. A view of communication is often based on a dyadic perspective where ego and alter are in an interactive relationship, but such a perspective excludes social influences based on the existence of third persons. Since social robots are at the center of a sociological analysis (e.g. Böhle & Pfadenhauer, 2011), this becomes more obvious. The view of robots as interactive media and as a third entity refers to a complex view of media, which cannot only be a subject of discussion in dyadic contexts. There is not only an interaction with the medium but also an interaction via the medium where the medium is a third thing as well as a third social entity (or interaction partner). This does not mean to suspend a dyadic analysis, but to enrich it by adding a perspective of the third. In other words, it is an integrative perspective towards media behavior, including interaction with media such as social robots that are socially contextualized. It is possible to decline and analyze this in the context of every kind of media-oriented behavior, from television to mobile communications, and also, from communication through media to communication with media. All together, it refers to a way that does begin with but not end with dyadic communication models. Who the third person is will be an analytic question, and therefore, a question of the scientific point of view. But if the third person is included, the perspective of interaction and communication will be

expanded for social moments. The field of the human-robot interaction is one example, and also a test for the functionality of a triadic analysis.

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BIOGRAPHY

Joachim R. Höflich studied economics, social science and communication sciences. He worked at the universities of Augsburg, Hohenheim, Bamberg and Munich. Since September 2002 he is Professor for Communication Science with a focus on media integration at the University of Erfurt. Research interests include media use and media effects; 'new' communication technologies and changes of mediation cultures; theory of mediated (interpersonal) communication. Latest publication: Mobile Kommunikation im Kontext. Studien zur Nutzung des Mobiltelefons im öffentlichen Raum (Mobile communcation in context. Studies of mobile phone usage in the public sphere). Frankfurt/Main: Peter Lang.