

# **“HE DOESN’T ASK FOR HELP BECAUSE HE IS FROM CHINA” – HOW PEOPLE MAKE SENSE OF COMMUNICATION BEHAVIOUR IN GLOBAL VIRTUAL TEAMS**

*Research paper*

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## **Abstract**

*Global virtual teams (GVT) continue to struggle with the challenges of communication. In order to understand and study GVT actors’ behaviour in GVTs, it is imperative to understand what they attribute their own and others’ communication behaviour to. We examined a multinational corporation, with its headquarters in Europe and conducted 11 interviews with GVT actors. With our qualitative research we investigated how GVT members explain their own as well as others’ communication behaviour in GVT. This study enriches the existing GVT literature by providing information on how actors make sense of their own social world in a different way than they make sense of their co-workers’ social world. We show that there is a mismatch in the types of explanations given for the interviewee’s own communication behaviour and others’ communication behaviour. One example of the mismatch is that GVT actors tended to explain their own constructive communication behaviour, but placed greater emphasis on explaining other persons’ defensive and negative communication behaviour. Another example is that GVT actors explain others’ communication behaviour with the other persons’ cultural background, but not their own communication behaviour. Our study contributes to research on communication behaviour in GVTs.*

*Keywords: Communication behaviour, Electronic communication media, Global virtual team, Qualitative research, Self-attribution, Social attribution*

## 1 Introduction

Global virtual teams (GVT) have for decades been recognized to suffer from a number of different challenges (e.g., Huang et al., 2010; Järvenpää and Leidner, 1999; Oertig and Buergi, 2006; Sarker et al., 2011; Staples and Webster, 2007). Amongst them, communication behaviour continues to represent such a challenge. Communication in GVTs is predominantly based on electronic communication media (CM) (Hertel et al., 2005), and these media pose certain restrictions to communication as they, for example, eliminate visual cues about emotions (Gibson and Manuel, 2003). The importance of communication behaviour in GVTs has been established in previous research. For example, trust among GVT members was found to be important for information sharing (Ridings et al., 2002). As GVTs are dispersed, this trust is usually created based on the communication within the team (Sarker et al., 2011), and certain communication behaviours either help in creating or break trust in GVTs (Järvenpää and Leidner, 1999). Project delivery risks are greater in GVTs than in face-to-face (F2F) teams due to communication breakdowns (Daim et al., 2012).

Cramton and Orvis (2003) found that people in GVTs are less likely to try to change a difficult situation, if they think that the other person rather than some outside factor is the reason for the problem. In other words, how team member A explains team member B's behaviour affects member A's own behaviour. Sarker et al. (2011: 284) – referring to Zolin et al. (2004) and Ahuja et al. (2003) – summarize: “given that distributed teams utilize electronic media rather than face-to-face interaction, the only behavioural evidence available to team members is the communicative behaviours of other members.” Thus, when in a GVT a person's behaviour depends on how (s)he interprets or explains the other's behaviour, it is mainly the other's *communication* behaviour that is available for interpretation. Malle (1999: 23) states: “By explaining behaviour, people make sense of the social world, adapt to it, and shape it. Behaviour explanations are thus themselves a social behaviour that must be described and explained.” However, people usually explain their own behaviour differently than others' behaviour, which is referred to as actor-observer bias (Choi and Nisbett, 1998). With the present research, we want to provide deep insight into how people make sense of their own and others' communication behaviour in a digital work setting. Malle and Knobe (1997) call for research that explores “jointly which behaviours people explain and how they explain them”. Given the fact that communication challenges persist in GVTs despite much research on the topic, this is a clear research gap which the present study addresses. Specifically, the research is guided by the following question: “*How do global virtual team actors explain their own and others' communication behaviour?*”

The main contribution of this paper is to show differences in how GVT actors explain their own and others' communication behaviour – differences in both the types of communication behaviour they explain, and in the types of explanations they give for their own and others' communication behaviour. We show that GVT actors make sense in different ways of their own social world and the other GVT actors' social world. Our findings have implications for leading GVTs and working in GVTs, for designing IS, and for future research on communication behaviour in GVTs.

The paper proceeds as follows. In Section 2, we review previous research on communication challenges stemming from the use of electronic communication media, summarize research on communication behaviour, and summarize selected concepts from attribution theory which we apply as an analytical lens. In Section 3, we describe the research methodology. In Section 4, we present our findings, and discuss them in the light of previous research in Section 5. In Section 6, we conclude the paper with a summary of the contribution, research limitations and future research avenues.

## 2 Theoretical background

In the following sections, we introduce a definition of GVTs and present computer-mediated communication (2.1), which is part of working in a GVT. We also synthesize research on communication behaviour and provide a high-level classification of types of communication behaviour. In addition, we summarize how previous research has tried to “explain” communication behaviour (2.2). We then describe those concepts of attribution theory which we apply as a lens when analyzing the empirical data (2.3).

## 2.1 Communication challenges stemming from the use of electronic communication media in GVTs

Previous research has presented a number of different definitions of virtual teams, but according to Hertel et al. (2005), common to these definitions is that virtual teams “consist of (a) two or more persons who (b) collaborate interactively to achieve common goals, while (c) at least one of the team members works at a different location, organization, or at a different time so that (d) communication and coordination is predominantly based on electronic communication media (email, fax, phone, video conference, etc.)”. *Global* virtual teams, in addition, are usually dispersed across different countries or continents (Kankanhalli et al., 2006). Previous research has identified numerous problems in communicating over distance and with help of electronic CM in GVTs, and the consequences this has for information/knowledge sharing/exchange (Roberts and O’Rilley, 1974; Bartelt and Dennis, 2014; Cramton, 2001), the arising and solution of conflicts (Ayoko et al., 2012; Montoya-Weiss et al., 2001; Hinds and Bailey, 2003; Kankanhalli et al., 2006), satisfaction of team members and team success (Decker and Rutte, 2007) and communication breakdown (Daim et al., 2012). Electronic CM can be synchronous or asynchronous, and they can differ concerning their media richness. For processes that require transmission of information, asynchronous media (fax, documents) are better suited, whereas for processes that require information processing and discussion about how people interpret information, synchronous media (video conference, telephone conference, face-to-face communication) are better suited (Dennis et al., 2008). Kankanhalli et al. (2006) found that task conflict arises, amongst other reasons, due to the lack of feedback immediacy in asynchronous communication. Previous research also found that the type of communication medium used affects how people communicate. Regarding media richness, Hambley et al. (2007) show that there was a lower level of constructive interaction in in video-conference and in chat-teams (lower media richness) than face-to-face teams (high media richness). According to Cramton (2001), it is common that members in virtual teams rather blame the other person than the situation when a problem arises, due to the lack of situational information (because of geographic dispersion) and cognitive overload. This affects communication in virtual teams, as people “are less likely to try to modify a problematic situation if they perceive individuals as the cause of problems.” (Cramton and Orvis, 2003: 223). To summarize, GVTs continue to struggle with communication challenges stemming from the necessity to use electronic CM. This provides further motivation for our research.

## 2.2 Communication behaviour categories

In this section, we provide a categorization of communication behaviour – which we will then apply in Section 4.1 – and a brief review of how previous research has “explained” communication behaviour.

Unfortunately, no single, simple classification for communication behaviour exists. For the purpose of the present research, we provide a brief synthesis of how communication behaviour in GVTs can be classified. This synthesis is based on both GVT-focused research, as well as more general (team) communication research. We identified two high level categories of communication behaviour – communication/interaction style, and communication dimension.

First, the *communication/interaction style* can be constructive or defensive. The constructive versus defensive (including passive/defensive and aggressive/defensive) dichotomy has been developed in the context of organizational culture (Cooke and Szumal, 1993). Constructive culture/norms have been found to be positively related to organizational outcomes such as quality of products and services, limited turnover, and quality of the workplace, whereas defensive norms have been found to be negatively related to these outcomes. Defensive norms also are negatively related to role clarity, fit, and job satisfaction. (Balthazard et al., 2006). In the present paper, we follow Klein et al. (1995) who equate negative behaviour to passive/defensive and aggressive/defensive behaviour, and positive behaviour to constructive behaviour. We thus use the terms positive and constructive behaviour interchangeably, and negative and defensive interchangeably in the remainder of this paper. Examples of constructive communication behaviour are the open expression of ideas and clear communication (Hambley et al., 2007; Warketin and Beranek, 1999; Decker et al., 2008) and information sharing and information exchange (Ridings et al., 2002; Peters and Mantz, 2007; Staples and Webster, 2008; Wang and Haggerty, 2009; Klitmöller

and Luring, 2013; Mohr and Spekman, 1994; Warkentin and Beranek, 1999; Warkentin et al., 1997; Van den Hoof and de Ridder, 2004). Examples of *defensive* communication behaviour are aggressive and passive behaviour (Potter and Balthazard, 2002; Brees et al., 2013; Hambley et al., 2007) and communication breakdown (Daim et al., 2012; Björn and Ngwenyama, 2008).

Second, we found the three *communication dimensions* of *communication frequency* (see Järvenpää and Leidner, 1999; Järvenpää et al., 2004; Gajendran and Joshi, 2012; Espinosa et al., 2015; Yashima et al., 2004; Mohr and Sohi, 1995), *communication quantity* (e.g., Tsai and Bagozzi, 2014) and *communication quality* (e.g., Tsai and Bagozzi, 2014; Chang et al., 2011; Mohr and Sohi, 1995; Mohr and Spekman, 1994) to have been addressed in previous research.

Previous research has also studied how different factors affect communication behaviour. We want to give just a few examples here. Group cohesiveness has been found to lead to more open and frank expression of ideas and feelings (Warkentin and Beranek, 1999), and stability and intentionality attributions, as well as being prone to negative mood lead to more aggressive communication (Brees et al., 2013). Communication frequency affects perceptions of communication quality (Mohr and Sohi, 1995), and we-intentions positively affect the quality and quantity of member's contributions (Tsai and Bagozzi, 2014). Trust leads to open information exchange (Roberts and O'Rilley, 1974), to increased levels of shared knowledge (Nelson and Coopriider, 1996), and positively affects the intention to give and get information through virtual community (Ridings et al., 2002).

The majority of previous research that studied the effect of something on communication behaviour in a virtual setting has been either quantitative (Ridings et al., 2002; Hambley et al., 2007; Tsai and Bagozzi, 2014) or conceptual (Hinds and Bailey, 2003; Peters and Manz, 2007) in nature, with a few exceptions that applied qualitative approaches (e.g., Kankanhalli et al., 2006). Therefore, the "explanations" for the behaviour mostly were pre-defined variables. Our research differs from and complements these studies by taking a qualitative research approach that does not limit these possible explanations beforehand, thus allowing for deeper insight into explanations of communication behaviour in GVTs.

### 2.3 Attribution of behaviour

In the present research, we are interested in how GVT actors explain communication behaviour and what communication behaviours they explain. The attributional process is the process by which people make inferences about the causes of events and behaviour (Cramton and Orvis, 2003). These inferences or perceptions of causes are called attributions. Attributional theories concern the consequences (i.e., behaviour, affect, and expectancy) of attributions (i.e., perceived causes) and assess or manipulate the perceived causes and measures their effects on behaviour, feelings, and expectancies (Kelley and Michela, 1980). In the present study, we focus on assessing the perceived causes for communication behaviour in GVTs, but without manipulating them. Attributions can refer to other-perception (i.e., perceived causes of other persons' behaviour), called *social attribution*, or self-perception (i.e., perceived causes of one's own behaviour), called *self-attribution*. Interpretations about behaviour play an important role in determining reactions to the behaviour. (Kelley and Michela, 1980.) Heider is often described as the "father of attribution theory" (Sanderson, 2010), and attribution theory is an established cognitive psychological approach (Savolainen, 2013). Weiner (1985) argues that the identification of cause(s) might enable effective management, or suggestions for a guide for future action could be given. In the present study, we focus on attributions (i.e., the perceived causes for certain communication behaviour in GVTs) and a specific type of consequence (i.e., the communication behaviour exhibited in the GVT). We want to emphasize that we do not apply attribution theory in its "traditional" sense – which is to study the three common properties of locus, stability, and controllability to explain success and failure (see Weiner, 1985). Instead, we directly look at the (perceived) causes for communication behaviour in GVTs in an attempt to get an in-depth understanding about how people make sense of GVT work, by identifying the main types of communication behaviour being explained, and the main types of reasons/attributions used to explain behaviour.

### 3 Methodology

As our intent was to understand how GVT actors explain communication behaviour and how people make sense of behaviour in a digital work setting, we chose a qualitative case study approach (Klein and Myers, 1999; Eisenhardt, 1989; Walsham, 1995) to get a comprehensive view on this phenomenon. Eisenhardt (1989) recommends the case study approach if “little is known about a phenomenon, current perspectives seem inadequate because they have little empirical substantiation, or they conflict with each other or common sense” (p. 548). Although GVT actors’ behaviour in GVTs has been studied for many decades (e.g., Järvenpää and Leidner, 1999), the aspect what GVT members attribute especially their own communication behaviour to, is yet scarcely studied, and therefore the case study offers a suitable research method for this study. We examined a multinational corporation, Alpha (a pseudonym), with its headquarters in Europe. Alpha has sites in Europe, North America and Asia, and has used GVTs since the late 1990s.

**DATA COLLECTION:** Between September 2012 - December 2014 we interviewed GVT actors. We conducted two rounds of interviews with most interviewees. Results from the first round of interviews on GVT leadership were published in Väyrynen and Aalto (2013) and Väyrynen and Hekkala (2015). In the second interview round, those 4 team leaders and 7 team members who agreed to be interviewed a second time were asked to think beforehand about 1-4 situations in which team dynamics changed and about how they noticed that the virtual team dynamics or interaction within the team changed in one way or another, what they thought the reason for the change was, how the change affected the interviewee and others, how it affected the virtual team as a whole, and what the role of “virtuality” in this change was. We asked clarifying questions about situations in which changes occurred, feelings and roles involved, and the actions and reactions of the different actors involved in the situation.

For the present paper, we analyzed the eleven interviews of the second round of interviews. All interviewees belonged to GVTs responsible for software support, software development, software testing, as well as process redesign (including process redesign for, e.g., software development units). All interviewees were located at the same site in Europe. As culture specifies “ways to think about the self and social behaviour that have been reinforced in the past” (Triandis, 1989: 511), it was important to have interviewees coming from the same organizational and cultural context to identify patterns in how GVT actors make sense of their own / others’ social world. We chose interviewees with a diverse background. Interviewees had between one and eleven years of experience of working in GVTs, with GVT sizes varying between 4 and 50 persons. Interviewees represented four levels of organizational hierarchy, ranging from team members with no subordinates, to superiors who were responsible for several clusters of GVTs. CM these teams used were teleconference, email, instant messaging and video conference. The average interview length was 116 min. A de-naturalized transcription process was employed (Oliver et al., 2005). Direct quotes in this paper are our translations to English.

**DATA ANALYSIS:** We analyzed the data by using attribution theory (e.g., Heider, 1958; Kelley and Michela, 1980) as a lens to describe the common ways how interviewees explain their own and other persons’ communication behaviour in GVTs. In the first phase, we extracted all quotes where interviewees gave a reason for either their own (i.e., self-attribution, 233 instances) or another person’s (i.e., social attribution, 390 instances) behaviour. In the second phase, we extracted from these instances those quotes which concerned communication behaviour. In the third phase, we identified for each quotation the communication behaviour of others and of the interviewees themselves (including anticipated, hypothetical or enacted behaviour), as well as the reasons (i.e., attributions) given by the interviewee for the specific behaviour. This resulted in the end in 161 instances of social attributions (i.e., where interviewees gave reasons for another person’s communication behaviour), and in 130 instances of self-attributions (i.e., where an interviewee gave reasons for his/her own communication behaviour). We then grouped the *communication behaviour* instances into 15 categories arising from the data, some of which were further divided into sub-categories (resulting in 32 categories in total). Similarly, we grouped the *social and self-attributions* into categories. Finally, in order to be able to identify patterns in how interviewees made sense of their own vs. others’ social world in GVTs, we extracted those com-

munication behaviour categories and those attribution categories for which at least 3 different interviewees (so, more than one-fourth of all interviewees) gave examples. (If behaviour category “admitting” was mentioned by two different interviewees, and “not admitting” was mentioned by three different interviewees, then also “admitting” is listed in our findings as both can be seen to represent category “(not) admitting”). We made this extraction for self-attributions and social attributions separately. The resulting communication behaviour and attribution categories are those we will present. We classified each category into the communication behaviour categories identified in Section 2.2. Table 1 shows a few selected examples of the analysis of instances of social and self-attributions and our classifications of communication behaviour and attribution.

Quotation	Communication behaviour category	Attribution category
Example 1 (Social Attribution): You have to think about this through culture. Because a person from our culture somehow can protect himself and say ‘I cannot do that’, but in China and India it is a bit difficult for people to say that. (Leader 3)	Not admitting [defensive/ negative behaviour]	(Own) cultural background
Example 2 (Social Attribution): The team’s internal communication is, at the stage where the team spirit is low, it was easily visible because for example on the posting list there were much less messages. And there was not much unnecessary talking in the team meetings. But now there is lots of discussion on the message board. (Leader 1)	Small communication amount [defensive/ negative behaviour]	Low team spirit/ atmosphere
Example 3 (Self-attribution): We aren’t many people working on the same tasks. My area of responsibility is more or less only in my responsibility, so I don’t have to interact with others that much because I decide myself how to do things. (Member 3)	Small communication amount [defensive/ negative behaviour]	Task unrelat- edness
Example 4 (Self-attribution): I could have said ‘no way, we will use this one solution, end of discussion!’ But I didn’t want to do that because I wanted to get also those specialists who had developed the other solution to get on board. (Leader 2)	Constructive communication style [con- structive/ positive be- haviour]	Affecting other’s behav- iour

Table 1. Examples of analysis of instances of communication behaviour and attribution pairs

## 4 Results

In this section, we first present the communication behaviour categories we identified in the data and compare them from a social vs. self-attribution point of view (Section 4.1). Second, we present our findings regarding the explanations of communication behaviour, i.e., attribution categories, and compare them from a social vs. self-attribution point of view (Section 4.2). Third, we make a cross-comparison between social and self-attributions for specific communication behaviour categories (Section 4.3).

### 4.1 Observations regarding communication behaviour categories

In this section, we present and discuss our main findings regarding communication behaviour categories. We summarize our findings in Table 2. The “Social attribution” field contains behaviour categories for which we found examples of social attributions made by at least three different interviewees, but for which we found examples of self-attributions made by fewer than three different interviewees. Categories for which *only* social attributions but no self-attributions were made are marked with an asterisk (\*). The “Self attribution” field contains behaviour categories for which we found examples of self-attributions made by at least three different interviewees, but for which we found examples of social attributions made by fewer than three different interviewees. Categories for which *only* self-attributions but no social attributions were made are marked with an asterisk (\*). In addition, Table 2 shows for which behaviour categories both social- and self-attributions were made by at least three interviewees. We also present the number of instances of a certain communication behaviour category in the data, as well as the number of different interviewees who gave an example of that category. These numbers are *not*

intended to allow for a quantitative analysis of the data, but *only* to better illustrate that certain communication behaviour categories were much more prominent than others. Next, we present and discuss our main findings concerning differences between communication behaviour for which social vs. self-attributions were made.

Most of the communication behaviour categories for which attributions were made can be seen to belong to the constructive versus defensive communication style distinction, as indicated in Table 2. The “constructive communication style” category contains all those instances/examples where the communication behaviour was constructive but could not be classified as any of the other constructive communication behaviour categories. Likewise, the “defensive communication style contains all those instances/examples where the communication behaviour was defensive/negative but could not be classified as any of the other constructive communication behaviour categories.” Attributions have also been made for category “small communication amount”, which can be seen to represent communication quantity. Interestingly, no attributions were made for communication quality and communication frequency. We want to emphasize and discuss three main findings regarding communication behaviour categories.

First, we found that several communication behaviour categories existed for *only* social or *only* self-attributions. Here, we want to emphasize two communication behaviour categories for which only self-attributions were made: “including behaviour” and “adapt own communication behaviour to the other person”. Interestingly, in all cases the interviewees attributed their own “including behaviour” to another person’s inactive behaviour: “Of course I always try to activate those who are a bit quieter, I ask them more things then, for example. So, often I know already beforehand what has happened, and if I notice that a team member [...] just does not remember to tell it, then I ask ‘hey, how was it with that thing’, and then he says ‘aaah, right’.” (Leader 4). We also found that adapting one’s own communication style to, e.g., preserve a good team spirit or prevent someone from getting hurt, was enabled by familiarity with the other person.

<b>Social attribution</b>	<b>Self-attribution</b>
<p><b>Constructive:</b> Replying (6/5); Asking (e.g., for help) (5/5); *Admitting (e.g., that task cannot be completed) (3/2); *Taking a task pro-actively (3/3)</p> <p><b>Defensive:</b> Defensive communication style (12/8); Not informing, sharing (12/6); Not replying (5/5); Not asking (e.g., for help) (5/4); Unfriendly communication style (5/4); *Not admitting (e.g., that task cannot be completed) (5/3), Not contacting others (4/3);</p> <p><b>Other:</b> *Body language (5/4); Barrier to communicate (7/5)</p>	<p><b>Constructive:</b> Constructive communication style (14/6); *Including behaviour (5/4); Clear communication style (5/3); *Adapt own communication behaviour to the other person(s) (5/3); *Seek Information (4/3)</p>
<p><b>Behaviour categories for both social and self-attribution:</b></p> <p><b>(Foremost) Constructive:</b> Not criticize, complain, question [(7/5), (5/3)]; Contacting others [(5/3), (3/3)]; Socio-emotional communication [(4/3), (6/4)]; Informing, sharing [(10/5), (6/6)]</p> <p><b>(Foremost) Defensive:</b> Criticize, complain, question [(5/3), (7/5)]; Excluding behaviour [(4/3), (5/3)]</p> <p><b>Communication quantity:</b> Small communication amount [(5/4), (3/3)]</p>	

Legend: (x/y) = (“number of examples in the data”/“number of different interviewees mentioning the attribution category”) [(x/y), (x/y)] = [“ratio for social-attribution in form (x/y)”, “ratio for self-attribution in form (x/y)”]

Table 2. Communication behaviour categories for which attributions were made

Second, and maybe not that surprisingly, interviewees rather explained their own constructive communication behaviour (e.g., clear communication style, seek information, constructive communication style), but other people’s defensive (e.g., unfriendly or negative communication style, not admitting, not informing/sharing, not asking, not replying, not contacting others) communication behaviour.

Third, in connection to our finding that there was a tendency to rather explain one’s own constructive communication behaviour instead of defensive behaviour, we also want to emphasize another finding

concerning the distinction between constructive and defensive communication behaviour. Even though in general a certain behaviour, considering the interviewees' intention / explanation for the behaviour, was clearly constructive/positive in our study within the interview context (e.g., constructive communication style, friendly communication style, pro-actively contacting others, helping behaviour, including behaviour, informing and sharing, pro-actively taking a task) or clearly defensive/negative (e.g., negative communication style, not answering, not admitting), there were several examples where the same type of communication behaviour was positive under certain circumstances, negative under other circumstances, and neutral under still different circumstances. We want to give here four examples: "excluding behaviour", "small communication amount", "asking (e.g., for help)", and "informing, sharing".

**Excluding behaviour** can be positive when, for example, other persons are excluded from a discussion in order to provide a more confidential discussion possibility for a certain person (e.g., Asians in order to not have them lose face). Leader 2 gave the following example, explaining why it is better to arrange a private discussion session with his Asian team member, excluding the team member's local line manager first. With this the leader wanted to prevent a situation where the team member's line manager would suggest a different technical solution (out of not knowing better) than what the team leader and team member would have agreed on: *"My project member there cannot have a different opinion publicly than his line manager. Therefore, I cannot press him from here any further, because for my team member it is a bigger loss of face if he disagrees with his line manager there. Then he has to give the correct, the better technical decision a lower priority, because the way decisions are made in the Asian culture is different from ours."* On the other hand, excluding behaviour can be negative in the case when, for example, a team leader is excluded from the discussion between team members because of some personal conflict with the team members.

**Small communication amount** can be positive in the case where persons are so familiar with each other and the work task that no detailed instructions have to be given from one person to another in order to complete the task. It can be negative in the case where a small communication amount is seen to stem from a bad team atmosphere or a person's motivational problems. It can be neutral in the case where the small communication amount stems from the fact that there are no common work tasks between two persons and therefore there is no need for more communication (see Example 4 in Table 1).

**Asking** in most cases was related to asking for help, and was seen as positive behaviour in GVTs. However, there were several instances where "asking" was interpreted as negative, in cases where it was seen as micro-managing and a sign of mistrust from, for example, an upper manager: *"The other [manager] was more controlling, aggressive. [...] He felt maybe as being a bit excluded and wanted to know everything, even though it was none of his business, he did not manage any more but went into the smallest details. It was awfully difficult and slowed down our work [...]. He did not trust us."* (Member 2).

**Informing and sharing** was in almost all instances positive, and not informing and sharing negative. However, where a team member did not share certain detailed technical information in the team meeting in order to not "steal" valuable time from other team members who the details did not concern, or where a person did not share another person's personal information with other team members, the "not informing and sharing" is actually constructive when considering a person's reason for not sharing.

To summarize, in this section we described several difference in what kind of communication behaviour was explained for oneself vs. for other GVT actors. This provides evidence for how GVT actors make sense in a different way of their own and others' social world in a GVT.

## 4.2 Attributions for Communication Behaviour in GVTs

In this section, we present and discuss our main findings regarding attribution categories. We summarize our findings in Table 3. The presentation logic follows that of Table 2. Table 3 shows those social- and self-attribution categories that were made by at least three interviewees. Categories we identified *only* for self-attributions or *only* for social attributions are marked with an asterisk (\*). As in Table 2, we also present here (for illustrative purposes only) the number of instances of a certain attribution category in the data, as well as the number of different interviewees who gave an example of that category. Important



to notice is that “own” refers to the person whose behaviour the interviewee is explaining. Thus, for social attributions it refers to another person, whereas for self-attributions it refers to the interviewee. For example, “own cultural background” as self-attribution refers to the interviewee’s cultural background, whereas as social attribution “own cultural background” refers to another person’s cultural background. When comparing the social and self-attributions, we made three specifically interesting findings. We will describe them next.

Social attribution	Self-attribution
Own cultural background (26/8); Face-to-face meeting event (14/6), No face-to-face meeting event (4/1); *Own disinterest, demotivation, being uncommitted (13/5); Coordination effort (7/5); *Co-location (4/4); *Something that is shared (work history, interest, task, time-zone) (5/5); *Own negative feeling (3/3); *Own satisfaction (feeling) (3/3); *Own perception about importance of knowledge/ skills/ info shared (3/3); Bad team spirit/atmosphere (4/3); Good coordination efforts (3/3); Own discontentedness (feeling) (3/3)	(No) familiarity (7/6); *intention to affect other’s behaviour (11/5); *To progress own work task (5/5); other’s inactive behaviour (5/4); *Tasks being unrelated (6/3); Other’s knowledge/ skill level (5/3); Other’s cultural background (4/3); *(perceived) norms (3/3); Other’s feeling (3/3)
<b>Attribution categories for both social and self-attribution:</b> Own feeling [(14/6), (5/4)]; Previous experience with other person (other’s behaviour) [(5/4), (13/4)]; Own attitude [(4/4), (5/3)]; Own knowledge/skill level [(3/3), (3/3)]; Trust or distrust [(3/3), (4/3)]	

Legend: (x/y) = (“number of examples in the data”/“number of different interviewees mentioning the attribution category”)  
 [(x/y), (x/y)] = [“ratio for social-attribution in form (x/y)”, “ratio for self-attribution in form (x/y)”]

Table 3. Attribution categories for social and self-attributions

First, the **awareness of cultural background** stood out. For social attributions, the other person’s cultural background (i.e., “own cultural background” in social attribution) was mentioned 26 times by 8 different interviewees as reason for the other’s behaviour, whereas one’s own cultural background was mentioned only 2 times for self-attributions (thus is not displayed in Table 3 as only 2 instances existed in the data). On the other hand, another person’s cultural background was mentioned in connection to self-attribution several times, but only once in connection to social attribution (and thus is not represented in Table 3). This was one of the strongest differences between self- and social attributions we found. Specifically the communication behaviours of “(not) asking” (e.g., for help), “(not) admitting” (e.g., that a work task cannot be completed on time), and “(not) criticizing, complaining, questioning” were explained with another person’s cultural background, mostly Chinese and Indian (e.g., Example 1 in Table 1). For example, Leader 1 said: “*Our guy in China didn’t dare to ask anything because he was afraid of losing his face or something like that if he would have admitted that he didn’t know something. That is part of the local culture there, I guess.*” Interviewees made assumptions about how another persons’ cultural background affects communication behaviour, but did not emphasize or were not aware of how their own cultural background affects their own behaviour. The only exception was Member 5 who used his own cultural background to explain why he did not try to justify/make up a reason for why one of his tasks had not progressed: “*But it was more like... I just thought about it in..., this typical [interviewee’s own culture] way that I am not going to embellish it, not writing some lirumlarum [into the report], because the task did not progress and this fact does not change.*”

Second, for self-attributions, i.e., explanations for the interviewees’ own behaviour, “future- or outcome-oriented reasons” stand out. Interviewees explained some of their own behaviour with having the **intention to affect another person’s behaviour or to progress their own work-tasks**. For example, using a clear or otherwise constructive communication style were explained in several instances with the intention to affect the other person’s behaviour. Progressing their own work task was given as explanation for, e.g., sharing and pro-actively seeking information, and for socio-emotional communication by the interviewees. Leader 2, for example, applied a constructive communication style to affect

his team members' acceptance of a proposed solution (for a quotation, see Example 4 in Table 1). Leader 4 explained his own constructive communication behaviour: "You can give critique in a good or bad way, and the main goal with giving critique is to achieve something. The only achievement should not be that 'hah, now I said it, now the other person is feeling bad for sure!' My goal when giving critique is that [the other's behaviour] is corrected, so you have to package the critique in a way that the behaviour then actually is being corrected."

Third, we found that certain attributions or explanations were only given for other person's behaviour, not for interviewee's own behaviour. Even though feelings in general (e.g., being afraid, feeling tired, feeling insecure) were given as explanations for both one's own and others' communication behaviour, several feelings were only seen as reasons for other's behaviour: demotivation, disinterest and being uncommitted were only mentioned as social attributions, never as self-attributions.

To summarize, differences also existed in the type of explanations given for a GVT actor's own and others' communication behaviour.

### 4.3 Cross-comparison of social and self-attributions for certain communication behaviours

In this section, we summarize and compare the social and self-attributions made for those communication behaviours for which at least 3 different interviewees made self-attributions, and for which at least three different interviewees made social attributions (see "Behaviour categories for both social and self-attribution" in Table 2). We want to present two findings we made when cross-comparing social and self-attributions for a certain type of communication behaviour.

Social attributions	Communication behaviour	Self-attributions
bad spirit/atmosphere (3x); own negative feeling; shared work history (in a positive sense as not so much need for communication)	Small communication amount	tasks being unrelated (3x)
face-to-face meeting; trusting the other person	Socio-emotional communication	familiarity; to progress own work task (2x); to preserve good spirit; trusting the other person
other's previous bad behaviour; own cultural background; own (lacking) knowledge/skill level; own negative feeling	Criticize, complain, question	affect other's behaviour; own discontentedness; own wish for interaction; other's bad skill level; own knowledge/skill level; task being unrelated; own personality
own cultural background (4x); other's strict attitude; own satisfied feeling; own previous positive experience with same person	Not criticize, complain, question	negative: other's difficult behaviour; own personality; bad spirit/atmosphere; own perceived status; positive: trust in other person
other's attitude (hierarchical thinking team leader); no co-location (e.g.; switch off teleconference and continue discussion on-site); conflict with excluded person; personal chemistry problem	Excluding behaviour	other's bad language skills; other's cultural background; communication space (exclude customers or unfamiliar persons from discussion to be able to talk more openly); unrelated tasks
own cultural background; preceding conflict with that person; good coordination (roles are clear); familiarity; shared time zone	Contacting others	awareness of other's presence; own perceived status; tasks being unrelated
own cultural background; co-location; good coordination (norms for info sharing); own educational background; own enthusiasm; face-to-face meeting; familiarity; own perception about importance of knowledge/skills shared	Informing, sharing	affect other's behaviour; other's previous behaviour; coordination; show off own knowledge/skills; to progress own work task

Table 4. Cross-comparison of social and self-attributions for certain communication behaviour

First, in the case of excluding behaviour, social attributions often were dispositional/personal, for example, another person's attitude or personal chemistry problems. This can be seen in the example given by Member 6 concerning GVT members who have a lot of knowledge: "So when there is a person who knows a lot, and then it happens that this person's and the team leader's personal chemistry don't match, then it can happen that the team leader loses his own role because others [other team members] rather start to ask the team member who knows those things. So the team leader is being bypassed." In contrast, self-attributions for excluding behaviour were usually related to the situation, e.g., where the customer is removed from the email discussion at some point to be able to talk more openly within the team: "When customers are involved who have a problem, then once we get the problem solved we remove the customers [from the email discussion] and continue within the team. We might say 'Hey, this is what we all should learn from this, the customer was maybe a bit stupid in this case'. But in the sense that we focus on what we can learn from this situation for the future." (Leader 4).

Second, a small communication amount in the case of social attributions was attributed in most instances to something negative, for example a bad team spirit or atmosphere, or negative feelings, whereas in the case of self-attribution it was solely attributed to the tasks being unrelated (see Example 3 in Table 1).

## 5 Discussion

Malle (1999) argues that by explaining behaviour, people make sense of the social world, adapt to it and shape it. With our research we set out to answer the question how GVT actors explain their own and others' communication behaviour, and we provided insight into how these actors make sense of their own and others' social world in a digital setting. In Section 4 we provided several pieces of evidence for this "distortion" in how GVT actors make sense of these social worlds. We showed that differences exist in both the communication behaviours that are being explained (Section 4.1), and in the types of explanations provided (Section 4.2). For example, we found that interviewees explained only their own, but not others', future-oriented or outcome-oriented behaviour. We also found that certain explanations/attributions were only made for other person's behaviour, not the interviewees' own behaviour. These attributions included one's own demotivation, disinterest or uncommittedness. These and the other findings we described in Section 4 are evidence that GVT actors used "different lenses" when making sense of their own vs. other GVT actors' social worlds. Building on our findings, we discuss our three main contributions and implications for research and practice in more detail next.

First, we *contribute to communication behaviour research in the context of electronic CM*. We showed that GVT actors tended to explain their own constructive communication behaviour, but they placed greater emphasis on explaining other persons' defensive/negative communication behaviour. This is an interesting finding considering that previous research found that the propensity to understand and control events and outcomes is more evident, for example, in situations with unexpected or negative outcomes (Snead et al., 2015), and that people are more likely to recall negative incidents than positive ones (Dasborough, 2006). In our study, the outcome was a certain communication behaviour, and previous research thus indicates that people would rather recall and try to understand negative communication behaviour. However, this proved true only for social attributions, not for self-attributions. Even though interviewees might have recalled also their own negative or defensive communication behaviour, they provided explanations mostly for their own positive communication behaviour. This is a novel finding, and is a clear indicator of the imbalance in how GVT actors see their own social world vs. the other GVT actors' social world when trying to make sense of it.

We also found that a certain communication behaviour can be positive under certain circumstances, but negative under others. This seems maybe obvious, but has *implications for research*. Even though often not explicitly stated, previous research on communication behaviour tends to see certain communication behaviour as either constructive/positive or defensive/negative. For example, studies that research how to increase information sharing (e.g., Pauleen, 2003), how to increase inclusion (e.g., Triana et al., 2013), or that show which actions lead to more frequent communication (e.g., Yashima et al., 2004; Mohr and Sohi, 1995) implicitly assume these behaviours to be positive. Based on our findings we argue that

researchers have to clearly state what they mean with positive/constructive or negative/destructive behaviour – are they considering the intention behind the behaviour or only the actual outcome of the behaviour? We also want to emphasize that a person's explanation for the behaviour should be identified when trying to decide whether a certain communication behaviour is/was constructive or defensive. Behaviour that was exhibited with positive intentions can have a negative impact, e.g., if valuable information is not shared because of the person wrongly evaluating the importance of the information for others.

Second, we **contribute to GVT research** by showing the role of “cultural background” in communication behaviour explanations. Previous research found that members in virtual teams are more likely to make personal (i.e., internal, dispositional) attributions than situational (i.e., external) attributions for not co-located GVT actors due to the lack of situational information and cognitive overload (Cramton, 2001) which is stemming from the need to use electronic CM. Situational attribution in general is seen to be more constructive for future communication behaviour among GVT members than personal attribution (Cramton and Orvis, 2003; Kankanhalli et al., 2006, referring to Blakar, 1984). A person's culture is a situational factor (i.e., one that a person does not have influence on), whereas demotivation, laziness or carelessness are dispositional factors (person-related factors). Cultural awareness has been identified as a critical competence (e.g., Duarte and Snyder, 2006) and as one of the critical success factors for GVTs (e.g., Kayworth and Leidner, 2000) in more practice-oriented research. One argument has been that organizations should train their GVT members in different cultures' communication styles to increase intercultural awareness. Our study showed that cultural awareness existed in Alpha, as most of the interviewees explained other persons' communication behaviour also with those persons' cultural background. Our study contributes to previous research by showing that there is a need to also increase cultural awareness for one's *own* cultural background and how it might affect one's own communication behaviour. As a practical implication, efforts to increase this awareness for one's own cultural background should be undertaken on both an organizational and team level. Warkentin and Beranek (1999) stress the importance of providing GVT actors with training on interpersonal communication skills. Thus, we suggest training to be offered at least to those who act as GVT leaders to help them keep everyone aware that it is not only the others' cultural background that affects the way they communicate, but that everyone in the team is subject to certain communication behaviour that could be explained with the cultural background. We believe such awareness can help decrease the likelihood of communication breakdown.

In addition, our findings have **practical implications for leading GVTs**, e.g., the management of software development projects. As Daim et al. (2012) found, GVTs are more likely to suffer from communication breakdown – and as a result project failure – because of trust issues, difficulties in building interpersonal relations over distance, cultural differences, weak leadership and the use of unsuitable technology for communication. All of these factors contribute to the actor-observer bias (Choi and Nisbett, 1998; Malle and Knobe, 1997) that GVTs have been found to suffer from because of having to rely heavily on electronic CM. We advise GVT leaders to put special emphasis on helping GVT members become better aware of this bias. As a starting point, team leaders could let team members work on different scenarios of communication problems using the categories we identified (e.g., someone does not ask for help with a task, someone does not admit s(he) cannot complete a task on time, etc.). Each person could be assigned one scenario where this person is the one who exhibits an unwanted behaviour, and has to provide explanations for why (s)he him/herself would exhibit this behaviour. Similarly, all other team members are asked to provide an explanation for why this team member would be exhibiting the behaviour. Presumably, the explanations would be quite different and could act as an eye-opener and help GVT members become aware of this bias, and be more willing to help solve potential communication problems in future. In actual conflict situations, the involved actors could be asked about their interpretation of reasons – this might reveal possible distortions and help solve the conflict.

Third, our findings have **implications for the design of IS**. Based on our findings and discussion we argue that there is a need for designing electronic CM that truly help convey contextual information to distributed team members, and that so help in reducing the negative effects on GVT work stemming

from (wrongful) dispositional attributions. Vignovic and Thompson (2010) found that providing virtual team members with contextual information about the cultural background of the other persons they were communicating with via email decreased the negative interpretations the members made about the other persons based on technical language errors (grammar etc.). Considering our finding that GVT actors did not seem aware of how their *own* cultural context affects their own communication behaviour, such a system could show both/all participants' cultural background and indicate matches/mismatches with one's own cultural background, instead of only showing the cultural background of the other person. This would increase awareness also of one's own cultural background.

## 6 Conclusion

In spite of ever developing technological opportunities and support for distributed work arrangements, communication challenges continue to persist in these distributed work environments. Other people's communication behaviour is the main behavioural evidence available in these distributed work environments. In an attempt to better understand how people working in one type of distributed work environment, i.e., global virtual teams, make sense of their social world, we analyzed and compared how they explain their own and other people's communication behaviour. Our main contribution is the provision of deep insight into how GVT actors make sense of their social world/work environment in different ways for themselves and other GVT actors, and to show that they apply different lenses when explaining their own and others' communication behaviour. Our findings contribute to a better understanding of potential causes for the still persisting communication challenges in GVT. We discussed our findings as well as its implications for research and practice in Section 5.

As all research, also this one has limitations. The study was conducted in one case company and focused on interviewing persons located at only one site of the company. Thus, we were not able to identify which behaviour categories and which social and self-attributions are specific to GVTs in general, and which ones are based on the cultural/organizational context. It might be that, for example, our findings concerning cultural awareness are partly stemming from the specific company we studied. Another limitation is that the nature of our data did not allow for an analysis of whether communication behaviour explanations differ for different electronic CM.

Future research could extend our study to complete virtual teams, i.e., all members of the team located at different sites. This would allow for a detailed comparison of how these different people make sense of one another's communication behaviour. Questions to be answered could be whether a specific GVT has a specific "lens" that all actors within this specific GVT apply when making sense of their own and others' communication behaviour, or whether, e.g., members of the same cultural context apply similar lenses. Future research could also study how the use of a different communication media affects how people make sense of communication behaviour in GVTs. In addition, our findings of what kind of attribution categories are relevant to actors in GVTs allow researchers who are interested in applying attribution theory to systematically study how certain antecedents (i.e., information, beliefs and motivation) affect the perceived causes for a communication behaviour. They also allow future research to study systematically the differences we identified concerning social- and self-attributions. For example, what kind of information, beliefs and motivation lead to attributing certain communication behaviour (e.g., not asking for help) to another persons' cultural background, when one's own cultural background usually is not the perceived cause for one's own communication behaviour? Why is it that GVT actors more often say that they exhibited a certain communication behaviour (e.g., including behaviour) in order to somehow affect another person's communication behaviour (e.g., share information with the team), when this "intention to affect another person's behaviour" was hardly ever perceived to be the cause for another person's behaviour?

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