Distrust in information systems research: A need for stronger theoretical contributions to our discipline

Dick Stenmark
Göteborg University, Dept. of Applied IT,
Göteborg, Sweden
dicks@gu.se

Abstract

The literature on distrust in information systems (IS) research is still in its infancy. In this literature review, we have compiled the IS-related texts on distrust from the major journals and conferences and examined how the IT artefact itself is portrayed and conceptualised. We find that a majority of the research treats information technology in a nominal way, failing to explicitly theorise about the specifics of the technology. In accordance with previous commentators we argue that this is unfortunate. We also find that not much consensus as to how to understand distrust has yet emerged, and we argue that a stronger focus on our core – the information technology – could help bring together the now rather fragmented understanding.

1. Introduction

Trust within and between organisations is an important prerequisite for activities such as open information sharing and effective coordination of activities, and something that lowers the transaction costs for many businesses [5]. Trust is thus a topic that has attracted a huge interest from IS scholars, particularly over the last ten years (cf. [3, 4]), and, as this paper will show, as much as one out of every five papers in leading Information Systems (IS) journals mentions trust in one way or the other.

However, whenever there is trust, there may also be distrust [17], but whilst trust has been acknowledged as an important topic for IS scholars, distrust has received far less attention. This can partly be explained by the commonly held assumption that distrust is only the negative inverse of trust. If distrust is merely the absence of trust then everything that is known about trust also applies to distrust, and there would be little need to study distrust separately. This view is being challenged. Convincing arguments as to why distrust should be understood as a separate construct were presented in the 1990s (cf. [23, 14]), and made it into the IS discourse early in the new millennium (cf. [18]). As this review shall reveal the topic is far from exhausted, and it is still too early for a consensus to have formed, but a significant number of IS scholars have acknowledged that if distrust indeed is a distinct concept with unique antecedents and consequences it should be important to study and understand distrust separately. Consequently, papers dealing explicitly with distrust have slowly started to surface in IS outlets, and it is towards these papers we direct our attention in our review.

Orlikowski and Iacono remind us, that we, as IS scholars, should focus our attention towards, and theorise about, not just "the dependent variable (that which the technology presumably affects or changes as it is developed, implemented, and used)" [22: 121] but on the IT artefact itself. Therefore, IS scholars ought not to concentrate merely on distrusts' philosophical or psychological dimensions but on how it affects and is affected by the specifics of information technology.

The purpose of this literature review is therefore not to establish an agreed upon definition of distrust, or explain how to discriminate between trust and distrust. In this paper we examine the extant IS literature on distrust and show how existing work theorises about IT in relation to distrust, (or neglects to do so).

Our work contributes to the discipline in two ways; firstly, we identify the lack of IS-specific contributions in existing distrust-related research and argue for a deeper engagement in the IT artefact from (dis)trust researchers. Secondly, we summarise the work on distrust carried out so far by IS scholars and show that little agreement has yet been reached. Our work identifies a shortage of knowledge and points to unresolved issues in our understanding of distrust.

2. Trust and Distrust Research

Trust has received increasing interest from IS scholars over the last couple of decades, resulting in, amongst other things, special issues on trust in JMIS (2008) and MISQ (2010). The volume of this interest

1530-1605/12 $26.00 © 2012 IEEE
DOI 10.1109/HICSS.2013.180

Table 1. A query for trust and distrust in the basket of six+two journals shows that distrust is an under-researched topic					
Journal (years covered)	No. of articles in the database	Articles mentioning trust (in the title)	Articles mentioning both trust & distrust	Articles mentioning distrust (in the title)	Articles dealing with distrust
MISQ (1977-2011)	1469	297 (8)	28 (1)	35 (1)	1
JMIS (1984-2011)	1079	273 (25)	25 (0)	32 (0)	2
ISJ (1991-2011)	500	168 (11)	20 (0)	21 (0)	0
ISR (1990-2011)	578	67 (7)	7 (0)	8 (0)	0
JAIS (2003-2011)	248	106 (4)	7 (1)	8 (1)	1
EJIS (1991-2011)	1184	223 (8)	12 (0)	12 (0)	0
JSIS (1991-2011)	638	161 (9)	15 (0)	16 (1)	1
JIT (1986-2011)	771	87 (3)	18 (0)	18 (0)	0
Sum	*6467*	*1382 (75)*	*132 (2)*	*150 (3)*	*5*

has focused on trust in online environments, predominatly related to electronic commerce, where the antecedents and consequences of trust on consumers shopping behaviour has been thoroughly examined [1, 15, 25]. Consequently, our understanding of these issues is said to have advanced significantly [3] and online trust in relation to e.g. IT adoption has been successfully mapped out [8, 20].

Using databases such as Business Source Premier and ProQuest, as well as the publishers' own databases (e.g., Palgrave Macmillan Journals), the eight top IS journal according to the AIS senior Scholars' basket of six+two ranking were queried for the words trust and distrust, respectively. The search included both a full text search (the option "all text") and a specific title search. Inconsistent results between the databases were sometimes found, but in order to have the broadest coverage possible, the source providing the most hits has consistently been chosen. The names of the journals, the years covered by the database, the total number of articles reported, and number of hits in full text and in the title are disclosed in Table 1. As can be seen in the table, the proportion of trust-related papers in the top-8 IS journal varies significantly from 43 per cent in JAIS to 11 per cent in JIT. The overall ratio was 21 per cent. The overall ratio between trust-papers and distrust-papers is 9 to 1 and – in addition – most of the distrust-papers also talked about trust.

Having manually examined all the 150 papers mentioning distrust, it turns out that in most cases distrust was either only mentioned in the editorial section, only mentioned in passing, or only mentioned in the reference list. So the fact that there are (as many as) 150 articles mentioning distrust is misleading. Eighty-eight per cent also discuss trust and there are only 18 papers that talks about distrust without referring to trust. There were in fact only five research papers that really discussed distrust as a separate construct, and chiefs amongst those are obviously the three papers referring to distrust in the titles (i.e., [7, 9, 10]). This result prompted a further look also to other sources to see whether the topic of distrust perhaps was too new to have made it into the major journals. The Association of Information System's electronic library (AISeL) was therefore queried to broaden the search and include also papers from the major IS conferences. Searching the AISeL for the term 'distrust' in full text returned a total of 418 hits but when examined manually it was revealed that more than 90% of these had only three or less occurrences of the term 'distrust' (see Table 2).

All these papers were discarded. The remaining 39 papers were examined more closely and papers that overlapped with the EBSCO search (e.g. papers from MISQ and JAIS), papers that were purely editorial, or papers that mentioned distrust only superficially

Table 2. A full-text query for the term 'distrust' in the AIS electronic library				
No. of occurrences of the word 'distrust' in the text	No. of papers	No. of papers (accumulated)	%	% (accumulated)
0	87	87	20.8	20.8
1-3	292	379	69.9	90.7
4-10	23	402	5.5	96.2
11-50	9	411	2.1	98.3
>50	7	418	1.7	100.0
Sum	*418*	*418*	*100.0*	*100.0*

without any attempt to conceptualise the construct were also removed. This filtering resulted in a set of 10 additional Information Systems conference papers.

We are not suggesting that the above process has uncovered every paper on the topic of distrust, since more targeted journals and conferences (focusing e.g. on e-commerce) have deliberately been excluded. However, as Webster and Watson [24] argue, the major contributions are likely to be found in the top journals (and conferences) and hence there is where we start our search. In addition, having applied what Webster and Watson refer to as going backward (i.e., reviewing the references) and going forward (i.e., using Web of Science and Google Scholar identifying papers citing the core articles), we identified six additional key papers on distrust. The following review is thus based on twenty-two articles.

3. Conceptualisation of the IT artefact in relation to distrust

In their iconoclastic paper from 2001, Orlikowski and Iacono [22] challenge IS scholars to treat technology seriously instead of taking it for granted, talking about it as were it a unified, uniform entity. By using generalising phrases such as "the Internet" or "e-Commerce" we fail to acknowledge the many nuances that the technology behind these terms entails. Without a proper understanding of these particulars, we are ill-equipped to fully realise the implications IT has on individuals, organisations and society, Orlikowski and Iacono argue. Yet, much IS research tend to black-box technology, thus missing the opportunity to make a contribution to what should be the core of our discipline; the building of theories that would help us understand a world where information technology is playing an increasingly vital role [22]. To see where we stand when it comes to IS researchers' treatment of IT in relation to distrust we have analysed the above 22 papers using Orlikowski and Iacono's meta-categories for technology conceptualisation.

3.1. The nominal view or Technology as absent

The nominal view means that technology is mentioned in passing, almost incidental, using broad descriptions such as "information system" or "computer". In papers where IT is portrayed using a nominal view, details about the technology are not disclosed, nor is the artefact conceptualised or theorised. In essence, IT is absent in these papers. Unfortunately, we found this to be the case for the majority of the papers about distrust as 15 out of the 22 papers fell into this category.

To illustrate, in one of the first papers on distrust to be published in an IS outlet, McKnight and Chervany [18] argue that it is common for people to be suspicious of the web or of specific web vendors. It may therefore be the presence of distrust – as opposed to absence of trust – that keeps a person from engaging in e-commerce. Based on an inter-disciplinary review of existing distrust definitions, McKnight and Chervany present an e-commerce distrust construct model by providing a conceptual definition of distrust typology. In their paper, the authors argue convincingly that trust and distrust are separate constructs and they suggest that disposition to distrust, distrusting intentions, distrusting belief and institution-based distrust all affect our Internet behaviour. Their conclusion is that distrust of the Internet is indeed an aspect that e-vendors must deal with by managing both antecedents and consequences [18]. However, they do not provide any description of the technology involved when they loosely refer to phenomenon such as e-commerce.

In another well-cited paper in MISQ, Dimoka [6] argues that whilst information systems enable information exchange across time and place, these interactions are often impersonal, making it difficult to determine whom to trust or distrust. To shed light on the effects and nature of both trust and distrust during impersonal IT-enabled interaction, Dimoka orchestrated a set of eBay seller profiles that were manipulated to convey different levels of trust and distrust. Giving a group of students the task of buying an MP3 player at eBay's auction marketplace, the four made-up sellers were presented to the students. Using both behavioural data and Magnetic Resonance Imaging (MRI), Dimoka was able to show that trust and distrust activates different areas of the brain and that their dimensions thus are distinct and different.

Her study also revealed that the different brain areas satisfactorily predicted price premiums and that brain activity had stronger predictive power that the self-reported psychometric measures. While this research has opened "the black box of the brain" [7: 392], it keeps the black box of IT closed. The specifics underpinning the eBay auction marketplace, the technical mechanisms involved in buying, are not commented upon. Dimoka does a useful literature summary and her study provides highly relevant implications for the nature and dimensions of trust and distrust and the distinction and relationship between them, but the study offers no (theoretical) contribution to our understanding of "impersonal IT-enabled exchange".

3.2. The tool view or Technology as Productivity Tool

The tool view of technology means that the IT artefact is looked upon as a device that does what it is designed to do. IT is typically seen as rather unproblematic and often treated as the independent variable whereas the focus in the study rests on the dependent variable; "that which is affected, altered, or transformed by the tool" [22: 123]. Four of the 22 papers we have found can be said to belong to this category.

For example, in their 2005 HICSS paper, Komiak et al. [11] illustrate how trust and distrust can be placed in not only humans but also in technical artefacts such as a virtual sales agent. The virtual salesperson is a computerised recommendation agent that provides advice to customers as to what to buy given their particular needs. A group of 44 senior undergraduate business students were asked to compare their experiences of shopping with a virtual salesperson with that of a human salesperson at RadioShack (an electronics retailer). A coding scheme for trust and distrust formation processes were used to identify 508 different episodes of trust or distrust building, and these episodes were used to test whether the type of agent (human or non-human) had any effect on the formation of trust/distrust.

Since the test revealed that customers were able to perceive the benevolence and integrity of the virtual salesperson – although these are inherently human characteristics – the authors conclude that a virtual salespersons can be used as service channels to increase effectiveness in e-commerce marketing [10]. It appears that the virtual salesperson in use was the one actually implemented and used by RadioShack at their commercial web site and that the researchers had no influence over its design. The authors suggest that by increasing the "richness" of the virtual salesperson, a stronger connection between the virtual salesperson and the customer could – and should – have been achieved.

3.3. The proxy view or Technology as Perception

Taking a proxy conceptualisation of IT means that researchers let one or a few key elements represent some essential aspects of information technology. IT can for example be represented by users' perception of the technology in order to understand what encourages or discourages them from using the technology. From this point of view, users are understood to assess technology's usefulness based on an internal cost-benefit analysis [22]. We found one distrust paper that we think can be placed in the proxy view category – the 2010 paper by Xiao and Benbasat.

Xiao and Benbasat [26] point to the fact that the rapid growth of e-commerce has enabled the emergence of new forms of deceptive practices and online frauds. In their work, the authors focus on recommendation agents (RA) and how consumers' trust or distrust in these artefacts affects their perceived usefulness of the RAs and/or the customers' intentions to use the RAs. An RA is typically a software artefact that, based on customers' (product-related, in this case) preferences, provide recommendations for products that meet the customers' needs [26].

Using two types of RA (honest or deceptive), Xiao and Benbasat showed that trust and distrust had asymmetric effects on consumers' intention to use the RAs, and that the level of perceived risk is what determines which one has the strongest impact. Trust was found to be a stronger predictor of intention under low-risk situations, whereas if the risk was deemed high, distrust was more strongly related to customer intentions. The authors suggest that the level of risk perceived by the customers should dictate whether online vendors should opt for increasing trust or decreasing distrust. This, the authors argue, means that previous suggestions that distrust in general should have a stronger effect on behaviour should be taken more cautiously, since this may depend on the type of situation [26].

3.4. The ensemble view or Technology as embedded systems

The ensemble view of technology denotes an understanding of technology as being but one component in a web of socio-economic activities, where the dynamic interactions between people and technology are at main stage. Two dominant subcategories within this view include studies of how technology come to be and how it come to be used [22]. Two of our identified IS papers on distrust can be categorised as taking an ensemble view on technology, where one focuses primarily on how the technology come to be used, whereas the other also touches upon how it came to be. We shall describe the latter; a paper by Charki and Josserand.

Charki and Josserand [5] examined the intended and unintended outcomes of using online reverse auction (ORA) technology amongst French retailers and their suppliers. Relying on DeSanctis and Poole's [6] distinction between structural features and spirit of the technology, the authors interviewed not only buyers and suppliers, but also the "originators of the

spirit of the technology", i.e., the "people who were involved in the conception and deployment of the technology" [5: 180-181].

Charki and Josserand further argue that the spirit of the ORAs is the assumption that invited suppliers are competent and reliable, and able to fulfil their bids, and that this spirit has to be respected for ORAs to work. Having the buyer-supplier relationship as the unit of analysis, the authors show that neglecting the spirit of the technology, rather than its features, leads to interorganisational distrust and a failing buyer-supplier relationship. Analysing the technology itself, as well as its socio-economical role in the buyer-supplier relationship, the authors contribute to theory by showing how de-socialisation, through disrespect of the technology's spirit, may cause inter-organisational distrust [5].

3.5. The computational view or Technology as algorithm

The computational view of technology, finally, represents a view where the researchers primarily are interested in the technology's ability to process information and thereby model certain aspects of the world. Typical areas of application would be artificial intelligence, decision science or information retrieval [22]. In our analysis, none of the 22 papers could be said to belong to this category.

Table 3 below summarises this categorisation.

4. Discussion

As this literature review has revealed, IS scholars still tend to take the IT artefacts for granted instead of giving them the explicit consideration that Orlikowski and Iacono [22] called for more than a decade ago. Two thirds of the papers on distrust published in leading IS outlets adopt a nominal perspective on IT where the technology is absent, despite the fact that well over 70 per cent of the authors are – or were at the time of publication – affiliated with an IS department.

Without a clear focus on the development, implementation, and use, and/or thorough descriptions of the intrinsic characteristics of the information technology involved in each study, the papers' contributions end up in the areas of philosophy, psychology, sociology, economy and other non-IS fields. Nothing wrong with these areas per se, but there are others who are better equipped to contribute in those areas, whereas no-one is more suited to develop the IS field but IS scholars. Unless IS researchers theorise about the IT artefact – who will?

4.1. Theorising about IT

When McKnight and Chervany [18] examine distrust in an e-commerce setting, they speak of "the Internet", "the web" and "e-commerce" in broad and general terms that provide no insights into what specific technology might be involved or what explicit characteristics of this technology that affect trust and distrust. Similarly in Dimoka's [7] study of the eBay auction marketplace, the specifics of the technology involved are not presented or commented upon. These authors argue eloquently that trust and distrust are separate constructs, and they show convincing evidence to support their claims, but they do not theorise about the impacts their findings have on information technology or information systems or vice versa. This is a pity, we argue, since their work now contributes to our understanding of (trust and) distrust but not to our appreciation of information systems.

Seeing IT primarily as a productivity tool, Komiak et al. [11] discuss implications and suggest that a stronger connection between the virtual salesperson and the customer should be strived for, but their text does not disclose any details concerning the agent technology or the design philosophy underpinning the recommendation system. It seems a sif the technology is taken for granted. Instead of treating IT as a stable, whole piece, it would have been more useful had the specifics of this particular tool been discussed in relation to the specific characteristics of the setting, since not all service provider systems act in the same way or are experienced the same by all users. IT as a productivity tool, an information processing tool, or a labour substitution tool could have been theorised in a way that allowed the findings to more readily transfer to other contexts.

Allowing risk perception to represent users' intention to use IT in a proxy view, Xiao and Benbasat [26] showed that online vendors should base their decisions to go for increasing trust or decreasing distrust on the perceived level of risk amongst the customers. The study was enabled by setting up two versions of recommendation agents (RA), but the design of the RAs or the technology enabling them were not described, nor were there any attempts to

Table 3. Categorisation of distrust papers

	Conceptual view				
	Nominal	Tool	Proxy	Ensemble	Computational
No. of papers	15	4	1	2	0

further conceptualise the technology. More efforts could have been targeted towards increasing the theoretical understanding of how and when IT can act as a proxy for perceptions, diffusion or capital.

We find the difference in the level of theorising to be quite obvious when Charki and Josserand's paper is examined [5]. They explicitly subscribe to an ensemble view of technology, i.e., an understanding of technology as being but one component in a web of socio-economic activities. Charki and Josserand theorise using adaptive structuration theory and engage in a discussion about the embedded nature of IT and the ambivalent perception of the technology that was evident in their study. Not only do they provide practical advice on how to reduce the negative effects of online reverse auctions, they also make a theoretical contribution by presenting an integrative model of the effects of ORAs. It is our belief that this kind of contribution will strengthen our discipline.

4.2. Theorising about distrust

Examining the literature on distrust amongst IS scholars, three central references reoccur: Luhmann (1979) [17], Sitkin and Ross (1993) [23], and Lewicki et al. (1998) [14]. Nine of the papers examined in this work refer to all three texts, whereas five papers refer to none of them. Lewicki et al. is the most commonly cited paper with 17 references. One might expect that a common ground such as this would result in a fairly agreed-upon understanding of trust and distrust, but this has not been the case. It appears that different interpretations of the texts are possible. For example, in Lee et al.'s reading of Luhmann, trust and distrust "are separate, even independent constructs" [13: 1175], whereas McKnight et al. suggest that Luhmann argues that "trust and distrust are one construct" [21: 2], although they act separately. In Dimokas's interpretation of Luhmann, trust and distrust are "distinct, albeit related constructs" [7: 378]. Dimoka further argues that there are growing evidence to challenge the view of trust and distrust as opposite ends on a continuum [7], but the two are typically still expressed in reciprocal terms, and the measures used to capture distrust are typically trust measures worded negatively [2]. Having different antecedents and effects is perhaps a matter of degree rather than clear cut, as suggested McKnight and Chouhury [19], and more work is obviously needed to clarify these issues.

Another area where consensus is lacking is what effect trust and distrust may cause. Lee et al. [13] conclude that trust has a more pronounced impact on online business than has distrust. In a similar vein, Benamati et al. report that in the presence of both, trust overwhelms distrust in importance in predicting user intentions [2]. However, some commentators suggest that the relative dominance of trust and distrust may differ across contexts, possibly dependent on the level of perceived risk [21, 26].

A third area of dispute is the emotional/rational aspects. McKnight and Chervany [18] – and later also Dimoka [7] – find that trust is controlled and calculated as it is more of a cognitive judgement, whereas distrust is more emotional and thus more "fiery and frenzied". Dimoka supports this interpretation by showing that different areas of the brain are activated depending on whether there is trust or distrust. In contrast to these findings, and without referring to them, Lee et al. [13] propose the opposite, i.e., that distrust is cognitive whereas trust is more affect-emphasised. Again, a lack of agreement can be seen which calls not only for more research but for more discussion and dialogue, we argue.

Quite a few commentators actually refer to a "debate" in the literature regarding the relationship between trust and distrust (e.g., [7, 16, 26]), and whether they are two sides of the same coin (the "one-construct view") or indeed individual entities (the "two-construct view"). Having examined the leading outlets and analysed the papers on distrust, we conclude that no such debate can be found amongst IS researchers. Those who are interested in distrust and have chosen to study this construct specifically, do so because they have come to believe that distrust is not merely be the absence of trust, but an independent entity. These scholars have thus adopted what is known as the two-construct view, a perspective where "trust and distrust can coexist in an inconsistent state" [10: 730]. Those who appear to subscribe to a one-construct view, in contrast, seem to do so out of tradition rather than out of conviction. The one-construct view, i.e., the understanding that distrust is the absence of trust, is thus the "default" view that most people (tacitly) assume. Whereas proponents of the two-construct view argue in favour of their position, those with a one-construct view instead seem to take it for granted, and with the exception of [12], no-one explicitly argues in favour of a one-construct view.

This review has shown that there is no clear and common understanding of how trust and distrust relate to one another. On the contrary, IS scholars seem to make different interpretations and come to different conclusions despite departing from the same theoretical core. It seems like the discipline would benefit from a more lively debate where different interpretations and assumptions could be openly questioned and tested. Hopefully, there will be more room for discussions on how to understand distrust in future IS outlets.

5. Conclusions

What can be concluded from this literature review is that many IS researchers studying distrust have adopted a nominal view on technology in which information technology and information systems play a marginalised role. Taking IT "for granted", i.e., neglecting to make explicit the particulars of the technology, seriously hampers our ability to understand the consequences and impacts IT has on individuals, organisations and society [22], and IS scholars studying distrust should thus engage in a more thorough theorising about the way IT artefacts affect and are affected by distrust.

A second conclusion is that while we have made some progress when it comes to understanding distrust in information systems research, there is still work to do before a coherent picture can be assembled. Despite the fact that most IS scholars studying distrust seem to have adopted the two-construct view of trust/distrust and although most of them are departing from what appears to be a common epistemological stand, we are far from having a shared understanding of what this view entails. There is currently too little accumulation of knowledge and the discourse seems to be too fragmented. More forums where distrust-interested IS scholars can meet to debate, discuss and share ideas might be a way forward, paired with a more explicit focus on the IT artefact.

6. References

[1] Ba, S. and Pavlou, P., "Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behaviour", MIS Quarterly, 26(3), 2002, 243-268.

[2] Benamati, J., Serva, M. A. and Fuller, M. A., "Are Trust and Distrust Distinct Constructs? An Empirical Study of the Effects of Trust and Distrust among Online Banking Users", In Proceedings of HICSS 39, Hawaii, January 4-7 2006.

[3] Benbasat, I., Gefen, D. and Pavlou, P.A., "Special issue: Trust in online environments", Journal of Management Information Systems, 24(4), 2008, 5-11.

[4] Benbasat, I., Gefen, D. and Pavlou, P.A., "Introduction to special issue on novel perspectives on trust in information systems", MIS Quarterly, 34(2), 2010, 367-371.

[5] Charki, M. H. and Josserand, E., "Online Reverse Auctions and the Dynamics of Trust", Journal of Management Information Systems, 24(4), 2008, 175-197.

[6] DeSanctis, G. and Poole, M. S., "Capturing the complexity in advanced technology use: Adaptive structuration theory", Organization Science, 5(2), 1994, 121-147.

[7] Dimoka, A., "What Does the Brain tell us about Trust and Distrust? Evidence from a Functional Neuroimaging Study", MIS Quarterly, 34(2), 2010, 373-396.

[8] Gefen, D., Karahanna, E. and Straub, D.W., "Trust and TAM in online shopping: An integrated model", MIS Quarterly, 27(1), 2003, 51-90.

[9] Hsiao, R.-L., "Technology fears: Distrust and cultural persistence in electronic marketplace adoption", Journal of Strategic Information Systems, 12(3), 2003, 169-199

[10] Komiak, S. Y. X., and Benbasat, I., "A Two-Process View of Trust and Distrust Building in Recommendation Agents: A Process-Tracing Study", Journal of the AIS, 9(12), 2008, 727-747.

[11] Komiak, X. S., Wang, W and Benbasat, I., "Comparing Customer Trust in Virtual Salespersons with Customer Trust in Human Salespersons", in Proceedings of HICSS 38, Hawaii, January 3-6 2005.

[12] Kuan, H.-H., Bock, G.-W. and Lee, J., "A Cognitive Dissonance Perspective of Customers' Online Trust in Multi-Channel Retailers", in Proceedings of ECIS 2007, 13-23.

[13] Lee, J., Lee, J.-N. and Tan, B. C. Y., "Emotional Trust and Cognitive Distrust: From A Cognitive-Affective Personality System Theory Perspective", in Proceedings of PACIS 2010, 1171-1183.

[14] Lewicki, R. J., McAllister, D. J. and Bies, R. J., "Trust and Distrust: New Relationships and Realities", The Academy of Management Review, 23(3), 1998, 438-458

[15] Lim, K.H., Sia, C.L., Lee, M.K.O. and Benbasat, I.: Do I trust you online, and if so, will I buy?, Journal of Management Information Systems, 23(2), 2006, 233-266

[16] Lowry, P.B., Giboney, J., Schuetzler, R., Richardson, J., Gregory, T., Romney, J. and Anderson, B., "The Value of Distrust in Computer-Based Decision-Making Groups", in Proceedings of HICSS 43, Hawaii, January 5-8 2010.

[17] Luhmann, N., Trust and Power, Wiley: Chichester, 1979.

[18] McKnight, D. H. and Chervany, N., "While Trust is Cool and Collected, Distrust is Fiery and Frenzied: A Model of Distrust Concepts", in Proceedings of AMCIS 2001, 883-888.

[19] McKnight, D. H. and Choudhury, V., "Distrust and trust in B2C e-commerce: Do they differ?" Proceedings of ICEC '06, Fredericton, Canada, August 14-16 2006, pp. 482-491.

[20] McKnight, D. H., Choudhury, V. and Kacmar, C., "Developing and validating trust measures for e-commerce: An integrative typology", Information Systems Research, 13(3), 2002, 334-359

[21] McKnight, D. H., Kacmar, C. J. and Choudhury, V. (2003), "Whoops… Did I use the wrong concept to predict e-

commerce trust? Modeling the risk-related effects of trust versus distrust concepts", in Proceedings of HICSS 36, Hawaii, January 6-9 2003.

[22] Orlikowski, W.J. and Iacono, C.S., "Research Commentary: Desperately Seeking the 'IT' in IT Research – A Call to Theorizing the IT Artifact", Information Systems Research, 12(2), 2001, 121-134.

[23] Sitkin, S.B. and Roth, N.L., "Explaining the Limited Effectiveness of Legalistic 'Remedies' for Trust/ Distrust", Organization Science, 4(3), 1993, 367-392.

[24] Webster, J. and Watson, R.T., "Analyzing the Past to Prepare for the Future: Writing a literature Review", MIS Quarterly, 26(2), 2002, xiii-xxiii.

[25] van der Heijden, H., Verhagen, T. and Creemers, M., "Understanding online purchase intentions: contributions from technology and trust perspectives", European Journal of Information Systems, 12(1), 2003, 41-48.

[26] Xiao, B. and Benbasat, I., "The Asymmetric Effects of Trust and Distrust: An Empirical Investigation in a Deception Detection Context", in Proceedings of SIGHCI 2010, Saint Louis, MO., December 12 2010.

Appendix A: The 22 IS-papers on distrust used in this analysis

Benamati, J., Serva, M. A. and Fuller, M. A. (2006), "Are Trust and Distrust Distinct Constructs? An Empirical Study of the Effects of Trust and Distrust among Online Banking Users.", In Proceedings of HICSS 39, Hawaii, 4-7 Jan. 2006.
Brown, H. G., Scott Poole, M. and Rodgers, T. L. (2004), "Interpersonal Traits, Complementarity, and Trust in Virtual Collaboration", Journal of Management Information Systems, Vol. 20, Issue 4, pp. 115-137.
Bullington, J., Case, T. and Han, H.-J. (2007), "Support for a two-factor model of trust in e-commerce", Proceedings of the 2007 Southern Association for Information Systems Conference, pp. 166-171.
Charki, M. H. and Josserand, E. (2008), "Online Reverse Auctions and the Dynamics of Trust", Journal of Management Information Systems, Vol. 24, Issue 4, pp. 175-197.
Dimoka, A. (2010) "What does the brain tell us about trust and distrust? evidence from a functional neuroimaging study", MIS Quarterly, Vol. 34, Issue 2, pp. 373-A7, 31p.
He, F. and Mykytyn, P. (2007), "Perceived distrust in web-based distance education", Proceedings of MWAIS 2007, Springfield, Il., May 18-19 2007.
Hsiao, R.-L. (2003), "Technology fears: distrust and cultural persistence in electronic marketplace adoption", Journal of Strategic Information Systems, Vol. 12, Issue 3, pp. 169-199.
Kethers, S., Gans, G., Schmitz, D. and Sier, D. (2005), "Modelling Trust Relationships in a Healthcare Network: Experiences with the TCD Framework", Proceedings of ECIS 2005.
Komiak, S. Y. X. and Benbasat, I. (2004), "A Process Tracing Study on Trust Formation in Recommendation Agents", Proceedings of SIGHCI, Washington, D.C., December 10-11, 2004, pp. 85-89.
Komiak, S. Y. X. and Benbasat, I. (2008), "A Two-Process View of Trust and Distrust Building in Recommendation Agents: A Process-Tracing Study", Journal of the Association for Information Systems, Vol. 9, Issue 12, pp. 727-747
Komiak, X. S., Wang, W and Benbasat, I. (2005), "Comparing Customer Trust in Virtual Salespersons with Customer Trust in Human Salespersons", In Proceedings of HICSS 38, Big Island, Hawaii.
Kuan, H.-H., Bock, G.-W. and Lee, J. (2007), "A Cognitive Dissonance Perspective of Customers' Online Trust in Multi-Channel Retailers", Proceedings of ECIS 2007, pp. 13-23.
Lee, J., Lee, J.-N. and Tan, B. C. Y. (2010), "Emotional Trust and Cognitive Distrust: From A Cognitive-Affective Personality System Theory Perspective", Proceedings of PACIS 2010, pp. 1171-1183.
Lee, J.-N. and Huynh, M. (2005), "An Integrative Model of Trust on IT Outsourcing: From the Service Receiver's Perspective", Proceedings of PACIS 2005, pp. 767-779.
Lowry, P.B., Giboney, J., Schuetzler, R., Richardson, J., Gregory, T., Romney, J. and Anderson, B. (2010), "The Value of Distrust in Computer-Based Decision-Making Groups", Proceedings of HICSS 2010, Honolulu, HI., January 5-8 2010.
McKnight, D. H. and Chervany, N. (2001), "While Trust is Cool and Collected, Distrust is Fiery and Frenzied: A Model of Distrust Concepts", Proceedings of AMCIS 2001, pp. 883-888.
McKnight, D. H. and Choudhury, V. (2006), "Distrust and trust in B2C e-commerce: Do they differ?" Proceedings of ICEC '06, Fredericton, Canada, August 14-16 2006, pp. 482-491.
McKnight, D. H., Kacmar, C. J. and Choudhury, V. (2003), "Whoops… Did I use the wrong concept to predict e-commerce trust? Modeling the risk-related effects of trust versus distrust concepts", In Proceedings of HICSS 36, Hawaii, 6-9 Jan. 2003.
McKnight, D. H., Kacmar, C. J. and Choudhury, V. (2004), "Dispositional Trust and Distrust Distinctions in Predicting High- and Low-Risk Internet Expert Advice Site Perceptions", e-Service Journal, Vol. 3, No. 2 (Winter 2004), pp. 35-58.
Moody, G.D., Galletta, D. and Lowry, P.B. (2010), "Unifying conflict models of trust and distrust for enhanced understanding and predictive power in organizational relationship: Proposing the unified trust-distrust model", Sprouts: Working papers on information systems, 10(68).
Phillips, B. and McKnight, D.H. (2006), "A Model of User Distrust of Information Systems", Proceedings of MWAIS 2006, Grand Rapids, MI., May 5-6 2006.
Xiao, B. and Benbasat, I. (2010), "The Asymmetric Effects of Trust and Distrust: An Empirical Investigation in a Deception Detection Context", Proceedings of SIGHCI 2010, Saint Louis, MO., December 12 2010

.