

# Unpacking the Duality of Control and Trust in Inter-Organizational Relationships through Action-Reaction Cycles

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**ABSTRACT** To ensure cooperation, parties in inter-organizational relationships (IORs) draw upon both control and trust. Yet, how control–trust dynamics change as IORs evolve remains unclear. This study illuminates the interplay between control–trust dynamics and IOR dynamics by unpacking how control and trust refer to and create one another through action–reaction cycles. We find that conflicting enactments of vulnerability and risk caused by critical incidents lead to tensions between the parties (IOR dynamics) regarding *how* and *when* they rely on control and trust. Consequently, coping practices are applied to redefine the controlling and trusting domain and mediate between the multiple and temporal domains to ensure that control and trust refer to and create one another to (re)form positive expectations. The study’s main implication is that it makes little sense to study control–trust dynamics in IORs, like other relational phenomena, in isolation and at a single point in time.

**Keywords:** control–trust dynamics, coping practices, critical incidents, duality perspective, inter-organizational relationships, process study

## INTRODUCTION

In inter-organizational relationships (IORs), ensuring both control and trust is a critical but challenging task (Cao and Lumineau, 2015; Long and Sitkin, 2018; Long and Weibel, 2018; Vlaar et al., 2007). The literature on control–trust dynamics in IORs acknowledges that control and trust relate and play a key role in ensuring cooperation (Cao and Lumineau, 2015) but disagrees concerning *how* they relate (e.g., the substitute–complementary debate), and *whether* an optimal combination is a prerequisite for

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cooperation (Long and Sitkin, 2018; Möllering and Sydow, 2019). These inconsistent findings make it difficult to move the field forward and may be confusing to managers (Cao and Lumineau, 2015; Long and Sitkin, 2018).

Scholars have argued that the control–trust relationship is dialectical, tension-filled, and in constant change as IORs evolve (Lewicki et al., 1998; Sydow and Windeler, 2003). IORs also change over time due to altered conditions, processes, or mechanisms (Majchrzak et al., 2015). These may be perceived differently by the parties and strain the relationship (Lumineau and Oliveira, 2018). Thus, both the IOR and the control – trust relationship are dynamic, revealing an interesting theoretical puzzle of how control–trust dynamics (Long and Sitkin, 2018; Long and Weibel, 2018) relate to IOR changes (Majchrzak et al., 2015; Vlaar et al., 2007). We investigate this puzzle by drawing on the duality perspective of control and trust (Möllering, 2005), which contends that the dynamism between control and trust lies in how they refer to, create one another, and remain irreducible to each other. In this perspective, the basic challenge to ensure cooperation lies in how the parties form positive expectations for each other. Scholars have recognized that actors consider the inseparable influences of the structural context (associated with control) and agency (associated with trust) when they assess each other (Möllering, 2005; Möllering and Sydow, 2019; Sydow and Windeler, 2003). Yet, we know little about *how* and *when* control and trust refer to and create one another as parties seek to form positive expectations for each other to ensure cooperation throughout the IOR. Hence, we ask: How do control–trust dynamics interplay with IOR dynamics, and how and when do control and trust refer to and create one another in this interplay?

To explore these questions, we studied a client–contractor relationship in an infrastructure project. The case provided a rich empirical context to study control–trust dynamics in IORs and gave us the opportunity to follow a relationship from start to finish with access to both parties (De Rond and Bouchikhi, 2004; Schilke and Cook, 2013). Capturing perceptions from both sides allowed us to study how changes in the IOR, for instance relational asymmetries emerging from new parties joining the project and disruption of plans, impacted the control–trust dynamics in the relationship over time (Long and Sitkin, 2018; Vlaar et al., 2007). We labelled the IOR changes as *critical incidents*. In analysing the case, we applied the practice theory perspective (Orlikowski, 2010) to reveal how the parties' recurrent controlling and trusting doings and sayings shape and are being shaped by IOR dynamics.

The study makes two key contributions to the understanding of control–trust dynamics in IORs. First, we illuminate the complex relationship between control–trust dynamics and IOR dynamics by detailing how control and trust refer to and create one another at specific times in the IOR, reflecting what we term controlling and trusting domains. We unpack the action–reaction cycles between the parties driving this process. These are triggered by critical incidents distorting the cooperation between the parties. Distortion is caused by asymmetries in the parties' perception of vulnerability. This leads to differing enactments of risk which challenge the existing controlling and trusting domain. Second, we demonstrate how coping practices help the parties to adjust trust and/or control to fit a new situation by redefining the controlling and trusting domain so that control and trust again refer to and create one another to (re)form positive expectations in the relationship. These practices mediate multiple and temporal

controlling and trusting domains in the IOR. By introducing the temporality of controlling and trusting domains, we extend the duality perspective and argue that control – trust dynamics in IORs neither can be studied in isolation nor at a single point in time.

## CONTROL–TRUST DYNAMICS IN INTER-ORGANIZATIONAL RELATIONSHIPS

Control is about avoiding vulnerability and risk by influencing behaviours and giving attention, measuring, monitoring, incentivizing, and sanctioning (Bijlsma-Frankema and Costa, 2005; Das and Teng, 1998a; Dekker, 2004; Sitkin et al., 2020). In the IOR literature, control is often related to contracts to cope with exchange hazards (Lumineau and Malhotra, 2011; Poppo and Zenger, 2002), but they also play an important coordinating role (Cao and Lumineau, 2015). Trust, contrastingly, is about being willing to be vulnerable based on positive expectations for future actions while not feeling the need to control (Mayer et al., 1995). In the process of evaluating the trustee, the trustor will make evaluations of ability, goodwill, and benevolence, as well as perceiving the other as adhering to acceptable norms and values (Mayer et al., 1995; Serva et al., 2005).

Since trust is about accepting vulnerability and risk, and control is about avoiding it, tensions are likely to occur in IORs given that parties tend to rely on both (Long and Weibel, 2018). However, the interplay between trust and control and whether tensions arise in the relationship depend on how vulnerability and risk are perceived. In the IOR literature, risk is often divided into situations of relational risk (i.e., the probability and consequences of not having a satisfactory cooperation) and performance risk (i.e., the probability and consequences that alliance objectives are not achieved, despite satisfactory cooperation among partner firms) (Das and Teng, 2001). de Man and Roijackers (2009) find that when there is high relational risk, there is likely to be more control considering the uncertainty of a parties' intentions; and when there is high performance risk, trust is needed to cope with an unpredictable environment. In situations with both high performance risk and high relational risk, parties typically rely more on complex combinations of trust and control. Perceptions of risk are likely to differ between parties, as variance in perceptions, motives, expectations, experience with previous partnerships, and power position among the parties make symmetry in perceptions concerning the same situation unlikely (De Rond and Bouchikhi, 2004). This suggests that the relationship between parties in IORs is less symmetrical than reflected in many studies (Graebner et al., 2020; McEvily et al., 2017).

The asymmetry between IOR parties is revealed when IORs change. As Berends and Sydow (2019, p. 2) explained, the development of IORs 'typically comprises iterations of initiation, action, evaluation, and readjustments, to recalibrate initial conditions for the partnership, incorporate learnings, and adapt to changing conditions'. This leads to peaks and valleys with no predetermined progression in the relationship (Majchrzak et al., 2015). In their review, Majchrzak et al. (2015) identified between-partner differences, external, and within-IOR sources that could potentially change the inter-organizational cooperation. Examples of such sources of IOR dynamics are external events that change

the expectations the parties have for each other, performance failures, and different understandings of the contract frame. Hence, it is likely that control–trust dynamics interplay with IOR dynamics as the IOR evolves (Das and Teng, 1998a; Long and Sitkin, 2018; Long and Weibel, 2018) since the parties' perceptions of risk in a new situation (change in the IOR) may lead them to rely more on trust and/or control, and this reliance may be asymmetrical between the parties (Graebner et al., 2020). As Lewicki et al. (1998) noted, parties may trust each other in some situations, not trust each other in others, and even distrust each other at times. Graebner et al. (2020) assert that IORs should be treated as asymmetrical when studying relational concepts, such as control–trust dynamics – these concepts take their meaning from their counterpart and are socially constructed (Möllering and Sydow, 2019). While previous research has demonstrated how control and trust dynamically co-evolve throughout an IOR (Vlaar et al., 2007), scholars recognize that research on the influence of contextual factors on control–trust dynamics is at a nascent stage (Long and Sitkin, 2018), particularly in IORs (Cao and Lumineau, 2015).

The duality perspective on control–trust dynamics considers contextual influences on control–trust dynamics; the central idea being that control and trust as a duality enable actors to form positive expectations for each other (Möllering, 2005). Möllering (2005, pp. 287–88) argued that 'when an actor rests positive expectations on structural influences on the embedded other, we speak of control. When an actor rests positive expectations on an assumption of benevolent agency on the part of the other, we speak of trust'. Actors consider inseparable influences of control (structure) and trust (agency) when assessing each other (Möllering, 2005; Sydow and Windeler, 2003). Sydow and Windeler (2003) noted that trust refers to control as the choice of acting benevolently must be seen in relation to how much agency is granted within the social structures one is embedded. Control refers to trust as the level of trust between the parties will influence how control is performed in the relationship. Control can produce trust if it is performed as expected and trust can create control because trust influences the felt necessity for control and how it is designed (Sydow and Windeler, 2003). Möllering (2005) offered some preliminary findings of how control and trust refer to and create one another but called for longitudinal case studies of the embeddedness of control and trust and suggested that studies of dynamic social practices offer such an opportunity.

The above review of the literature on control–trust dynamics in IORs highlights two key gaps, which we address in this study. First, how control–trust dynamics *relate* to IOR dynamics; we need an improved understanding of control–trust dynamics in the context of IORs since IORs change over time (Majchrzak et al., 2015) and parties are likely to have differing perceptions of these changes (Graebner et al., 2020). Second, how control and trust refer to and create one another as the IOR evolves needs empirical explication. We argue that a practice theory perspective (Orlikowski, 2010) is well suited as a methodological approach to address these gaps. The practice theory perspective draws on Giddens (1984) and his structuration theory and has been used in some studies within the control and trust stream of research (Berends and Sydow, 2019; Möllering and Sydow, 2019; Nikolova et al., 2015). It allows us to examine how control–trust dynamics relate to IOR dynamics over time, and how this process unfolds through parties' enactments and recurrent actions and interactions (Feldman and Orlikowski, 2011) as 'part of the ordinary, everyday nature of work' (Jarzabkowski et al., 2009, p. 289). Two-sided data are called for to explore the degree

of mutuality between parties to unpack the interplay between IOR dynamics (Graebner et al., 2020; Lumineau and Oliveira, 2018; Majchrzak et al., 2015) and control–trust dynamics (Long and Sitkin, 2018). Applying the practice theory perspective in our analysis, allowed us to investigate behaviours and interactions between the IOR parties. It also allowed us to connect practices (meso-level phenomena) with structure/control (macro-level phenomena) and trust/agency (micro-level phenomena) (Schilke and Cook, 2013). Practices are conducted in interaction with contextual factors such as regulations, routines, contracts, and norms (Giddens, 1984); although, there is always some novelty and unpredictability within courses of behaviour (Jarzabkowski et al., 2012) and agency.

## METHODS

To answer the research questions, we performed a longitudinal case study (Langley et al., 2013) of a client–contractor relationship in a public infrastructure project in Norway (hereafter referred to as INFRAPRO) conducted between 2016 and 2019. INFRAPRO included 11.1 km of road, a 4.3 km tunnel, and four bridges, with a total budget of 1.73 billion USD. It was a typical construction industry IOR composed of a temporary organization of several legally independent, yet operationally interdependent parties (Manning, 2017), who worked jointly for a period to achieve a predefined set of goals (Jones and Lichtenstein, 2008). We focused on the IOR between the client and the main contractor and studied their relationship in the project's construction phase. The relationship commenced following a public competitive tendering process that selected the contractor for a design–bid–build contract scheme (Hale et al., 2009), wherein the client provided specifications and managed the overall project, and the contractor performed the work based on these specifications.

The contract was signed in June 2016, immediately after which a series of meetings commenced over two months (July–August 2016). This collaborative planning phase (CP) had been the client's standard practice for a few years to reduce conflicts, such as legal disputes, delays, cost overruns, low profits, and construction quality issues (Vaux and Kirk, 2018). The CP in INFRAPRO included discussions regarding how to organize and conduct the work, addressing uncertainties in the project, getting to know each other, and developing joint rules for cooperation, which materialized in a written poster signed by all key parties. Production commenced in late August 2016 and, as it proceeded, the parties had to cope with tensions emerging from critical incidents which we, in line with Majchrzak et al. (2015), define as IOR dynamics. The parties perceived these incidents differently creating asymmetries in the relationship. These critical incidents represented a potential threat to distort the relationship by impacting parties' expectations for each other and their respective controlling and trusting behaviours. Nevertheless, the parties managed to cope with these tensions, and in October 2019, the planned road opened 10 months ahead of schedule, 5 million USD under budget, and with what the parties referred to as good quality and cooperation.

INFRAPRO is a revelatory case (Eisenhardt and Graebner, 2007; Siggelkow, 2007), which is useful to explore our research questions. First, the parties relied on what the literature on project organizations refers to as hierarchical forms (for example, contracts and incentives) as well as relational forms (Davies et al., 2019), including trust and reciprocity (Svärd, 2016). A well-known contract regime was used, and the client

had a standard control system wherein their control engineers (CEs) would supervise and control the contractor's work regularly. Trust was reflected in multiple ways, including a belief in the benevolence of the other and a willingness to be vulnerable in the face of critical incidents despite prevailing uncertainty. This was an excellent setting for studying control–trust dynamics because it enabled us to observe how trusting and controlling were performed and perceived by the parties; how they relied on both control and trust simultaneously; and how they, over time, had to cope with tensions related to critical incidents that distorted the established relationship between control and trust. Second, INFRAPRO was useful because the project provided an opportunity to study a relationship throughout its lifespan, which made it possible to observe the interplay between IOR dynamics and control–trust dynamics, as called for in the literature (Cao and Lumineau, 2015; Schilke and Cook, 2013). Third, INFRAPRO provided the opportunity to collect data from both sides of the dyad with good access to both parties. Finally, since INFRAPRO was considered a success by the parties involved, this case was suitable for increasing the understanding on how they relied on both control and trust to form positive expectations, even when critical incidents threatened the cooperation and the overall project performance.

### Data Collection

During the empirical fieldwork, we drew upon several data sources in our data collection (eight interview rounds, 10 meeting observations, and shadowing of CEs on-site) over 34 months (Table AI), which aided the validity and reliability of the study (Pye and Pettigrew, 2005). We started the research project with two initial meetings with the project managers (client and contractor). These took place approximately five months into the construction phase, meaning that some of the information was gained retrospectively, but most information about control–trust dynamics in the relationship was obtained in real-time (34 of 40 months).

We reviewed several documents about the project, including the zoning plan, the client's bid specifications, comments, and requests from concerned municipalities. We also obtained the contract between the parties, summaries of the CP meetings, and minutes from all construction meetings that had hitherto been conducted in the project (55 in total). We conducted 75 semi-structured interviews (in eight rounds), each of which lasted approximately 60 minutes. The interviews were recorded and transcribed verbatim. We interviewed representatives from the client and the contractor at all levels, including top managers, project managers, foremen, CEs, and administrative staff at the project level. We also interviewed representatives from other parties, such as subcontractors, who could shed light on the focal relationship. In addition, we held several informal conversations with project managers and other representatives by phone, by email, and during regular site visits. Being at the site enabled us to include ethnographic elements, such as meeting observations (10 meetings) and shadowing the client's CEs.

Interviewees were initially selected based on project managers' recommendations. As we gained more knowledge about INFRAPRO, we selected interviewees based on our considerations. In line with process research (Langley et al., 2013), the focus of our data

collection evolved from a more general interest in the cooperation toward more focused attention on how control–trust dynamics interplay with IOR dynamics, informed by observations specific to the case, especially concerning the parties’ controlling and trusting behaviours, their way of coping with critical incidents, and changes in those behaviours as relationships evolved.

**Analytical Process**

We started the analytical process by creating a chronological story of the developments in the project, which was updated as the project proceeded, and the study progressed. Then, we probed the data for information about the cooperation in general looking for references to both control and trust, particularly in the context of IORs. This process took place through a dialogical process between theory (current theoretical understandings of control–trust dynamics and IOR dynamics) and empirical phenomena (development of control–trust dynamics over time in the INFRAPRO client–contractor relationship) (Locke et al., 2008; Mantere and Ketokivi, 2013).

We applied the following strategies to help ensure coding reliability. First, we created a database in which all data were systematized such that all authors had the same information. Second, we organized, processed, and coded the data in NVivo software (QSR International Pty Ltd., 2020) according to the coding scheme (Figure 1). Third, we used an ‘insider/outsider’ coding method (Charmaz, 2013), wherein one of the authors who had not been involved in the data collection coded the data, in addition to authors who had been involved. The respective coding schemes were compared and discussed until a common understanding was developed among the authors. Finally, we presented the results to the project parties (six times) to ensure that we had captured their experiences. This strategy helped us make sense of surprising and difficult-to-interpret findings.

The analytical process proceeded in three steps. We describe the set of codes we have applied analysing our data in Figure 1 and detail the empirical coding in Tables I–III in the Findings section.

	INITIAL CONDITIONS	SOURCE(S) OF IOR DYNAMICS	PROCESS			OUTCOME	
EMPIRICAL MANIFESTS	Contract and normative rules of cooperation define the initial controlling and trusting domain $T_0$ where control and trust refer to and create one another	Critical incident stemming from between-partner differences, external sources, or within IOR sources	Actor A's controlling and trusting action relates to their understanding of the controlling and trusting domain $T_0$	Actor B's perception of A's action relates to their understanding of the controlling and trusting domain $T_0$	Asymmetries between the parties in perceptions of vulnerability and enactments of risk create tensions	The parties coping with tensions in the relationship	Temporal settlement of the controlling and trusting domain $T_1$ where control and trust refer to and create one another
CONCEPTS	Controlling and trusting domain $T_0$  Control–trust dynamics $T_0$  Expectations $T_0$	Critical incident distorting the IOR	Action – reaction cycle (Control–trust dynamics meet IOR dynamics)				Redefining the controlling and trusting domain $T_1$  Control-trust dynamics $T_1$  Expectations $T_1$
			Asymmetries in perceptions and expectations in relation to $T_0$		Coping practice(s): Routinizing Joint problem solving Re-organizing		

Figure 1. Coding scheme

First, in line with a strong process approach (Jarzabkowski et al., 2017), behaviours related to controlling and trusting became key to our analysis. These behaviours represent ‘... an emergent property of the moment-by-moment interactions between actors, and between actors and the environment of their action’ (Suchman, 1987, p. 179). In the initial phase of the relationship, the parties establish what we term a *controlling and trusting domain*. The term controlling and trusting domain refer to a temporal space in the IOR, in which control and trust refer to and create one another and contribute to form positive expectations. The controlling and trusting domain is understood in line with Lewicki et al.’s (1998) assertion that parties may simultaneously have trust and distrust in a relationship; that is, you may trust someone in one situation and simultaneously distrust him/her regarding another situation. The controlling and trusting domain is redefined when control (structure) and/or trust (agency) are adjusted both in form and reliance thus changing the dynamics between control and trust in the relationship. An existing controlling and trusting domain might be distorted by a *critical incident* – an event out of the range of normal experiences, reflecting IOR dynamics (Majchrzak et al., 2015). We used a temporal bracketing strategy (Langley, 2010) to identify three critical incidents in INFRAPRO representing three periods where the control–trust dynamics changed in the relationship.

The second step in the analysis examined why the asymmetries between the parties occurred and how they were handled. Thus, we were looking for the ‘aha’ moment in the data (Jarzabkowski et al., 2017). The critical incidents caused asymmetry between the parties as they *perceived vulnerability and enacted risk differently* in relation to the present controlling and trusting domain, impacting the parties’ expectations for each other. We focused on understanding how the parties coped with the asymmetry and managed to redefine the controlling and trusting domain. We label this process an *action–reaction cycle* where IOR dynamics meet control–trust dynamics in the relationship. The *outcome* of this process was a redefined controlling and trusting domain where control and trust once more referred to and created one another to form positive expectations in the relationship. The coding of the action–reaction cycles revealed the complex relationship between control–trust dynamics and IOR dynamics.

The third step in the analysis was concerned with the time dimension in the interplay between control–trust dynamics and IOR dynamics. In this step, we examined how the parties related to the existing controlling and trusting domain facing critical incidents, albeit in different ways, causing conflicting enactments of risk. We further examined how the *coping practices* were applied to deal with IOR dynamics. This enabled the parties to redefine the existing controlling and trusting domain so that control (structure) and trust (agency) again referred to and created one another in a manner that formed positive expectations. These analytical steps constitute the basis of the theorizing on the development of control–trust dynamics in IORs presented in the process model in Figure 2.

## FINDINGS

We will in the following present the three periods that explicate how control–trust dynamics relate to IOR dynamics in INFRAPRO as the cooperation evolved. The interplay between control–trust dynamics and IOR dynamics is explained through action–reaction



cycles (see [Tables I–III](#)) in which the parties cope with tensions caused by critical incidents to (re)form positive expectations in their relationship. We show how coping practices enable the parties to redefine the controlling and trusting domain, resulting in a revised dynamic between control and trust in the IOR.

### Period 1: Tensions Due to Ways of Controlling

[Table I](#) presents the action–reaction cycle for Period 1 where tensions in the relationship emerged owing to the client’s ways of controlling. This was identified as a within-IOR incident.

Positive expectations had been created during the CP, as the contractor project manager recalled in an interview: ‘[...] we agreed on routines [and] how to communicate, like how to inform each other about various topics, such as control reports and technical clarifications. We clarified expectations and that was very useful’. Similarly, a client CE said: ‘We [the CEs] explained to the contractor that we [don’t] only look for mistakes when we visit the site; our work is also directed toward documenting what has correctly been done’. Thus, positive expectations had been formed through contractual control (agreed-upon structures), and tentative trust enabled as the parties shared promises of benevolent behaviours. These behaviours were related to the well-known structural context and reinforced by the making of a cooperative poster developed during the CP.

However, when the production started, these positive expectations were based on different understandings of how control should be performed. The contractor observed that some CEs would arrive at the construction site for control purposes and then leave without talking to the contractor’s representatives. In the interviews, the contractor’s representatives indicated that they perceived this behaviour as a lack of trust from the client and a violation of the agreements made in the CP. They also suspected that this could be a way for the CEs to collect information that they could exploit later since the control reports documented potential faults made by the contractor. The contractor started questioning the benevolence of the client owing to the perception of their way of controlling not coinciding with expectations and the existing controlling and trusting domain. The CEs, however, thought that they supported the contractor by providing information about expected issues that could occur in the future, enabling the contractor to plan and prepare. This feedforward controlling resulted in a rapid accumulation of control reports, which reinforced the contractor’s beliefs that the client did not see them as trustworthy. The CEs, on the other hand, did not perceive this as a violation of the expectations formed in the CP as they enacted performance risk and wanted to help the contractor.

The respective project managers recognized that the situation had escalated, threatening the positive expectations formed during the CP, and the cooperation as such. The client and the CEs acknowledged that the feedforward controlling could potentially hurt the relationship and were willing to discuss how controls could be performed. Still, they emphasized that controlling was part of their job, as outlined in the contract. To cope with the tensions, the parties applied what we identified as a *routinizing* coping practice, with representatives from both parties participating and sharing their thoughts and experiences. The client talked about how control was important to them for documenting for the future, referring to contractual control, and the contractor shared their experiences

Table I. The interplay between control-trust dynamics and IOR dynamics in INFRAPRO in Period I

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
PERIOD I: Tensions due to ways of controlling					
Initial conditions	Cooperation poster: Joint objectives and incentives <i>Client:</i> Perceptions of contractor as having good abilities (from controls in the tendering process and dialogue in the CP) <i>Contractor:</i> Perceptions of the client as caring about cooperation and positive work relations (interactions in the CP)	‘It appeared clearly in the CP that we had good chemistry. Important people on both sides had good chemistry. It is still very noticeable and useful for the project’. ‘They are experienced people, those working out there, they know what they are doing. Sometimes you have to be there and check [though]’.	‘We went through the project very thoroughly during the CP, and we got to know each other’. ‘They see that we have done this before, and the way we work results in trust both ways’. ‘It makes it much easier to collaborate with them when they understand what you are talking about. To talk about survey data with a geomatic engineer instead of a site manager’.	The domain of tentative trust and contractual control Positive expectations from the CP	Control-trust dynamics $T_0$ Expectations $T_0$
Source of IOR dynamics	Client’s ways of controlling the work at the construction site			Within IOR incident	Critical incident $T_1$  (Continues)

Table I. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
Process	<p>Client controlling on-site without talking to the contractor</p> <p>The client perceives a right to demand documentation – threatened with sanctions according to the contract</p> <p>Some people do not see the impact their way of controlling has on trusting relations</p>	<p>‘I know that some of my guys [CEs] will write a control report at 8:55 a.m. and then they go to the construction site at 9:05 asking the contractor if they have seen the report. Then they return to the office at 10:00 complaining that the contractor is not responding. I know that the contractor perceives the CEs as being picky at times, but it is their [the CE’s] responsibility’.</p> <p>‘By the contract, we could demand them to follow our way of documenting, but I remember that the first meeting ended up in a quite heated debate. I might have been a bit harsh, but I did nothing wrong as I was entitled by the contract’.</p> <p>‘Some [CEs] refer a bit too easily to the handbooks and the contract, without knowing exactly what it means. Then the contractor might feel that they get more responsibilities than they should, and what they get paid for. They want to do the job but become a bit suspicious’.</p>		<p><i>Client’s actions T<sub>j</sub></i></p> <p>Enact performance risk</p> <p>– leading to monitoring and feedforward</p> <p>controlling</p>	<p>Action – reaction cycle</p> <p>T<sub>j</sub>: coping with asymmetries and tensions</p>

(Continues)

Table I. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p>The contractor believes that they are documenting as agreed in the contract and CP</p> <p>Perceives the client's way of controlling as a means of hiding information to promote self-interest</p>	<p>'Sometimes we get complaints from the contractor that there are too many control reports, which are hard to keep track of, and that several of the reports are not relevant now but may be in the future. We just want to make sure that they are aware of what is coming and that we can document that we informed them'.</p>	<p>'In the initial meetings, we told them [the client] how our routines are and how we would document the different work tasks. It took us by surprise in the first formal meeting and they constantly said that these reports are not by the contract. I think they are a bit uncertain about us'. 'Some of them are rigid, constantly saying, "this is stated in the contract"'. 'We understand that control is necessary, but we often experience that the CEs do not speak to workers on site. It should not be like this; if you see a CE in the field, you see it as an alert that something is wrong'. '[...] sometimes there are too many control reports to keep track of. Some of them concern matters that are way ahead of time and not relevant now. It's easy to forget those that were written three months ago'.</p>	<p><i>Contractor's reaction T<sub>J</sub></i>: Enact relational risk – questioning the client's integrity and benevolence</p>	
	<p><i>Client</i>: Controlling is perceived as being in line with the contract. Intentions to help the contractor</p> <p><i>Contractor</i>: Not in line with intentions of CP – not caring about cooperation and positive work relations</p>	<p>'Sometimes we get complaints from the contractor that there are too many control reports, which are hard to keep track of, and that several of the reports are not relevant now but may be in the future. We just want to make sure that they are aware of what is coming and that we can document that we informed them'.</p>	<p>'We understand that control is necessary, but we often experience that the CEs do not speak to workers on site. It should not be like this; if you see a CE in the field, you see it as an alert that something is wrong'. '[...] sometimes there are too many control reports to keep track of. Some of them concern matters that are way ahead of time and not relevant now. It's easy to forget those that were written three months ago'.</p>	<p><i>Tensions T<sub>J</sub></i>: Differing enactments of risk – one party leaning on tentativeness and the other leaning on contractual control</p>	

(Continues)

Table I. (Continued)

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
	<p>Joint discussions of reasons behind tensions</p> <p>Documenting is seen as positive</p> <p>Talk first and write later</p> <p>Informing about upcoming issues</p>	<p>'Special control meetings regarding quality reporting will be conducted between the client and contractor's representatives. The contractor is responsible for inviting you to the meetings.'</p> <p>'Controls work best when we can discover something well in advance and talk to them on the site; for instance, stopping them from doing something that may lead to problems later. Then the consequences will be less for them, both in terms of time and costs.'</p> <p>'Sometimes there are changes that we have not foreseen – then we might write a change order in cooperation with the contractor. This makes the contractor get paid for the extra work and everyone is happy.'</p>	<p>'As a response to the debate, a special control meeting series was established.'</p> <p>'A critical CE at the [clients] who has more experience than us and with whom we fall in disfavoured. But, because we had a good collaboration further up in the system, we managed to proceed, until half a year passes when it bursts and we have to do something. In that phase, we had to replace three persons. Two of whom we had great use of, and one who was of little use. To lose two key persons, resulted in us being a bit weakened.'</p> <p>'It is important that the communication with the CEs is documented so that the others can see what has been decided'.</p>	<p><i>Coping practices T<sub>1</sub></i>;</p> <p>Routinizing – joint understanding of how the controlling routine on-site should be performed</p> <p>Reorganizing – removing people whose way of controlling violates the trust in the relationship</p>	

(Continues)

Table I. (Continued)

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
Outcome	Developed joint controlling routine for the project – dialogue-based controlling Contractor trusts in the good intentions of controls and the abilities of those doing the control	‘The controls show that they do a good job, so I think this looks promising for the rest of the project. The dispute concerned only parts of the work’. ‘Some of them are good at calling us in advance before they, for instance, do a blast in the tunnel – then it’s our job to check the status of the rock’. ‘We tell them in person that they will receive a control report via the web system – we try to avoid them getting it just in writing as it may easily be seen as provocative’.	‘We have a collegial atmosphere with the client. We do what we are supposed to do so we are not nervous when they visit the site. I also think they are rather good at talking to the guys at the construction site’. ‘I think it [cooperation] works very well. We call them when we have problems with the rock or are about to do a blast. We discuss what is the best way forward, and the CEs will later put it in the system. Then everything is properly documented’.	From feedforward and monitoring to concurrent controlling, recreating trust for each other The domain of concurrent control and trust	Redefining the controlling and trusting domain T <sub>1</sub>
	<i>Client:</i> Perceiving the contractor as competent and benevolent in terms of finding solutions. Agreed-upon structures (contract operationalized) <i>Contractor:</i> Perceiving the client as supportive and benevolent in terms of progression and plan. Appreciating client competence. Agreed-upon structures (contract operationalized)	‘My take on the job is that I am there to solve the job together with them [the contractor]. I am not there to comment on everything they do wrong, I am there to help’.	‘We have to have good communication with the other parties, all the time. We must be open, honest, and have trust in each other. If we do not have that in place it will go bad’. ‘I use the control for all it is worth. We receive documentation from the control engineers, some emails, and checklists. This makes things traceable. Also, the control engineers might come up with issues they are unsure about and then I can explain and show how we have documented the issues’.	Perceive each other as benevolent and competent, controlled in line with expectations	Expectations formed in T <sub>1</sub>

Abbreviations: CIP, Collaborative planning phase; CEs, Controlling engineers; IOR, Inter-organizational relationship.

of how the feedforward controlling was perceived. Consequently, the parties agreed that controlling should start with the CEs talking with the relevant contractor representatives on-site and then writing the control report, facilitating concurrent controlling.

Another controlling issue that created tensions between the parties in this period occurred around the CE's responsibility to follow up on the contractor's self-assessment quality reports. On several occasions, the CE-in-charge expressed dissatisfaction with the documentation provided. In a heated meeting, the CE recalled stating: 'This way of documenting is not by the contract, we need more documentation, and if you don't come with this within the next two weeks you can expect sanctions', thus performing monitoring control. This declaration created a tense atmosphere in the relationship, even though it only concerned parts of the work in the project. Two representatives from each party became responsible for solving the dispute around the documentation in separate meetings. However, this coping effort, which we identify as a *re-organizing* coping practice, was not successful and eventually, the two representatives were removed from the project. Again, the parties used the construction meetings to agree on how to document the contractor's self-assessment of deliverance quality, thus relying on the *routinizing* practice.

We see that the two incidents evoked different enactments in relation to the existing controlling and trusting domain established during the CP. The client related their enactment to the responsibility of controlling, helping, and ensuring that the contractor performed according to the contract and to avoid performance risk. While the contractor related their enactment to the tentative trust established during the CP and perceived the client's feedforward and monitoring control as a violation of their expectations (perceiving relational risk). Redefining the controlling and trusting domain was enabled by the two coping practices—routinizing and re-organizing. The adjustment of the controlling routine from feedforward and monitoring to concurrent controlling enabled prompt handling of issues, reducing the risk of mistakes and redoing, and avoiding escalation of tensions. It also helped re-establishing the trust in the relationship, and thereby contributing to once (re)forming positive expectations. Thus, mitigating the previously enacted performance and relational risks. Our observations during meetings and site visits confirmed the redefining of the controlling and trusting domain as the contractor often invited the CEs to the site for controlling that the work complied with the contract (concurrent controlling). The contractor appreciated the competence and help (perceived trust) from the CEs to comply with the contract and vice versa.

## Period 2: Tensions Due to the Construction of a Critical Bridge

Period 2 focuses on an incident related to missing design specifications for the main bridge – a critical component of the project and the responsibility of the client. Like Period 2, this is a within-IOR incident and tensions rose when the design specifications were severely delayed. [Table II](#) illustrates the action–reaction cycle for coping with this incident in Period 2.

According to the contract, the client was responsible for providing all designs in the project. The client had hired an engineering firm to do the design work. In late fall 2016, this firm had challenges in meeting the deadline to deliver the design for the main bridge. The client had been aware of the situation for some time but did not inform the

Table II. The interplay between control-trust dynamics and IOR dynamics in INFRAPRO in Period 2

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
PERIOD 2: Initial conditions	Tensions due to the construction of a critical bridge <i>Client:</i> Perceiving the contractor as competent and benevolent in terms of finding solutions and upholding quality <i>Contractor:</i> Perceiving the client as supportive, competent, and benevolent. Controlling performed in line with expectations	‘In the tunnel, they ask us for control. We give them a note about what has been decided and then they are happy. Control is then a way to document what we agree on?’	‘We have a good tone. We do what we are supposed to do so we are not worried about their visits. I also think they are rather good at talking to the guys on the construction site’.	The domain of concurrent control and trust Positive expectations created in $T_1$	Control-trust dynamics $T_1$ Expectations $T_1$
Source of IOR dynamics	Missing drawings of the critical bridge in the project due to delays at the engineering firm hired by the client			Within IOR incident	Critical incident $T_2$
Process	Risky to share knowledge about challenges; the contractor can demand compensation – not having trust in contractor in terms of requiring compensation for delays Ongoing reliance on contract	‘We knew quite early that it would be a problem with the drawings for the bridge, but we wanted to wait and see if it could be solved. The contractor was asking us all the time and we had no good answer’.		<i>Client’s action <math>T_2</math>:</i> Enact legal risk leading to controlling by contract, but 3 <sup>rd</sup> party did not deliver bridge design according to plan	Action – reaction cycle $T_2$ : coping with asymmetries and tensions

(Continues)



Table II. (Continued)

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
	<p>Perceptions of the client withholding information</p> <p>Mistrust in the ability to uphold commitments</p> <p>Still trust in terms of benevolence and competence in managing the project</p>		<p>‘We have the progression plan, and if [the third party] don’t follow up, it would be good to know why. It might be information that is important for us’.</p> <p>‘They promised us the drawings in March, but nothing came before June. We had 20 people available to start the work and suddenly we only had work for 10. This costs us money’.</p> <p>‘And, then design ... but this is a problem everywhere. Consultants and design ... [laughing] ... well, there is a big potential for improvement’.</p>	<p><i>Contractor’s reaction T<sub>2</sub></i>:                      Enact performance risk (project progression) and perceive the client as being unable to deliver the design on time, thereby violating the contractual agreement</p>	

(Continues)

Table II. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p><i>Client:</i> Withholding information due to fear of demands for economic compensation from the contractor</p> <p>Trust in terms of problem-solving and working according to plan but not in terms of requirements for compensation</p> <p>Revealing difficulties – deciding to show vulnerability due to trust in the contractor's benevolence and desire to solve problems</p> <p><i>Contractor:</i> Needs the drawings to keep the planned project schedule</p> <p>Decided to help the client due to trust stemming from the collaborative planning and the need for effective production</p>	<p>'We had many meetings with various representatives from the engineering firm without any progression. We were quite frustrated'.</p> <p>'It's not just one side of an issue, it's like ... we have had some bad contracts and design, and it might be difficult to deal with this about the main contractor. It quickly results in additions, that they require additions; you see, if they have to wait, it's not good really'.</p>	<p>'I had a bad feeling at the beginning related to the bridge as I have some experience with this consultant from before and I know that they struggle to deliver the drawings at the right time'.</p> <p>'We should have started in the fall of 2016, but the bridge design was not available. In a construction meeting in October, the client said that we could just leave the project – or we could sit and wait for the bridge design. But we chose to wait and started working on some other, smaller bridges'.</p>	<p><i>Tensions: T<sub>2</sub>:</i> Different enactments of risk – both parties leaning on the contract but in different ways</p>	

(Continues)

Table II. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p>Discussing and exchanging information informally</p> <p>Being open and mobilizing resources</p> <p>Joint planning</p> <p>Suggesting and reaffirming solutions</p>	<p>‘The issue with the bridge was solved by a close collaboration between the contractor and client’.</p> <p>‘We had work meetings every second week. We also included one of our specialists on bridge construction from the head office in the team to support the process of developing the drawings’.</p> <p>‘We took a risk. The contractor had to do the construction of the bridge on temporary drawings’.</p> <p>‘We have long experience with constructing bridges – both on the client and the contractor side’.</p>	<p>‘Well, you cannot continue being annoyed/angry for all eternity ... you have to swallow your pride. It has to go both ways, if they give in on one issue, we have to on something else, so at the end of the day, then ... it’s okay, but if it was clear, you get paid for what you do and done with that, and then all had calculated on the same basis. And then it is designed, but this is a problem everywhere. Consultants and design ... well [laughing] ... there is a big potential for improvement’.</p> <p>‘We included specialists on bridge construction at the head office into the development team’.</p> <p>‘We as contractors want to deliver work that the client is happy with. It was excellent cooperation – we all wanted to deliver the project in the best possible manner’.</p>	<p><i>Coping practice T<sub>2</sub></i>;</p> <p>Joint problem-solving – join forces to develop the design of the critical bridge based on positive expectations created in T<sub>1</sub> – perceive each other as competent and benevolent</p>	

(Continues)

Table II. (Continued)

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
Outcome	<p>Trust in the abilities to uphold progression and willingness to contribute to finding solutions</p> <p>Supported by documenting the work according to regulations and specifications in the contract</p> <p>Deepening trusting relations – competent, common objectives</p>	<p>‘They [the contractor] talked about, for example, how they have planned to build the bridge. That was an important insight. And we did the same with all the constructions, how they have planned it and how we want the documentation to be submitted into an e-room like it was about the future progress. That was very ... that was very nice to get insight into, before starting the work.’</p>	<p>‘We sat down, listened to each other, and focused on doing what we had to do to keep progressing’. Things that came up were discussed openly. What does it mean for us? What does it mean for you? And how can we solve this together? I might not always have the same opinion as him [client project manager], but several times I have stated, ‘Okay, we disagree, but let us find a way to solve this’.</p>	<p>Deep trust and less formal control create one another</p> <p>The domain of deep trust and less formal control</p>	<p>Redefining the controlling and trusting domain <math>T_2</math></p>

(Continues)

Table II. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p><i>Client:</i> Reassuring that the contractor is competent, benevolent, and has high integrity</p> <p><i>Contractor:</i> Reassuring that the client wants to help (benevolence) and that the client supports the project production to benefit all parties</p>	<p>'I praise the contractor for this attitude [seeking solutions] – they are more concerned with finding solutions and effectively progressing the project. And when we are helping because we also want them to be able to work efficiently so that everything works smoothly and everyone will earn their money ... they could have raised several claims during this period, but they were more concerned about finalizing the project on time'.</p> <p>'We [project managers] are starting to get to know each other better. These days we call each other more informally in the evenings. It must be some give and take – and it must be a balance. But it does not have to be equal all the time; it levels out in the end, I think. I like an open-book approach because it requires trust from you and trust from them. We can call each other and talk bullshit, having no real issues to discuss; just ask how it is going. I would not do that if I had no trust'.</p>	<p>'I think we have developed a trusting relationship, which makes the cooperation easier. Nobody believes we want to trick or fool each other'.</p> <p>'I must praise the client; they strived to find solutions together with us. They could have told us to wait for the drawings, but we were ready to start. As contractors, we like to deliver work that the client is happy with. The cooperation has been great'.</p>	<p>Perceive each other as trustworthy.</p> <p>Share project objectives</p>	<p>Expectations formed in T<sub>2</sub></p>

Abbreviation: IOR, Inter-organizational relationship.

contractor, hoping it would be solved in due time. The engineering firm was in severe financial trouble and eventually went bankrupt. Another engineering firm was contracted, but this delayed the design further and created major challenges for the contractor, which had staffed up for full production according to the project schedule. In the construction meeting minutes from this period, this issue was at the top of the agenda and the contractor put substantial pressure on the client to ensure that the engineering firm complied with deadlines, causing tensions to arise in the relationship. Adding to the challenges, the client and contractor had agreed to open the highway 10 months ahead of the original planned opening. If the contractor achieved this target, they would get a bonus. With the missing design, this incentive was about to be jeopardized. The contractor was therefore enacting performance risk; that is, not being able to finalize the project in due time and lose the bonus. The contractor felt the client was withholding information and was not in control of the situation and the deliverables from the engineering firm.

The client eventually informed the contractor about the situation, being aware of the risk that if they did not uphold their obligations to provide sufficient designs in due time the contractor could ask for compensation for incurred costs until the design was delivered. Hence, the client enacted contractual risk, and recognized that the potential delay of the project could jeopardize the trusting relationship with the contractor. When the client finally shared the situation, the contractor chose to put formalities aside to help solve the challenge with the missing design, explaining that it was owing to their trust (competent and benevolent) in the client. The trusting relations established during the CP and the handling of the controlling issues in Period 1 impacted the decision to help the client in overcoming the challenge with the missing bridge design. It was also motivated by the importance of the design for their own work, as they already had people on-site ready to start the production. The people on-site were some of the contractor's best experts in the field of bridge construction; hence, they were only available for a limited time before they proceeded to other projects. In the weeks to follow, representatives from the client and the contractor interacted regularly to solve the issue. A series of joint meetings were conducted at top management and project manager levels of both organizations. The parties identified that together they possessed the necessary competence and resources to execute the design of the bridge owing to highly competent and experienced staff being present on-site. Both parties mobilized additional specialists from their respective home organizations to support the local team. They worked closely together in designing, planning, and constructing the bridge; thus, we label this coping practice *joint problem-solving*. Interviews and observations after Period 2 show that the joint problem-solving practice contributed to redefine the controlling and trusting domain in the relationship mitigating enacted legal and performance risks. The controlling and trusting domain changed from concurrent controlling and trust in Period 1 to more informal controlling and deep trust in Period 2, where the benevolent behaviours in coping with the missing bridge design formed the basis for more informal controlling.

### **Period 3: Tensions Due to Entry of the Electrical Contractor**

The critical incident in Period 3 concerns the entry of the electrical contractor who performed the electrical installations in the tunnel – a critical incident that emerged from an external source. The action–reaction cycle of coping with tensions in Period 3 is presented in [Table III](#).

Table III. The interplay between control-trust dynamics and IOR dynamics in INFRAPRO in Period 3

<i>Time</i>	<i>Empirical manifests</i>	<i>Client quotes</i>	<i>Contractor quotes</i>	<i>Second-order themes</i>	<i>Concepts</i>
<b>PERIOD 3:</b> Tensions due to the entry of the electrical contractor					
Initial conditions	Both parties express high trust in each other	‘We are trying to collaborate in a good manner so there is not much fuss.’	‘It’s completely open, full trust both ways. I was somehow warned when I first came here because it was this person from [the client], who was very nice when you talked to him, but then you’d suddenly got a report right in your face the next morning. However, I’ve been here for three months, and haven’t noticed anything. I haven’t given it much thought either’.	The domain of deep trust and less formal control Positive expectations $T_2$	Control-trust dynamics $T_2$ Expectations $T_2$
Source of IOR dynamics	Entry of the third-party contractor (electrical) in the project			External incident	Critical incident $T_3$
Process	Hybrid governance model Modifying specifications connected to electrical work in the tunnel Providing electrical contractor with a latitude of action	‘[Main contractor] is very interested in delivering a good project and [electrical contractor] is willing to contribute to that, but they’re not willing to be subject to time pressures impacting the quality of their delivery’. ‘The electrical contractor asks for clarifications and how to solve technical issues, instead of taking responsibility for the solution. Seems like they think it’s too risky and want to be told what to do. We trust them. It’s up to them to decide what equipment to use and who should deliver it’.		<i>Client’s action <math>T_3</math>:</i> Enact relational risk in relation to the third-party contractor who was unsure about the unfamiliar governance model of the project	Action – reaction cycle $T_3$ : coping with tensions

(Continues)

Table III. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p>Perceptions of too little control – increased uncertainty                      Need more feedback, to slow progress</p>		<p>‘We have the progression plan, and if [electrical contractor] don’t follow up, it would be good to know why. It might be information that is important for us’.                      ‘I think they have had a bad experience regarding collaboration with the main contractor before. They are terrified about getting a reputation that they are not able to deliver on time... – not only for what we have agreed upon but also for their future reputation. They don’t want to get in a position where they are mistrusted in the next project’.</p>	<p><i>Contractor’s reaction T<sub>3</sub></i>:                      Enact performance risk (progression).                      Perceived the client to not be in control of the third-party contractor; afraid of losing bonus due to delays in project completion</p>	
<p><i>Client</i>: Want to empower third-party contractors – holding back control and giving them time  <i>Contractor</i>: Uncertainty about roles, responsibilities, and intentions                      Worry about delays – loss of economic compensation</p>	<p>‘They [the contractor] want information. Then it’s good to write a control report saying that you’ve agreed with the [electrical contractor], and you write that so that they [the contractor] are in control of what has happened’.                      ‘They [the contractor’s managers] often call and ask, “Why have you done like this, why don’t you do like that?”, because [there] might be a specific reason for that, which is not easy to see’.</p>	<p>‘What was negative was that [electrical contractor] wasn’t used to having someone hanging over them like that. We gave them some principles that they weren’t used to. I think they experienced that negatively’.                      ‘There is much direct contact between [the electrical contractor] and [the client], which means that we are a bit side-tracked, and it’s kind of stupid because often they suddenly realize that they have to involve us in the discussion to find solutions’.</p>	<p><i>Tensions T<sub>3</sub></i>: Different enactments of risk                      – one party leaning on trust and the other leaning on control</p>		

(Continues)



Table III. (Continued)

Time	Empirical manifests	Client quotes	Contractor quotes	Second-order themes	Concepts
	<p>Arrange a new CP session (discussing and exchanging information, joint planning and problem-solving, showing willingness and sharing information)</p> <p>Adding new competence to the project</p> <p>Re-introduce the special meeting series</p>	<p>'Both me and [the contractor] do not know that much about the electrical work in the tunnel. We understand the big picture, but not the details. Therefore, we needed to include additional resources in the project'.</p> <p>'A special meeting was arranged every second week to discuss what to do with the electrical work in the tunnel'.</p>	<p>'Special meetings with the electrical contractor were very good for this specific trade, but maybe they were too special as the contractor's work in the tunnel was not included. Often, they asked me after meetings about issues and sometimes what they have planned could not be done and we have to do another round'.</p> <p>'The electrical contractor is competent'.</p>	<p><i>Coping/practice T<sub>3</sub></i>:                      Reorganizing                      – re-introducing meeting structures developed at the start of the project and Periods 1 and 2, and adding new competence to the project</p>	
Outcome	<p>From asking for control to more trust in the abilities to find solutions and share information</p> <p>Use known measures to recreate positive expectations (CP, meetings, adding external competence)</p>	<p>'They [CEs] are used to us having specialized CEs on electrical work on-site all the time, but we haven't seen the need for it, going there every day; it's like, a long way, and there are other tools, such as Skype, sharing screen, etc., so controlling can be done virtually, and the electrical contractor is competent'.</p>	<p>'We hired [the electrical contractor] to do some work on the cable bridges in the tunnel since we didn't have competent people available on site. Then they occupied their workers till the specifications of [the electrical contractor] work was ready...they knew how to do the work, had another approach, and earned money. But, fair enough, we learned from it'.</p>	<p>The domain of deep trust and informal control</p>	<p>Redefining the controlling and trusting domain T<sub>3</sub></p>
	<p><i>Client</i>: Interpreting party as having abilities, good intentions, and integrity</p> <p><i>Contractor</i>: Interpreting party as having the ability, good intentions, and integrity</p>	<p>'It came from the willingness to get things done, and then we will build. "Things do not always go smoothly, and then we must find solutions. We have to solve this, it's a challenge, and we have to deal with it"'</p>	<p>'We are proud of what we have jointly done in the project. But at the same time, it has been a battle. We managed because of the people involved in the project and their solution-oriented attitudes'.</p> <p>'Being open, putting things on the agenda, and acknowledging that "we have to do this together" has made it possible to solve a lot. But the client took the initiative of getting help from outside, and that was very good. Respect, trust, and honesty have been absolute musts'.</p>	<p>Perceive each other as trustworthy. They deliver the project above expectations in the contract (before the planned completion date and below budget)</p> <p>Positive reputation for future projects</p>	<p>Expectations formed in T<sub>3</sub></p>

Abbreviations: CP, Collaborative planning phase; CEs, Controlling engineers.

The client had decided on a hybrid governance model with a direct contractual relationship with the electrical contractor, while the main contractor was responsible for coordinating the work in the tunnel, including the electrical work. The electrical contractor was not satisfied working in parallel with the main contractor in the tunnel. Further, the hybrid governance model was new to all the parties involved and required intensive coordination, particularly because of safety reasons. The electrical contractor preferred to cooperate with the client, without a forced-upon relationship with the contractor. Thus, the hybrid governance model inflicted uncertainties about roles and responsibilities among the parties and created new tensions in the client–contractor relationship.

The involvement of the electrical contractor was delayed owing to changes in the design specifications of the electrical work in the tunnel. Updated technology was included, and the existing specifications were largely outdated. After some lengthy discussions regarding who should be responsible for the adjustments, the electrical contractor agreed to do the design work but soon started asking for clarifications, feedback, and specifications concerning the technical system chosen by the client. The client's representatives on-site, being inexperienced in controlling such electrical work, expressed their frustration over what they perceived as the electrical contractor's unwillingness to take responsibility. This caused delays that affected the main contractor, who enacted performance risk as they were responsible for ordering and installing some of the equipment in the tunnel. This equipment had a long lead time and could not be ordered without knowing the specifications. The electrical contractor started questioning whether the planned timeline for the project was realistic. The client and contractor's agreement to finalize the project ahead of the planned time required a high level of parallel work by the two contractors in the tunnel. The electrical contractor estimated that they would need four months beyond the target date initially suggested by the client and the contractor. This estimation affected the focal client–contractor relationship because such a delay created uncertainty around the contractor's compensation for completing the project 10 months ahead of schedule.

The controlling of electrical work was important for the contractor because the coordination of work and interfaces between the two contractors were critical for meeting the scheduled completion date for the project. However, CEs expressed discomfort about this controlling owing to their lack of experience with electrical work. This uncertainty created tensions in the relationship as the contractor perceived the client as not having sufficient control and knowledge about the work of the electrical contractor. Tensions emerged because the client wanted to empower and give time to the electrical contractor as they enacted relational risk, but the contractor feared delays and therefore questioned the ability of the client to manage the situation and enacted performance risk. Thus, the trust the contractor had in the client's abilities to adhere to an agreed-upon schedule was now questioned and the contractor was worried about the client's abilities to deal with controlling the electrical contractor, distorting the present controlling and trusting domain.

The respective project managers, again, acknowledged that the situation was becoming urgent and tense, giving rise to negative expectations stemming from differing views on the need for control versus trust. Because of the deep trust developed in the relationship in Period 2, it was possible to address these tensions. The coping practice

applied to deal with the incident in Period 3 was, again, *re-organizing*, but this time, more successfully. The project managers agreed to conduct a one-day CP with the electrical contractor, referring to the good experience they had with the CP at the start of the project. This workshop enabled an open discussion of issues, and the parties got to know each other in a setting outside of the immediate work. According to the interviewees, the new CP created a better understanding of the circumstances and the intentions behind different attitudes, and the parties recognized that by mobilizing joint knowledge (as they did in Period 2) they could finalize the project on time. To cope with the issues of controlling and lack of expertise, two new CEs, who were experts in controlling electrical work in tunnels, were allocated to the project. A highly experienced tunnel worker from the contractor's side, who one interviewee referred to as a 'God-send', also joined the project. The parties established new formal meeting arenas, including an internal client meeting series with local CEs and CE experts, and the electrical contractor was included in the main contractor's bi-weekly production meeting series. A special meeting series that included all relevant parties were established for the electrical contracting work. After a few weeks, the tunnel work was up to full speed. In March 2019, the parties announced the opening of the highway at the date previously agreed upon. The re-organizing practice adjusted the structural context and enabled redefining the controlling and trusting domain where the parties had deep trust in each other (competent, benevolent, high integrity) and the control became more informal.

### **Coping Practices Revise Control–Trust Dynamics in IORs**

The above narratives of the three periods illustrate how critical incidents cause tensions and influence control–trust dynamics. Asymmetries between the parties emerge because they perceive vulnerabilities and enact risks differently relating to the existing controlling and trusting domain. Coping practices adjust the relationship between control and/or trust and redefine the existing controlling and trusting domain, thereby changing the control–trust dynamics in the IOR. The controlling and trusting domain is only temporal as future critical incidents (IOR changes) may potentially distort the relationship, creating new asymmetries that need to be coped with to (re)form positive expectations in the relationship. We identified three coping practices in INFRAPRO, *routinizing*, *joint problem-solving*, and *re-organizing* which are explained below.

The *routinizing* practice concerns redefining the controlling and trusting domain by adjusting and clarifying controlling routines and procedures (the structural context). In INFRAPRO, *routinizing* helped the parties to cope with tensions caused by a within-*IOR* incident; that is, different enactments of the CEs' controls, as exemplified in Period 1. The parties were familiar with the standard contract, which outlined the controlling regime, and they had jointly agreed in the CP on the routines regarding what to control and how. These structures enabled trust between the parties, thus reflecting how control and trust together formed positive expectations. However, this controlling and trusting domain was distorted because of the controlling incident, in which the client enacted performance risk (control) and the contractor enacted relational risk (trust) owing to the CEs' way of controlling. To cope with the emerging tensions, the parties agreed to redefine and

clarify the controlling routines and procedures. These adjustments resulted in the CEs performing the controlling more in line with the contractor's expectations created during the CP. Thus, the controlling changed from monitoring and feedforward controlling to concurrent controlling. The new form of controlling was perceived as reinforcing trust as it helped to reduce uncertainty and created benevolence in the relationship. By revising the structural context (from monitoring and feedforward controlling to concurrent controlling) trusting relations in the IOR again developed, and control and trust again referred to and created one another to form positive expectations in the relationship.

The *joint problem-solving* practice encompasses developing solutions to critical incidents as an integrated team despite belonging to independent organizations with divergent interests. Initiating joint problem-solving requires a certain level of trust between the parties, creating the belief that, together, they are competent to solve the challenge. In INFRAPRO, we observed these circumstances around the critical incidents with the bridge (within-IOR incident) and the entry of the third-party electrical contractor (external incident) where the enactments of risk differed between the client and the contractor. Regarding the bridge incident, both parties enacted contractual risk (control) but in distinct ways – the client enacted legal risk while the contractor enacted performance risk. Regarding the third-party contractor, the client enacted relational risk (trust issues) related to the electrical contractor while the contractor enacted performance risk (contract). The parties managed to cope with these IOR changes through joint problem-solving that was buttressed by the trust they had created earlier in the relationship in the CP and through their abilities to handle the critical incident in Period 1. In particular, the informal cooperation between the respective project managers was important because it provided a basis for continuous mutual adjustment in the relationship. The joint problem-solving practice was not defined by the contract but was developed based on trusting relations earlier in the relationship. Although most of the problem-solving activities regarding the bridge and the electrical work in the tunnel took place within formal project operations, a regular complementary dialogue was sustained among relevant actors from the head offices of both organizations to ensure that the solutions developed were acceptable to all parties and within the current contract scheme. Further, a coping practice that was successful earlier in the relationship was reiterated when future tensions occur among the parties; that is, the joint problem-solving practice was applied both in Period 2 and 3 in INFRAPRO. The joint problem-solving practice adjusted trust (agency) where the parties view each other as benevolent and with high ability to get improved control with IOR incidents (missing bridge design and uncertainty around the governance of the project).

The *re-organizing* practice concerns changes in the structural context (control) enabling cooperation between the parties. In INFRAPRO, the changes in structures – replacing people, developing new meeting arenas, and changing the project end date – were driven primarily by the critical incidents that occurred in the project. Regarding the control incident (Period 1), people with trust issues on both sides of the dyad (relational risk) were replaced but the parties also added resources to the project to improve control (new electrical CEs and resources from the respective head offices to support the bridge design). The tensions in the relationship caused by the missing bridge design and the electrical work in the tunnel (performance risk) led to the establishment of new meeting arenas (special meetings for joint problem-solving) and reconfirmation of the deadline for the

completion of the project. The re-organizing practice helped the parties gain more control over unpredictable and challenging changes in the IOR, while also reinforcing trust by signalling benevolence and integrity by supporting and spending time on these meetings. The re-organizing practice was also reiterated several times during the project. Because the parties had experienced the benefits of establishing new meeting arenas when coping with the missing bridge design, similar arenas were established for dealing with the critical incident connected to the electrical work in the tunnel. Thus, the re-organizing practice revised controls (introduced IOR more structure) to enhance trust-building in the relationship.

### A Process Model of Control–Trust Dynamics in IORs

By combining the duality perspective on control and trust dynamics (Möllering, 2005) with the practice theory perspective (Orlikowski, 2010) in a longitudinal study, we explained how control–trust dynamics interplay with IOR dynamics, including how and when control and trust refer to and create one another in this interplay. We thereby contribute to the conceptualizing of how control–trust dynamics develop in IORs. The notions of the *controlling and trusting domain* and *action–reaction cycles* are key for this understanding since there are multiple and temporal controlling and trusting domains with reciprocal relationships as the IOR evolves. Furthermore, the role of *critical incidents* is key because they distort the relationship and reveal how parties may perceive vulnerabilities differently related to control and trust in certain situations. Because of conflicting enactments of risk among the parties, they rely differently on control and trust in the existing controlling and trusting domain. Thus, the previously formed positive expectations are challenged. Given ambitions of re(forming) positive expectations, the parties engage in various *coping practices* to deal with these asymmetries, and if successful, these will help them adjust control and trust to re(form) positive expectations. We illustrate this dynamism in a process model of the development of control–trust dynamics in IORs.

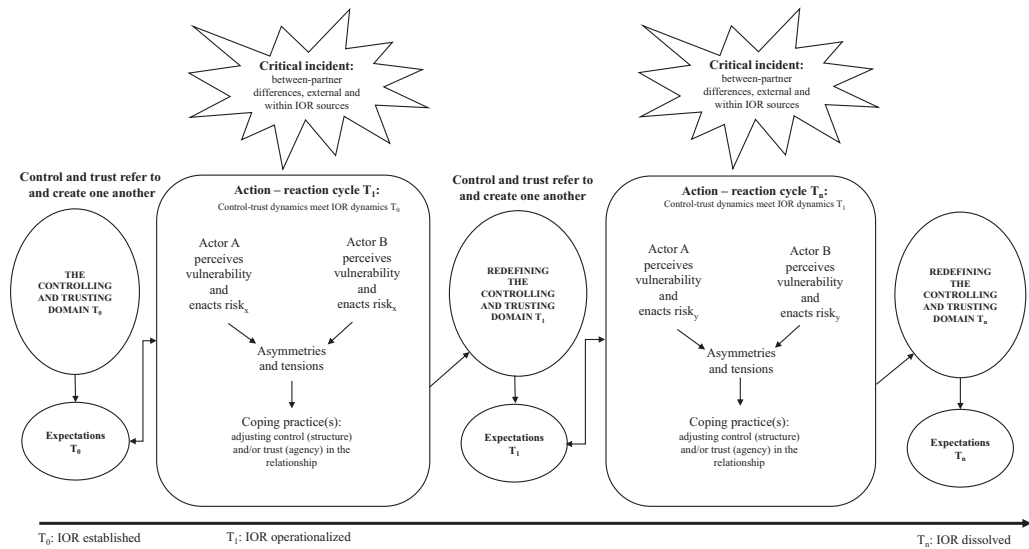


Figure 2. A process model of control–trust dynamics in inter-organizational relationships (IORs)

This action–reaction cycle leads to a redefined controlling and trusting domain and changes the dynamics between control and trust in the relationship, and the coping practices mediate between the multiple and temporal controlling and trusting domains in the IOR.

## DISCUSSION AND CONCLUSION

In contrast to many previous studies on control–trust dynamics (Long and Sitkin, 2018), our study demonstrates the continuous adjustments of the relationship between control and trust as the IOR evolves. We show that the development of control–trust dynamics must be understood through *action–reaction cycles* in which control–trust dynamics interplay with IOR dynamics. IOR dynamics are changes in the conditions, processes, or mechanisms of the IOR (Majchrzak et al., 2015), which threaten to distort the relationship – what we term *critical incidents*. These may be enacted differently by the parties, creating asymmetry in the relationship. We introduce the concept of the *controlling and trusting domain* to describe how control and trust relate to and create one another in certain situations and points of time in the relationship. The incidents are enacted in relation to the existing controlling and trusting domain. As control–trust dynamics represent something that is in constant change, the notion of the controlling and trusting domain incurs only a temporal stability between control and trust in the relationship. Thereby, our study helps to unpack the dialectic and tension-filled relationship between control and trust as IORs evolve.

Our findings are consistent with previous research that challenges the assumption of symmetrical relationships in IORs (De Rond and Bouchikhi, 2004; Graebner et al., 2020; Lumineau and Oliveira, 2018; McEvily et al., 2017). We extend this research by identifying how asymmetries and tensions emerge in IORs (caused by differing enactments of critical incidents) and how parties' positive expectations for each other are formed over time because of their abilities to deal with these asymmetries through various *coping practices*. Thus, our findings demonstrate that control–trust dynamics in IORs cannot be sufficiently understood nor studied without considering time and parties' asymmetric perceptions of critical incidents as they trust each other in some situations and do not in others (Lewicki et al., 1998) and ask for more control in some situations and less in others (Long and Sitkin, 2018). None of the identified critical incidents in our study concerned between-partner differences (Majchrzak et al., 2015). However, this type of IOR dynamics might emerge in the relationship when the coping with vulnerability and risk asymmetries is not successful; that is, the parties cannot adjust control and trust to redefine the controlling and trusting domain. Since our case only addressed an IOR where positive expectations were (re)formed, this provides an opportunity for future research which may illuminate the development of distrust, conflicts, and disputes in IORs.

Our study further extends the duality perspective on control and trust by unpacking how control and trust refer to and create one another in a relationship, and in doing so, address the call by several researchers for such studies (Möllering, 2005; Möllering and Sydow, 2019; Sydow and Windeler, 2003). We argue that these processes are particularly

relevant for understanding how control–trust dynamics relate to IOR dynamics. We find that detailing the vulnerability/risk asymmetries between IOR parties emerging from critical incidents are key for understanding the inseparable relationship between control and trust. This contrasts with previous research on IOR vulnerability/risk which assumes symmetry between IOR parties (Das and Teng, 1998b; de Man and Roijackers, 2009). We find that risk enactments often vary between parties around the same critical incident and over time. Parties' risk enactments relate to the existing controlling and trusting domain, albeit in different ways since the risk enactment of a critical incident is embedded in the present controlling and trusting domain. If one or both parties experience changes deviating from their perceptions of the existing controlling and trusting domain, asymmetries between the parties occur that potentially distort the relationship. To form positive expectations for each other, the parties engage in coping practices, if successfully, adjust trust and/or control to fit the new situation ensuring that control and trust again refer to and create one another. Thus, we conclude that to form positive expectations in a relationship, control and trust must refer to and create one another in a manner that are accepted by both parties. We thus argue that the relationship between control and trust (as a duality) can best be studied by looking at control–trust dynamics from a practice theory perspective (Orlikowski, 2010). This perspective enables us to bring the interactions between structures and agency to life, highlighting parties' controlling and trusting actions and perceptions, and the embedded nature of these processes and how they are played out in action through people's everyday experiences.

We identified three coping practices in the study of INFRAPRO that adjusted control and trust to (re)form positive expectations between the parties. Two practices – routinizing and re-organizing – concern adjusting control while joint problem-solving concerns adjusting trust. However, as IOR dynamics emerge from many different sources (Majchrzak et al., 2015) and as there are many forms of IORs (Lumineau and Oliveira, 2018; Manning, 2017), our identified types of coping practices are non-exclusive. This limitation provides an avenue for future research on how control–trust dynamics relate to IOR dynamics and how this interplay develops over time.

Our findings implies that in managing IORs, the parties are better able to cope with tensions in the relationship if they acknowledge that control and trust cannot be seen in isolation and recognize the presence of temporal controlling and trusting domains. Managerial awareness is often necessary when critical incidents occur in the IOR as they may incur conflicting risk enactments between the parties. Coping practices, such as the three in our study, help redefining the controlling and trusting domain as they mediate between the multiple and temporal controlling and trusting domains in the IORs. As such coping practices e.g., routinizing, joint problem solving, and re-organizing, represent key tools for managers to ensure that control and trust refer to and create one another to form positive expectations and, thus, to ensure cooperation.

## ACKNOWLEDGMENTS

The first two authors contributed equally to this article. We would like to thank the guest editors and three anonymous reviewers for their invaluable feedback and guidance during the review process. We would also like to thank Associate editor Gideon Markman for invaluable feedback and guidance on the

last draft of the article. Further, we would like to thank Helene L. Coleman, Øystein D. Fjeldstad, Lars Huemer, and our colleagues in the Center for the Construction Industry for the excellent feedback on various drafts of the article.

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## APPENDIX A

Table AI. Data sources

<i>Type</i>	<i>Contractor</i>	<i>Client</i>	<i>Level</i>	<i>Date</i>	<i>n</i>
Interviews	8	4	PLs, foremen, CEs	Mar 2017	12
Interviews	4	3	Top managers, PLs, foremen	June 2017	7
Interviews	5	7	PLs, foremen, CEs	Nov 2017	12
Interviews	4	3	PLs, foremen, CEs	Oct 2018	7
Interviews	6	4	PLs, foremen, CEs	Jan 2019	10
Interviews	6	3	PLs, foremen, CEs	June 2019	9
Interviews	3	3	PLs, foremen, CEs	Aug 2019	6
Interviews	9	3	Top managers, PLs, foremen	Oct 2019	12
Total	45	30		8 times	75
Joint informal conversations among PLs	x	x	PLs	Feb 2017 Aug 2018 Dec 2018 May 2019	4
Total					4
CE shadowing	x	x	Observing CEs interacting with contractor at site	May 2019	3
CE shadowing	x	x		Aug 2019	2
Total					5
Meeting observations	x	x	4 meetings with representatives from both client and contractor 6 contractor meetings 31 pages of field notes	May 2017– Oct 2019	10
Total					10
Meeting presentations	x	x	Presentations of preliminary results from our study	June 2017 Nov 2017 Sept 2018 Oct 2018 April 2019 Oct 2019	6
Total					6
Documents	x	x	Contract related documents Documents concerning the collaborative phase Specification and regulation documents from client Construction meeting minutes Production meetings minutes Newspaper articles		6 6 12 47 2 6
Total					79

Abbreviations: Aug, August; CE, control engineer; Dec, December; Feb, February; Jan, January; Nov, November; Oct, October; PLs, project leaders; Sept, September.