PAMELA BRIGGS, BRAD SIMPSON AND ANTONELLA DE ANGELI

PERSONALISATION AND TRUST:

A RECIPROCAL RELATIONSHIP?

1. INTRODUCTION

Trust and personalisation are related constructs. Trust is generally accepted as a pre-requisite for good personalisation practice. Customers are not likely to reveal confidential information about themselves to an untrustworthy party, and they may be suspicious of data harvesting practices if they feel the information may be misused in some way.

But the converse relationship might also hold: good personalisation practice may be a pre-requisite for trust building online. At present, relatively few studies of trust suggest an important role for personalisation in the formation of trust, but we argue below that personalisation may play a larger role than that suggested by the current trust literature. Following a critical review of online trust studies, we suggest that personalisation is important for the development of trust in long-term relationships between consumer and online vendor, but argue that its role in short-term interactions is unclear. We then present a study that explores the extent to which people may be influenced by the promise of a personalised transaction, in order to clarify the influence of personalised practices on initial trust judgments.

Most researchers agree that trust is a vital construct for e-commerce. It has been argued that in order to develop a successful e-commerce business:

*The factors that produce a sense of trustworthiness need to be identified, in their entirety. Their interactions need to be understood, and their relative importance determined.*¹

Unfortunately researchers also agree that trust is an extremely difficult construct to work with, since it takes its meaning, chameleon-like from the context in which it operates. Thus trust is defined differently within the different fields of philosophy, sociology, psychology, management, political science and – most recently – human-computer interaction. Furthermore, different manifestations of trust have been observed within any one field – each with antecedents and consequences particular

¹ <http://www.cheskin.com/p/ar.asp?mlid=7&arid=40&art=0&isu=1>

to a specific context. Within the psychology literature, for example, a distinction is made between the kinds of trust that support transient interactions and those that support longer-term relationships (e.g. Meyerson et al, 1996) but even within the latter, it is argued that people can experience both cognitive trust, based on rational decision-making and emotional trust, based on strong feelings towards another individual (e.g. McAllister, 1995). Such various manifestations of trust have led researchers such as Corritore et al. (2003) to conclude that there is not one unitary trust concept, but:

‘a multi-dimensional family of trust concepts, each with a unique focus.’ (pg. 738).

The picture is further complicated, within an e-commerce context, by the fact that customers must be prepared to place their trust not only in an online vendor but also in the technology that underpins an interaction. Understanding the context for trust, therefore involves understanding issues of encryption and data security as well as understanding the development of a psychological bond. Bollier (1996), for example argued that:

It may be conceptually useful to distinguish between issues of “hard trust,” which involve authenticity, encryption, and security in transactions, and issues of “soft trust,” which involve human psychology, brand loyalty, and user-friendliness.....it is important to see that the problems of engendering trust are not simply technical in nature.....Trust is also a matter of making psychological, sociological, and institutional adjustments.

Bollier (1996, p.21)

Researchers do agree, however, that trust is only really understood in terms of some associated, underlying risk (Brien, 1988; Mayer et al., 1995). The act of trust is thus the act of making oneself vulnerable to one or more threats but the nature of trust critically depends upon the nature of those threats. Grabner-Krauter et al. (2003) have explored the risks inherent in e-commerce transactions and point out that online consumers are faced with both:

- *System-dependent uncertainties* including technological errors and security gaps located at the desktop or the marketplace server; and
- *Transaction-specific uncertainties* which relate more closely to the behaviours of the Internet merchant – the quality of the products on sale and the professionalism of the transaction.

Both types of uncertainty hold significant threats for the consumer. Thus in an e-commerce context, trust in an online vendor invokes *inter alia* the threat of financial loss, of privacy violation, identity theft and a threat to personal reputation. Other threats include exposure to spam and various telemarketing initiatives² and while

² IBM Multi-National Consumer Privacy Survey. Available at: http://www-1.ibm.com/services/files/privacy_survey_oct991.pdf

these may seem less serious threats, the fact that they occur so commonly has led some authors to argue that these nuisance threats are likely to have a devastating effect on the fabric of the Internet (Weinstein, 2003).

In other Internet contexts – for example those involving personal discourse or advice-seeking online, then the threats may be even more diverse, yet very few researchers have explicitly looked at the way in which these different threats affect trust development, although elsewhere in this book there are detailed discussions of the threats inherent in revealing personal information.

Despite a general lack of information about the specific vulnerabilities underpinning an act of trust, a number of researchers have tried to model trust in online exchange by focussing on those attributes of an online organisation or web site which facilitate trust. Some of these models have a purely theoretical basis (e.g. Corritore et al., 2003), whereas others are grounded in empirical research (e.g. Battacherjee, 2002; Briggs et al., 2002; Egger, 2001; Lee and Turban (2001); McKnight and Chervany (2001). See also Grabner-Krauter et al., 2003 for a recent overview). At first the picture of trust emerging from these studies is confusing and contradictory. Some researchers argue that trust (or a related construct, credibility) is primarily influenced by the extent to which a site is attractively and professionally designed (e.g. Fogg et al., 2002) while others argue that trust is a function of the competence, integrity predictability and/or benevolence of the site (e.g. Battacherjee, 2002). Some, but not many authors highlight the importance of personalisation in the formation of trust judgments.

The confusion clears, somewhat, however, when a staged or developmental model of trust is adopted, since it is likely that different factors are influential at different times. An example may illustrate this point. Imagine a potential customer searching the Internet for a bargain flight. He or she may well be put off a site which has poor usability or unprofessional design, while being drawn to a site which exemplifies good design and professional values. In other words their first impression will be highly influential in the early stages of the process of buying online. Once they have actually found a site which offers a good price, however, they are then likely to engage in a more detailed analysis of the company itself before committing themselves to a transaction. These two stages have been highlighted by a number of authors. Thus, for example, Briggs et al., 2002 borrowed from the persuasion literature in social psychology to identify (i) a *heuristic stage* where an initial trust impression is formed, and (ii) an *analytic stage* where a decision to engage properly with the site is made. In contrast, McKnight and Chervany (2001) identified a preliminary stage of (i) *intention to trust* from a later stage of (ii) *trusting activity*.

The process does not stop there however, and a more realistic assessment of the development of trust should include a third stage in which a (iii) *trusting relationship* develops between the customer and the vendor. This then generates a three-stage model of the process of trust development – as originally proposed in the Cheskin/Sapient report (1999). They described the stage of building trust and

accompanying activities such as browsing, searching and comparing; the stage of confirming trust and associated acts of registering with a site and checking transactions, and finally the stage of maintaining trust, which they see in terms of a more informal habit-like relationship with the vendor.

This third stage is an important one for e-commerce, since any company worth their salt would wish to secure loyal custom. Revisiting the example above, our customer may wish to purchase a second, third or fourth flight. If their experience with a particular online vendor has been positive, in other words if their details were handled securely and competently and they received their tickets and/or booking notifications promptly and were able to communicate appropriately with the company, then they are likely to go back to that same firm. In this way a trusting relationship can develop over time.

The surprising thing about the literature on trust in e-commerce is that so little of it addresses this third relationship component. Indeed it is a great weakness of the trust literature that most of the empirical studies reported explore only the first stage of initial trust or intention to trust. Only two of the studies reviewed by Grabner-Krauter et al (2003) investigated real transactions and these were limited to short-term interactions. Participants in almost all of the other studies were not required or even not allowed to perform a shopping transaction. Yet when the trust literature is interpreted in terms of the three stages outlined above (the first impressions involved in building trust, further involvement with a particular site leading the first transactions and subsequent relationship development) it starts to make a good deal of sense.

Stage 1: First Impressions and initial trust building activities

To begin with, let us explore those investigations that ask participants to briefly visit a site or sites and then tender some evaluation of trustworthiness. Such participants have very low involvement in this process and would expect (following the logic of Chaiken 1980) that their trust judgments will be based on first impressions and will be highly influenced by the attractiveness and ease of use of the site. A number of studies support this.

Consider, for example, an investigation of credibility online from the Stanford Persuasion Laboratory (Fogg et al, 2002). Note that credibility is a concept closely related to trust, and the Stanford Lab has conducted some of the largest studies of those factors which influence consumer judgments of credibility. In their 2002 study, consumers were asked to compare two sites drawn from one of ten different domains and to make a judgment about which of the sites was more credible. They were asked to supplement this judgment with comments and notably 46.1% of those comments reflected design qualities - as indicated by the following sample of comments drawn from four participants:

"More pleasing graphics, higher-quality look and feel"

"Actually, despite the subject of the Web site, it looks very credible. This may be due to the subdued color scheme and the font used on the left-hand side of the page."

"Not very professional looking. Don't like the cheesy graphics. Looks childish and like it was put together in 5 minutes."

Such comments are remarkably similar to those elicited in a recent qualitative investigation of trust in sites offering advice and information to potential house-buyers (Briggs et al, 2002, Study 1). In that investigation people were asked to search the Internet for relevant information and then discuss which sites they would return to and which they would reject. A positive first impression was linked to good design and an absence of amateur mistakes as well as to indications of expertise, while a negative first impression was more explicitly tied to poor design.

Other studies have focussed on the impact of specific design features. Thus, for example, the presence or absence of trust markers such as VeriSign or other seals of approval can have an immediate effect in promoting trust (as in the Cheskin and Sapient study), while photographs have also been found to influence trust judgments – although the extent to which they have a positive or a negative effect is related to a number of other aspects of site design (e.g. Riegelsberger et al, 2003; Steinbruck et al 2002).

Stage 2: Further involvement with the site and the first transactions

Those investigations that involved real customers, or that required some protracted engagement with a site or those that have asked customers about the general principles underpinning e-commerce transactions have generated a family of trust models with reasonable agreement. In general the models suggest that trust which supports online engagement is influenced by perceived integrity and expertise, predictability or familiarity of content and reputation (e.g. Battacherjee, 2002; Briggs et al., 2002, study 2; Fogg et al., 2001; McKnight and Chervany, 2001). A number of studies also highlighted the importance of interface factors (ease of use and functionality) which help to reduce the transaction costs of an exchange (e.g. Egger, 2000, 2001; Lee, Kim and Moon 2001).

For example, Battacherjee (2002) developed a psychometric scale for trust in online transactions which was tested in two field trials and modified accordingly. The resultant seven item scale tapped into three trust elements:

Ability – both in terms of expertise and information access.

- Example: 'Amazon has the skills and expertise to perform transactions in an expected manner'.

Integrity - encompassing issues of fairness of conduct in transactions, customer service and data usage.

- Example: 'Amazon is fair in its use of private user data collected during a transaction'.

Benevolence – in terms of keeping the customers interests in mind and in terms of showing empathy and responsiveness to customer concerns.

- Example: 'Amazon is open and receptive to customers needs'.

The last two constructs also underpin Lee and Turban's (2001) model of trust, (accompanied by constructs related to general trust in Internet shopping and in an individual's propensity to trust) and there are remarkable similarities too with the trusting beliefs identified by McKnight and Chervany (2001), namely benevolence (defined by them as the belief that the other will act in one's own interest), integrity (the belief that the other makes good faith agreements, tells the truth and fulfils promises), competence (the belief that the other has the ability or power to do what needs to be done) and predictability (the belief that the other's actions will be consistent).

Stage 3: Subsequent relationship development

What happens after an initial transaction has been completed remains unclear since very few studies of trust in e-commerce have explored the longer-term *relationships* between consumer and vendor that may obtain. In other words most of the investigations recently reported explore the kinds of trust judgments that might underpin one-shot purchase decisions, hardly any look at changes in trust over time. This omission is particularly surprising when we consider that all of the early models of trust between individuals focussed explicitly on the build up of a relationship over time.

Yet it is clear that trust is a *consequence* as well as an expectation of action which means that initial trust judgements will be modified by experience. This common-sense interpretation of trust was evident in Rotter's original view of interpersonal trust, where trust in a generalised other could develop from successful and consistent exchanges with parents and siblings. The point was made more clearly by Gambetta (1988) who argued that the point where we shift from saying, "I don't trust X" to "I trust X", is a threshold on this continuum which will vary with individual tendencies (e.g. a predisposition to trust) and experience: "trust is not a resource that is depleted through use; on the contrary, the more there is the more there is likely to be" (Gambetta, 1988, p. 234). The catastrophic impact of negative experience on trust is also highlighted by Lee and Moray (1992, 1994).

Perhaps the clearest work on the offline development of trust comes from Lewicki and Bunker (1996) who explored the development of trust in work situations. There they found a clear developmental trend from an initial *deterrence-based* trust which was all about penalties imposed on violation of contracts, to a *knowledge-based* trust which was characterised by judgments of expertise and predictability of the interaction (see models above). Finally workers reached a *shared-identification-based* trust where workers were confident that they shared a common set of values.

Not surprisingly, those online studies taking a longer-term perspective on trust also emphasise the importance of shared values between customer and vendor. In these studies, trust in a longer-term e-commerce relationship is a function not only of competence and predictability, but is highly influenced by the extent to which e-vendors are good communicators and show sensitivity to the personal values and circumstances of the consumer. In this way good personalisation practices are shown to be important for the development of a trusting relationship.

For example, in a study which explored the extent to which Internet users would revisit an online store (i.e. exhibit customer loyalty), Lee, Kim and Moon (2000) found that trust was a function of three factors: (i) the comprehensiveness of the information given out to customers; (ii) the perception of shared values between the customer and the store and (iii) the quality of communication between the store and the customer.

Similarly, in Florian Egger's (2000, 2001) studies of online customers, good personalised communication between customer and vendor was shown to be vital to the development of trust. Egger developed MoTEC (A Model of Trust for Electronic Commerce) where Trust is initially determined by three factors: (a) the users knowledge of the domain and reputation of the vendor, (b) the impression made by the interface, and (c) the quality of the informational content as assessed by the consumer, but where a fourth factor – relationship management - becomes influential over time:

“Relationship management reflects the facilitating effect of timely, relevant and personalised vendor-buyer interactions on trust development (pre-purchase) and maintenance (post-purchase).

Egger (2001)

The importance of this fourth factor was highlighted in a subsequent study exploring trust judgments of users of an online casino (Shelat and Egger, 2002). In that study relationship management issues were found to be crucial – gamblers were only prepared to trust an online casino if they could communicate promptly and swiftly with the organisation and verify prompt payment of winnings.

The influential role of good personalised transactions was also highlighted in a large scale study of credibility conducted at the Stanford persuasion laboratory (Fogg et al, 2001). Over 1400 participants completed a questionnaire concerned with those factors they felt made web sites more or less credible. One of the scales in the questionnaire measured ‘tailoring’ of content and included the following four items:

- The site sends emails confirming the transactions you make
- The site selects news stories according to your preferences
- The site recognizes that you have been there before
- The site requires you to register or log in

Tailoring was found to increase credibility, although the effect was more profound for the older users. In other words, older respondents reported higher credibility evaluations for sites that used some type of tailoring.

Perhaps the clearest demonstration of a role for personalisation in online trust comes from a study in which people were asked about advice on the Internet (Briggs et al., 2002). This was an online questionnaire based study in which a total of 2,893 respondents said that they had actually sought advice online. These individuals were asked to give information about the site they had used in terms of issues related to trust as identified in an extensive review of trust literature. These include aspects of site usability and interactivity, peer commentary, personalisation, host reputation, perceived expertise, independence, familiarity and predictability of process. In a regression analysis a clear three-factor model of trust emerged with factors as follows:

1. *Source credibility* – the extent to which information and advice came from a knowledgeable source, was prepared by an expert, seemed impartial and was readily available. This factor was highly predictive of participants' decisions to follow the advice (see below) and ties in very strongly to models of information credibility in the literature [13].
2. *Personalisation* - did the respondent feel involved in the process? Was the site interactive? Was the information tailored to the participant? Were different courses of action suggested, and was a peer commentary available?
3. *Predictability* – Did the site meet the respondents' expectations. Had they used the site before and did they already know something about this domain? Did the site operate in a predictable way? Was it branded with a familiar name and/or logo?

Personalisation, then, can be seen as an important enabling factor for trust in online advice, and indeed in other studies of trust in e-commerce that have explored full engagement with web sites. Effective personalisation tools and a good communication strategy seem important pre-requisites for the maintenance of a loyal long-term customer-vendor relationship

However this leaves us with something of a conundrum, since trust has been identified as both a pre-requisite and a consequence of good personalisation practice. In other words, an individual is more likely to disclose personal information in an atmosphere of trust, but that same individual is more likely to trust an organisation which shows sensitivity to his or her personal circumstances. It begs the question of just what happens the first time people are asked to give up personal details to a relatively unknown e-commerce site.

In some of the studies reviewed above there is an implicit suggestion that a site which promises an interactive, personal service may be regarded as more trustworthy than one which is somehow less interactive. Thus, for example, several studies of e-commerce sites argue that in order to promote trust the online site must somehow give an richer impression of the kinds of off-line experiences users are familiar with. Some authors describe this as a process of *virtual re-embedding* (e.g.

riegelsberger et al.) arguing that a variety of surface cues may be used to engage users both emotionally and cognitively in the interaction. Photographs may help with this process, as we have already seen, but the promise of interactivity can also make a difference. A study by Basso et al. (2001), for example, found that the first impressions of an online store were affected by the presence of an Instant Messaging (IM) facility. In other words, those participants who could interact with a sales agent via IM found the store to be more trustworthy.

Thus the promise of a personalised relationship may well affect trust judgments made during early interactions with a site. In order to explore this issue further, we conducted a study in which we explicitly explored issues of trust and self-disclosure during a first transaction. Before describing this study in detail it is worth noting that this study was one of three investigations in a project concerned with identifying those online factors capable of influencing trust in online advice. The project utilised the principle of triangulation – i.e. it sought evidence from three different sources, in this case three different methodologies: a qualitative investigation, a large-scale questionnaire and finally an experimental manipulation of those factors emerging as important for trust. Details of the first two studies can be found in Briggs et al. (2002).

2. AN EMPIRICAL INVESTIGATION OF PERSONALISATION AND TRUST

2.1 *Method*

Four versions of a travel insurance website were created by UK-Premier.com Ltd. (see table 1, below), in which personalisation was manipulated by the inclusion of key questions which asked for personal details, which were then (i) incorporated or (ii) ignored in later screens. For both the personalised and non-personalised sites two false travel insurance companies were constructed. One was designed to reflect a relatively young start-up company, whereas the other was accompanied with text, font and graphics meant to suggest a more established organisation – with details about the companies history included. Both sites were professionally designed and were modelled on existing travel insurance companies. In addition, the personal data questionnaires built into the sites were modelled on those insurance companies who aim to provide a low-charge policy cover in exchange for enhanced disclosure of relevant information.

Participants were 107 students at the University of Northumbria, all of whom were intending to spend some time travelling and who therefore had an interest in travel insurance. Participants were told that the University of Northumbria had been commissioned by a travel insurance company to conduct research on their website. They were led to believe that the website was authentic, and were told that they should visit the site, filling in details of their travel insurance needs, where appropriate, and then fill in some questions about the site. They were also told that they could genuinely purchase the travel insurance on offer, if they felt it was

worthwhile. It is worth pointing out at this stage that the students were thus led to believe that they were interacting with a live corporate site where they could genuinely purchase travel insurance.

Participants were then given a unique identity code and were logged on to one of the four travel insurance websites. They worked through the various fields on the site, and were then directed to a follow-up questionnaire – based on the offline questionnaire described by Briggs et al. (2002).

Individuals were unaware that four different versions of the site existed. After completing the final questionnaire, participants were thanked and debriefed. They were assured that any data capable of personally identifying them would be automatically stripped from the log kept for each individual. Table 1 gives a breakdown of the design and procedure.

Table 1. Phases of the investigation.

	Personalised 'established' (P-E)	Personalised 'new' (P-N)	Impersonal 'established' (I-E)	Impersonal 'new' (I-N)
Types of site	Suggests that company is well established	Includes bland text about the company	Suggests that company is well established	Includes bland text about the company
	Site offers a personalised quote based on participants' circumstances	Site offers a personalised quote based on participants' circumstances	No personalisation	No personalisation
Consumer input phase	All four sites request information, both personal (e.g. questions about health problems), and less personal (e.g. questions about requirements for car insurance) . A few key questions are compulsory, including three 'key' questions concerning (i) use of a money belt (ii) a pre-planned itinerary and (iii) use of travellers' cheques, which then branch to different pages.			
Company response phase	Answers to three 'key' questions branch onto one of eight personalised responses.		Bland responses are provided which are impersonal with respect to 'key questions'	
Consumer decision phase	All participants are free to browse three suggested policies: 'highly recommended'; 'recommended' and 'alternative'. Participants exit the site by choosing one of three options: 'buy', 'reserve without commitment' and 'exit'.			

Site evaluation phase	All participants go on to answer a questionnaire about the site they've just visited. This is a slightly modified version of the internet questionnaire described by Briggs et al., 2002.

2.2 Results and Discussion

There were several dependent measures, as follows:

1. A measure of disclosure in terms of the number of voluntary information fields omitted. Measures were also taken of preparedness to respond 'yes' to risky behaviours, although naturally this last measure was somewhat dependent upon individual differences.
2. A measure of 'preparedness to take advice'. This was derived from the participants' willingness to consult the 'highly recommended' site above the others.
3. A measure of commitment to the product. This measure simply reflected participants' selection of one of the three final options: 'buy' 'reserve without commitment' or 'exit'.
4. A measure of participants' attitudes to the site in the form of a 32 item questionnaire, which included manipulation checks as well as questions about trust.

All personal identity data was automatically deleted, but participants' responses to all other fields were automatically logged, along with a record of their browsing behaviour prior to making their final selection of buy, reserve without commitment, or exit. Data from the follow-up questionnaires were also logged automatically.

The first point to note was there were no significant behavioural differences across sites in terms of self-disclosure, preparedness to take advice and commitment to the product. All of the measures suggested very high compliance. Thus, for information disclosure, only 2 people who viewed a personalised site and only 3 who viewed an impersonal site withheld any information at all. Participants were also very willing to reveal problems. Table 2 below gives the percentage of 'yes' responses to the three most sensitive questions asked of participants. It is not possible to draw any conclusions about the extent to which these revelations are a function of site manipulation or simply a function of the participant population allocated to a particular site – but it is interesting to note the number of individuals prepared to admit to problems.

It is certainly possible that these high disclosure reflect a general society trend towards an increasingly relaxed attitude to the disclosure of personal information. Recently, for example, a Harris Poll report of 1,010 U.S. adults (Taylor, 2003) noted a marked drop in the number of people who were unconcerned about privacy issues. Some 74% of people were willing to allow people to have access to, and to use, their personal information with the proviso that they should understand the reasons for its

use, see tangible benefits for sharing the information and believe that care is taken to prevent the misuse of the information. With these figures as a baseline, the disclosure behaviours observed in the present study seem less extreme.

Table 2. Percentage of ‘yes’ responses given to key personal questions.

Question	P-E	P-N	I-E	I-N
Has the person to be insured any physical or mental defect or infirmity?	7%	10%	0%	4%
Have you ever been refused holiday insurance?	15%	17%	7%	4%
Has any insurer ... ever terminated an insurance policy?	0%	0%	11%	0%

With regard to subsequent behaviours 85% of participants in the ‘personalised’, and 82.5% of those in the ‘impersonal’ condition viewed the ‘highly recommended’ options first. Once again it is difficult to know whether this degree of compliance is tied to the experimental nature of this study (where participants are completing the online form in a laboratory setting) or whether it reflects a wider compliance in the real world. In any case, while the degree of compliance observed here is interesting the data did not provide any useful evidence concerning differences between groups.

The follow-up questionnaire, however, generated some interesting differences in the subjective evaluation of the four sites. For 22 (of the original 32) questions, scores were given on a seven point lickert scale. Means for these questions are given in Table 3, along with any significant effects derived from 2x2 analyses of variance conducted on the data for each of the questions.

Table 3. Mean responses to twenty-two scale items on the follow up questionnaire.

Question (1=disagree totally 7=agree totally)	P-E	P-N	I-E	I-N	ANOVA
The advice appeared to be prepared by an expert	5.21	4.65	4.87	5.00	n.s.
The advice came from a knowledgeable source	5.29	4.83	4.82	4.82	n.s.
There were comments from other users on the site	2.29	2.48	2.86	2.65	n.s.
The site was owned by a known and respected company	4.00	3.50	3.91	3.71	n.s.
I had to wait a long time for the advice	1.83	2.17	2.41	2.53	n.s.
Different travel insurance options or courses of action were suggested	6.04	5.17	3.86	5.29	Pers ** E x P **
The site was hard to use	1.82	2.09	2.59	2.71	Pers *

I didn't feel involved in the way the site tried to find appropriate advice.	2.92	3.17	3.82	3.88	Pers *
The site was interactive	4.75	4.78	4.82	4.35	n.s.
The advice was tailored to me	4.65	4.09	4.09	4.41	n.s.
The reasoning was explained to me	3.68	3.57	4.18	3.0	Est **
The site offered the opportunity to contact a person	3.17	3.35	2.91	2.65	n.s.
The advice appeared to be impartial and independent	4.21	4.48	4.00	3.82	n.s.
I was offered good advice	4.71	4.70	4.45	4.29	n.s.
The way the site went through the process of giving advice was predictable	4.83	5.05	4.32	4.29	Pers *
The site wasn't really useful in helping me make the right decision	3.33	3.61	3.50	4.18	n.s.
I trusted the advice	4.21	3.83	3.82	3.24	n.s.
The company isn't very well established	4.37	4.78	4.45	5.06	Est **

Responses to the questionnaire indicated relatively positive feelings about the site. Thus for example, people tended to agree with statements such as 'the advice appeared to be prepared by an expert'; 'the advice came from a knowledgeable source'; 'I was offered good advice' and disagree with statements such as 'I had to wait a long time for the insurance advice' and 'the site was hard to use'. It was also the case that the most positive responses were given by participants in the 'established-personalised' site as one might predict.

With specific regard to the with the personalisation manipulation, participants in the 'personalised' conditions were significantly less likely to disagree with the statement 'I didn't feel involved in the way the site tried to find appropriate advice'. This makes sense given the nature of the manipulation – and shows that they took account of the fact that personal questions were asked of them. However they didn't feel that the resulting advice was tailored to them any more than individuals in the impersonal conditions, and so here we see that the promise of personalisation has a relatively small impact.

It may be an important impact, however, since those in the personalised condition did generally feel more positive about the site. They felt, for example, that they had been offered more choice, that the site was more predictable and that it was easier to use. These are important issues that we know feed into trust judgments, and yet there were no real differences between the sites. So what is it about the promise of personalisation that gives people a more positive impression? Regarding the option choices, it may simply be that phrasing the various options in terms that reflected participants' inputs somehow made them more salient. In effect this was a cheat – but it is an interesting cheat and one with significant effects on users' judgements of

the quality of the site. The idea that participants pay more attention to choices when they seem to incorporate information that they themselves have provided is one that is worth exploring in more detail.

Finally, it is worth mentioning that the model of trust which was generated from over 2,500 participants in our online study was supported by this offline sample of 107 participants and so this data can also be taken as part-validation of the Briggs et al. (2002) three-component model of trust incorporating *source credibility*, *predictability* and *personalisation*. Why do we consider these components (and the associated questionnaire) more appropriate than, say, Battacherjee's (2002) trust scale based on the concepts of ability, integrity and benevolence? In part because our interest has been explicitly on the judgements people make of a web-site rather than the beliefs they bring to an interaction. In addition we sought to demystify trust by breaking it down into judgments based on observable qualities. Benevolence defies this – indeed it is a construct as elusive as trust, which means that there is some danger of circularity.

We should also question whether the methodology described above is the most appropriate one with which to address questions of trust. As stated earlier, this investigation was designed to compliment two other studies – one a qualitative investigation and the other a large-scale questionnaire-based survey (reported in Briggs et al., 2002). All three studies addressed actual examples of trusting behaviour, rather than simply exploring trusting intentions, but the current study was the only one to follow a simulated e-commerce transaction. The question remains as to whether the simulation developed here was sufficiently convincing. Other studies have asked similar research questions but using scenario-based methods in which users try to imagine the extent to which they would disclose information in a particular setting. In a study by Olivero (2000) for example, participants were presented with a description of an online drug store and asked whether they would be prepared to disclose certain types of personal information. Such methods are useful, but have their own limitations with regard to the extent to which planned and actual behaviours converge. The simulations described here overcome such difficulties, but future studies should probably include post-hoc interviews which assess the extent to which users believe the sites to be real.

3. FUTURE DEVELOPMENTS

A staged model of the development of trust in e-commerce has been proposed, wherein personalisation practices are seen as important for the development of a longer-term relationship between the customer and the online vendor. It has also been suggested (on the basis of work by Basso et al. and our study above) that the promise of personalised communication might exert some limited influence on trust judgments made during the early stages of e-commerce interaction. There remains one other issue to discuss, relevant to question posed at the start of the chapter – i.e.

the question of whether or not a personalised e-commerce service can generate trust. This remaining issue concerns reputation.

A number of studies have acknowledged that reputation can play a role early on in the process of trust development. In other words, a recommendation from a friend, or a well-known reputation or brand can influence a new customer and can lead to that all-important first purchase. Briggs et al. (2002) found that peer commentary on a site was linked to trust in online advice. Yet very few studies of trust in e-commerce have explored trust development in the kinds of e-commerce which are supported by online reputation systems.

Reputation systems are very effectively utilised in online marketplaces and electronic auction sites like eBay. These provide a form of e-commerce in which transactions are made, not between a customer and a business, but between individual members of the collective (both buyers and sellers). eBay is the Internet's most successful online auction house, and is ranked as one of the most successful online businesses to date, but in eBay neither the vendor nor the customer know each other, and customers are given only brief descriptions of items submitted by unknown parties. Boyd (2002) attributes the remarkable success of eBay to the build up of a kind of community trust based in part upon the fact that individuals are not anonymous, but have unique identities and can therefore be given feedback ratings from other users. The resulting reputation system works effectively and new users visiting the site are able to take the comparatively 'low risk' first step of trusting a vendor with a known reputation.

It makes sense to think about the ways in which reputation can be tapped more explicitly in e-commerce environments, and yet with the exception of the Boyd study, we know of no explicit investigations of consumer trust development as a function of reputation or recommender systems (note however there is a large literature on trust in agent exchanges). There is a huge research agenda here. For example, are the systems themselves trusted? Some experts have shown that they are relatively easily manipulated and not entirely safe (e.g. Xiong and Liu, 2003; Zacharia et al., 2000) but the attitudes of users is less clear. There are also huge questions about the role of social identity in reputation and recommender systems. For example, it is likely that the algorithms which support collaborative filtering could draw like-minded people together to build trust rapidly in the early stages of an e-commerce relationship. Certainly we know that such methods can help to build sales, but their explicit role in trust development is uncertain.

The literature on trust in e-commerce is young and probably raises more questions than answers at the moment. It is also a literature based on relatively thin empirical evidence (since, as we've argued, so few studies have explored the development of real customer relationships). It is likely that we will learn much more about the relationship between trust and personalisation over the next few years and there are certainly a number of interesting issues to explore.

What about recommendations regarding future e-commerce systems? As far as we can judge – from our own studies and the state of the research literature at the moment – a trusted website clearly requires the following: Firstly, some assurance of competence on the part of the company and an indication that those providing information have the requisite expertise and professional standing. This can be signalled both by design and content. Secondly, predictability. It should be consistent with other sites in the same domain or should borrow from off-line practices – to the extent that the user feels he or she is in familiar territory and feels that the steps in a transaction are relatively predictable. Essentially there should be no major surprises. Thirdly, a non-threatening invitation to the user to offer-up personal information. This should be accompanied by an explanation of why the information is required and of how it is to be used. It should not necessarily take the form of a privacy policy – since not all users will understand the importance of this (although such a policy should be available). These assurances should rather be incorporated naturally into the transaction, and crucially – they must be worthwhile for the user – i.e. they must have some utility. This last statement might seem surprising in the light of our findings with regard to ‘cheats’ – but trust is not solely about one transaction, the key issue for trust in the longer-term is that organisations deliver on their promises.

4. ACKNOWLEDGEMENTS

The original research described in this chapter was funded by the former NCR KnowledgeLab, London.

5. REFERENCES

- Basso, A., Goldberg, D., Greenspan, S. and Weimer, D. (2001). First impressions: emotional and cognitive factors underlying judgments of trust in e-commerce. *Proceedings of the 3rd ACM conference on Electronic Commerce*. New York: ACM Press.
- Bhattacharjee, A. (2002). Individual Trust in Online Firms: Scale Development and Initial Test. *Journal of management Information Systems*, 19 (1), 211-241.
- Boyd, J. (2002). In community we trust: Online security communication at eBay. *Journal of Computer-Mediated Communication*, 7(3). Available at: <http://www.ascusc.org/jcmc/vol7/issue3/boyd.html>
- Brien, A (1998) Professional ethics and the culture of trust *Journal of Business Ethics*, 17, 391-409
- Briggs, P., Burford, B., De Angeli, A. & Lynch, P. (2002). Trust in Online Advice, *Social Science Computer Review*, 20, 3, 321-332.

Chaiken, S. (1980) Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality And Social Psychology*, 39, 752-766

Cheskin Research and Studio Archetype/Sapient (1999). Ecommerce trust study. Retrieved (July 16, 2003) from:
<http://www.cheskin.com/p/ar.asp?mlid=7&arid=40&art=0&isu=1>

Bollier, D. (1996). The future of e-commerce. The Brookings Institution

Corritore, C.L., Kracher, B. and Wiedenbeck, S. (2003). On-line trust: concepts, evolving themes, a model. *International Journal of Human-Computer Studies*, 58, 737-758.

Egger, F.N. (2000). "Trust Me, I'm an Online Vendor": Towards a Model of Trust for E-Commerce System Design. in: G. Szwillus & T. Turner (Eds.): CHI2000 *Extended Abstracts: Conference on Human Factors in Computing Systems*, The Hague (NL), April 1-6, 2000: 101-102, ACM Press.

Egger, F.N. (2001). Affective Design of E-Commerce User Interfaces: How to Maximise Perceived Trustworthiness. In: Helander, M., Khalid, H.M. & Tham (Eds.), *Proceedings of CAHD2001: Conference on Affective Human Factors Design*, Singapore, June 27-29, 2001: 317-324.

Fogg, B. J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., Paul, J., Rangnekar, A., Shon, J., Swani, P. & Treinen, M. (2001). What Makes Web Sites Credible? A Report on a Large Quantitative Study, *Proceedings of CHI 2001, March 31- April 4, Seattle* New York: ACM Press.

Fogg, B. J., Kameda, T., Boyd, J., Marchall, J., Sethi, R., Sockol, M. and Trowbridge, T. (2002). *Stanford-Makovsky Web Credibility Study 2002: Investigating what makes Web sites credible today*, A Research Report by the Stanford Persuasive Technology Lab & Makovsky & Company, Stanford University. Retrieved (July 15th, 2003) from : <http://www.webcredibility.org> .

Gambetta, D. (1988) Can we trust trust? In I.D. Gambetta (Ed.) *Trust: Making And Breaking Cooperative Relations*. Oxford: Basil Blackwell.

Grabner-Krauter, S. and Kaluscha, E.A. (2003). Empirical research in online-trust: a review and critical assessment. *International Journal of Human-Computer Studies*, 58, 783-812.

Lee, M.K.O., and Turban, E. (2001). A trust model for consumer Internet shopping. *International Journal of Electronic Commerce*, 6 (1), 75-91.

Lee, J., Kim, J. & Moon, J.Y. (2000). What makes Internet users visit cyber stores again? Key design factors for customer loyalty. *Proceedings of the Conference on Human Factors in Computing Systems CHI 2000* (pp. 305-312). New York ACM.

Lee, J. & Moray, N (1992) Trust, control strategies and allocation of function in human-machine systems *Ergonomics*, 35(10), 1243-1270

Lee, J. & Moray, N (1994) Trust, self-confidence, and operators' adaptation to automation *International Journal of Human-Computer Studies* 40; 153-184

Lewicki, R.J. and Bunker, B. (1995). Trust in relationships: A model of trust development and decline. In B. Bunker and J. Rubin, (Eds.) *Conflict, Cooperation and Justice*. San Francisco: Jossey-Bass.

Mayer, R.C., Davis, J.H., Schoorman, F.D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20 (3), 709-734.

Meyerson, D., Weick, K.E., Kramer, R.M. (1996). Swift trust and temporary groups. In R.M. Kramer and T.R. Tyler (Eds). *Trust in Organizations: Frontiers of Theory and Research*. Thousand Oaks, CA: Sage Publications, 166-195.

McAllister, D.J. (1995) Affect-Based And Cognition-Based Trust As Foundations For Interpersonal Cooperation In Organizations *Academy Of Management Journal* 38(1); 24-59

McKnight, D. H. and Chervany, N.L. (2001). Trust and Distrust Definitions: One Bite at a Time. In R. Falcone, M. Singh and Y.-H. Tan (Eds.) *Trust in Cyber-societies*. Berlin: Springer-Verlag.

Riegelsberger, J., Sasse, M. A., & McCarthy, J. (2003). Shiny happy people building trust? Photos on e-commerce websites and consumer trust. *Proceedings of CHI2003*, April 5-10, Ft. Lauderdale, Fl., USA. New York: ACM Press.

Shelat, B. and Egger, F.N. (2002). What makes people trust online gambling sites? An empirical study to identify on- and offline factors that influence gamblers' perception of an online casino's trustworthiness. *Proceedings of CHI 2002*. New York: ACM Press.

Steinbrück, U., Schaumburg, H., Duda, S. & Krüger, T. (2002). A picture says more than a thousand words - photographs as trust builders in e-commerce websites. In *Proceedings of Conference on Human Factors in Computing Systems CHI 2002, Extended Abstracts* (pp. 748-749). New York ACM Press.

Taylor, H. (2003). Most People Are "Privacy Pragmatists" Who, While Concerned about Privacy, Will Sometimes Trade It Off for Other Benefits. The Harris Poll #17, March 19, 2003. Available at: http://www.harrisinteractive.com/harris_poll/index.asp?PID=365

Weinstein, L. (2003). Inside risks: Spam wars. *Communications of the ACM* 46 (8), pg 136.

Xiong, L. and Liu, L. (2003). A reputation-based trust model for peer-to-peer ecommerce communities. Proceedings of the conference on Electronic Commerce. New York: ACM Press.

Zacharia, G, Moukas, A. and Maes, P. (2000). Collaborative reputation mechanisms for electronic marketplaces. Decision Support Systems, 29, 371-388.