How Does Personality Affect Trust in B2C e-Commerce?

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ABSTRACT

Trust is a critical component of successful e-Commerce. Given the impersonality, anonymity, and automation of transactions, online vendor trustworthiness cannot be assessed by means of body language and other environmental cues that consumers typically use when deciding to trust offline retailers. It is therefore essential that the design of e-Commerce websites compensate by incorporating circumstantial cues in the form of appropriate trust triggers. This paper presents and discusses the results of a study which took an *initial* look at whether consumers with different personality types (a) are generally more trusting and (b) rely on different trust cues during their assessment of first impression vendor trustworthiness in B2C e-Commerce.

Categories and Subject Descriptors

H.5.2 [**Information Interfaces and Presentation**]: User Interfaces – *evaluation/methodology, screen design.* H.1.2 [**Models and Principles**]: User/Machine Systems – *software psychology.*

General Terms

Human Factors, Design, Experimentation.

Keywords

Personality type, trust, evaluation, e-Commerce.

1. INTRODUCTION

"The concept of trust is crucial because it affects a number of factors essential to online transactions, including security and privacy. Without trust, development of e-Commerce cannot reach its potential" [4, p. 2].

Trust is widely recognized as an important facilitator of e-Commerce since online transactions often require the divulgence of sensitive personal and financial information [19]. Although critical in any business, trust is especially significant in e-Commerce where transactions are more impersonal, anonymous, and automated [11], and where trustworthiness cannot be assessed

by means of body language and other traditional environmental cues [10].

A complex concept, trust has been the subject of study across many different disciplines (e.g., sociology, psychology, computer science, and business). Examining trust from the perspective of social relationships, sociological research posits that trust can be held by individuals, social relationships, and social systems, and asserts that modern society would not be possible without trust [11]. Psychological trust research focuses on individual personality differences and interpersonal relationships, whereas business studies of trust have identified credibility (the belief that the vendor has the necessary capacity to complete a task effectively and reliably) and benevolence (the belief that the vendor has good intentions and will behave in a favorable manner even in the absence of existing commitment) as critical factors of trust [11].

Over recent years, a series of models of trust and its formation have been proposed, ranging from the mathematical (e.g., [21]) to the abstract (e.g., [6, 13, 16, 31]). Trust researchers have adopted a variety of different classifications of trust. For example, Head *et al.* [14] distinguish between *soft trust* and *hard trust* wherein, unlike the latter, the former cannot be resolved through the application of technology. McCord and Ratnasingam [23] define two types of trust: *technological trust* which relates to an individual's belief that the underlying technology infrastructure and control mechanisms of a website are capable of facilitating the transactions; and *relational trust* which concerns the willingness of a consumer to accept vulnerability in an online transaction on the basis of positive expectations regarding the vendor's behavior. They argue that technological trust in the form of website quality, content, and appearance distills a perception of security and reliability which contributes to the potential for a consumer to trust an e-retailer, and that relational trust is based on the attitudes and behaviors of consumers as they relate to interface elements such as privacy policies, assurance seals, and testimonial or vendor information. Marsh and Meech [22] distinguish between *initial* (or *'grabbing'*) *trust* and *experiential trust.* They note that many of our initial trusting decisions are spontaneous and claim that if a user is turned off by a website, a vendor will never succeed in moving consumers from the level of initial or spontaneous trust to the more established levels of experiential trust. Uslaner [33] differentiates between *strategic trust* – which helps us decide whether a website is 'safe' – and *moralistic trust* – which is based on the world view we learn at a very early age and which gives us sufficient faith to take risks. He stresses that moralistic trust plays an important role in people's view of the Internet as an opportunity or as a threat.

1.1 Disposition to trust

A common thread running through existing research, models, and classifications of trust is that trust is multidimensional and, specifically, that there is a dimension of trust that lies deep within in the essence of the consumer, namely the consumer's *disposition to trust*. Disposition to trust is a measure of the extent to which an individual is willing to depend on others [27] and is not based upon experience with, or specific knowledge of, a particular trusted party; rather, it is the result of general life experience and socialization [16, 24]. Gefen [9] suggests that, for new relationships – such as between a consumer and a previously unused online vendor – disposition to trust is a strong determinant of initial trust. Consumers' disposition to trust has been shown to exert a strong impact on their trust in an e-retailer and subsequently on their intention to purchase [23]; in particular, consumers who exhibit a greater disposition to trust will more readily trust an e-retailer given only limited information about the vendor, whereas other consumers will require more information in order to establish trusting beliefs in the vendor [28]. Kim *et al.* [16] suggest that the different developmental experiences, personality types, and cultural backgrounds of consumers influence their inherent propensity to trust and their ultimate placement of trust in a vendor.

Uslaner [34] suggests that trusting people are more likely to believe they have little to fear from the Internet: they are more open to shopping online and less likely to believe that their privacy will be violated on the web. Since trust makes people willing to take risks, trusting people are more willing to take risks online (such as providing credit card details) [10]. Trusters see the Internet as benign – they see it as a place populated with many trustworthy people and companies [10]. According to Gefen [10], trusting people are 7% – 10% more likely to give online vendors the benefit of the doubt on matters of privacy. In contrast, people who are generally mistrusting of others fear the Internet the most as they often buy into conspiracy theories and worry about their general privacy [10]. Compared to trusters, mistrusters are: 12.4% more likely to be very concerned that businesses have access to their personal information; almost 20% more worried that Internet dealings are not private; 8% less likely to dismiss a concern that someone might know which websites they have visited; and almost 15% more worried about hackers accessing their credit card details [10]. There is nothing to suggest that worrying about privacy and security concerns online (noted to be the most important factors that distinguish buyers from non-buyers [35]) will make a person *less* trusting, but instead a person's trust *online* merely mirrors his or her trust *offline* [10]. No matter what people do online, they will not become more or less trusting as a result [10]: the Internet does not remake people's personalities [34].

According to Uslaner, *"all sorts of people go online* […] *the trusting and the misanthrope, the sociable and the recluse"* [34, p. 229]. Trust does not dictate the frequency with which someone goes online nor does the frequency with which someone surfs online affect their establishment of trust and/or, as mentioned above, the essence of their trusting nature [10]. The main reason people go online frequently is to make online purchases, and trusting people are no more or less likely to go online than misanthropes [10].

Trust is mostly learned during childhood: the extent of one's trust as a child largely determines the extent of one's trust as an adult [10]. Trust reflects an optimistic world view and a belief that others share one's fundamental values; it stems from an upbeat world view that is transmitted early in life from one's family [34]. In contrast, mistrust reflects a pessimistic world view and a perception that things are beyond one's control [10].

Acknowledging consumers' disposition to trust as fundamental to the formation of trust, Sutherland and Tan [31] introduced the concept of *dispositional trust* to their multidimensional model of trust. They explicitly reflect the importance of this personality-based trust on consumers' intention to trust and online purchasing behavior (see Figure 1). They state that both institutional and interpersonal trust are reliant on dispositional trust since, if an individual has trouble forming trust in general, then he or she is unlikely to find it easy to trust a remote third party such as an online vendor.
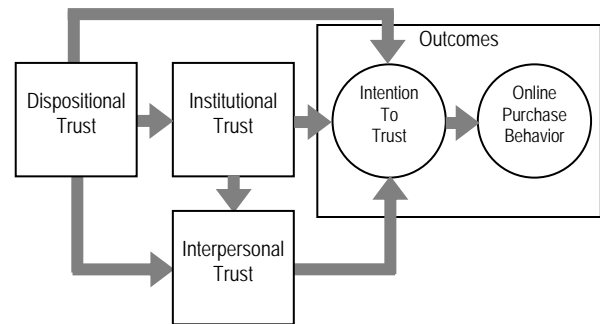

Figure 1. Sutherland and Tans' multidimensional trust model [31].

1.2 Trust and website design

In the offline world, consumers exhibit attitudes and behaviors that are affected by intrinsic cues gathered from the physical environment in which they make a trust-based decision [31]. Self-perception theory posits that one's attitude towards another party is formed through interaction with that party and through circumstantial information [17]. People typically draw on cues from their environment to determine the nature of their own vulnerabilities and the good will of others [7]. Since consumers cannot physically interact with online vendors to elicit these trust-informing cues, designers must create new social norms for professional e-services [29] – that is, they must ensure that consumers' behavior or actions on a website enable them to form their trust in an online vendor [17, 26]. As such, designing for trust in e-Commerce is an increasing concern for the field of human computer interaction (HCI) [26].

An e-retailer's website provides a consumer with a first impression about the vendor's trustworthiness and this impression strongly influences the consumer's development of initial trust [1-3, 17, 36]. In their 'call to arms', Marsh and Meech [22] challenged website designers to start thinking about how trust can be facilitated in the initial ('grabbing') stages of online engagement, claiming that websites can be designed in such a way that trust is an integral part of the design rather than an afterthought.

Several researchers have indeed considered the components and structure of an e-Commerce website design that might induce trust in consumers (e.g., [1, 2, 4, 5, 8, 13, 15, 32, 36, 39]). Factors such as branding, ease of use, professional look-and-feel, website structure, channels available for communication with the vendor, privacy, policies, and third party assurance mechanisms have been collectively recognized as being essential to consumers' assessment of trust.

1.3 Trust linked to personality

Thus far, we have seen that consumers' disposition to trust is a very strong determinent of their intention to trust and their ultimate online behaviour. We have concluded that our disposition to trust is learned during childhood – it is deeply rooted in our personality [1]. Our disposition to trust makes us no more or less likely to engage in e-Commerce transactions but does influence the risks we are willing to take in the process. People can engage in virtually identical online interactions yet each reach widely different judgments as to whether the interactions were trustworthy; what is therefore considered harm in online transactions may not have broad societal agreement [7].

We have determined the role of website design in engendering trust amongst consumers. Individual consumers differ in their trusting personality traits and the rate at which they therefore acquire, from the website, the cues necessary to trust, and commence an online transaction with, a vendor [13].

Sutherland and Tan [31] explicitly acknowledge the influence of personality in their multidimensional trust model; they propose that extroversion and openness to experience lead to a higher disposition to trust and, conversely, that neuroticism and conscientiousness leads to a lower disposition to trust. This proposed link between personality and trust is at the overarching level of an individual's *propensity* to trust. The research presented in this paper aims to investigate Sutherland and Tans' [31] proposition. It also aims to look 'below' this to investigate whether there is any mapping between personality and the individual features that designers encapsulate in an e-Commerce website in an effort to engender trust – the *trust triggers*. In other words, based on the results of a user study, we take an initial look at whether consumers with different personality types (a) are generally more trusting and (b) rely on different trust cues during their assessment of first impression e-Commerce vendor trustworthiness.

The following section of this paper outlines a classification of trust triggers and highlights the specific triggers that formed the basis of our study. Section 3 briefly introduces the notion of personality as it relates to our study, and outlines the method we used to assess the personality of our study participants. Section 4 describes our study design and Section 5 presents and discusses the results. Finally, Section 6 draws some conclusions from our findings and outlines future work in this field.

2. TRUST TRIGGERS

As already mentioned, previous studies have identified a number of *trust triggers* – that is, website elements that serve as circumstantial cues for consumers during their assessment of vendor trustworthiness. Amongst these, we looked for agreement on the validity of trust triggers. Yang *et al*. [39], Jarvenpaa *et al.* [15], and Akhter [1] verified that availability of customer testimonials and feedback is important when attempting to

engender consumer trust. Yang *et al*. [39] and Akhter [1] confirmed that user-friendly interface design and navigation, and readily available information on the vendor's processes and policies, trigger development of trust amongst consumers. Independently, Yang *et al*. [39], Jarvenpaa *et al.* [15], and Cheskin Research [4] concluded that branding – that is, the display of a prominent logo which easily identifies a vendor – is a significant environmental cue during the development of trust. Yang *et al.* and Cheskin Research [4, 39] also agreed on the importance of logos for third party certification and/or seals, professional interface design, and the availability of both online and offline channels of communication between the consumer and vendor. Akhter [1] and Cheskin Research [4] agreed that up-to-date technology and security measures (e.g., the use of Secure Sockets Layer (SSL) technology) are verifiable trust triggers. All of the aforementioned trust triggers were additionally verified by Riegelsberger and Sasse [25].

From the aforementioned, we were able to identify a set of trust triggers which had been corroborated in independent studies, namely:

- customer testimonials and feedback;
- professional website design;
- consistent (professional) graphic design;
- ease of navigation;
- branding;
- third party security seals;
- up-to-date technology and security measures;
- alternative channels of communication between consumers and the vendor; and
- clearly stated policies and vendor information.

Table 1. Classification of trust triggers.

Immediate Trust Triggers
customer testimonials and feedback
professional website design
Branding
third party security seals
up-to-date technology and security measures
alternative channels of communication between consumers and the vendor
clearly stated policies and vendor information
Interaction-Based Trust Triggers
ease of navigation
consistent (professional) graphic design

We classified these triggers according to their immediacy (see Table 1): *immediate trust triggers* are those triggers which come into effect as soon as a consumer views a website; in contrast, *interaction-based trust triggers* impact on consumers' assessment of trust as a result of dynamic interaction with the website.

For the purpose of our study, we restricted our focus to the immediate trust triggers since we wanted to investigate consumers' first impression assessment of trustworthiness.

3. PERSONALITY

Originating from the Latin *persona* (meaning 'mask'), *personality* is a combination of emotion, thought, and behavior patterns unique to an individual [38]. Personality traits are the prominent aspects of a person's personality that determine their behavior and are exhibited across a range of social and personal contexts. The evolution of personality suggests that, over time, people internalized the challenges they faced socially, their successful behaviors, and their traits, and these were then passed on to their children; evidence suggests that humans have a predisposition towards certain traits and behaviors [30].

To achieve social interaction, two parties need to be able to evaluate the benefits of the interaction in relation to themselves and each other; when forming coalitions, people decide with whom they wish to share their resources [30]. To allow for rapid, and often good, decision making when we meet a new person, our mind reduces the multifaceted personality of the individual to a small set of predictive descriptions [30]. Friedman *et al*. [8] suggest that people trust computers and hold them accountable under precisely the same circumstances in which people would trust other people. Kim and Moon [18] stress that people respond directly to their computer – they react to it as if it is a social actor. Hence, we therefore suggest that when a consumer first views an unfamiliar e-Commerce website, he or she first evaluates the benefits of interacting with that site and then, when deciding whether or not to trust the vendor, reduces the multifaceted website to a small set of predictive descriptors – the trust triggers – to facilitate effective decision making.

Formal personality assessments allow individuals to be grouped into personality types, where individuals within each type have a fairly consistent tendency to act in a certain way in a given situation. The ability to estimate an individual's reaction to a situation makes personality assessments very useful across many disciplines, including psychological research [37]. Personality assessments date back to 460 B.C.; the famous Greek philosopher Hippocrates believed that everyone ascribed to one of four basic personality types: *melancholic*, *sanguine*, *choleric*, and *phlegmatic* [12]. Today, there are many different personality tests available for use: these range from formal tests such as the well known Myers-Briggs Indicator, to a plethora of unvalidated tests available on the Internet, and most stem from the 4 personality types posited by Hippocrates. For the purpose of our research, our challenge was to identify and select a validated test which was simple and quick to administer (most notably, that was not too complex and would not take study participants an excessively long time to complete, and that did not require a background in psychology to score) as well as being freely available for our use (as opposed to only be available via a consultancy service). Based on its availability, its simplicity and ease of completion, its extensive validation, and its conformity with the established and accepted personality types posited by Hippocrates, we selected the *Personality Plus* assessment method devised by Littauer [37].

Personality Plus defines four different personality types [20]:

- *Popular Sanguine* – the extrovert, talker, and optimist. Individuals with this personality type are generally appealing to others, they are enthusiastic and expressive and live life in the present. As such, they have a tendency to make decisions quickly and are likely to take risks. As talkative storytellers, their communication methods often lack specifics and focus, instead, on the exciting details.

- *Perfect Melancholy* – the introvert, thinker, and pessimist. Individuals with this personality type are generally deep, thoughtful, and analytical. Serious and purposeful, they tend to be detail conscious and conscientious. As such, they tend to make decisions slowly and deliberately based on facts, and often need assurance that the information on which they base a decision will remain valid in the future.

- *Powerful Choleric* – the extrovert, doer, and optimist. Individuals with this personality type are independent and self-sufficient. Dynamic and active, they are not easily discouraged and tend to take action quickly. They are strong willed, decisive, and well organized. When making a decision, they can see the whole picture and typically want all the information necessary (but no more than is necessary) in order to facilitate their decision making.

- *Peaceful Phlegmatic* – the introvert, watcher, and pessimist. Individuals in this category tend to be easy going and agreeable or amiable. Sympathetic and kind, these individuals often mediate problems. When making decisions, they often need to feel safe and prefer to take their time and focus on personal opinions and guarantees that assure the decision carries the least amount of risk possible.

Obviously, each of the personality types is considerably more complex than these brief overviews suggest. For our purposes, however, the above descriptions highlight the key facets of the personality types as they are likely to impact on our study. Clearly, there are two optimistic personality types and two pessimistic personality types, each of which have been posited (although not shown) to have a different impact on disposition to trust [31] in the contact of e-Commerce.

4. STUDY DESIGN & PROCEDURE

We developed a questionnaire-based survey to serve as an *initial* investigation into the effect of personality type on consumers' trust and perception of importance of trust triggers. Our questionnaire comprised three parts: (a) a series of questions asking respondents about their attitudes towards offline and online shopping in general; (b) the *Personality Plus* personality assessment; and (c) a series of questions focusing on respondents' reaction to a screen dump of a website with embedded trust triggers.

For the third part of our survey, we developed a mock-up of a webpage from a fictitious online book store and incorporated a color screen dump of that webpage in the questionnaire (see Figure 2). Like Hassanein and Head [11] we used a fictitious online store to avoid any potential bias from previous branding or experience. Additionally, like Kim *et al.* [17], we felt that a book purchase would be a viable scenario for our study because a book is a standard product and it is less susceptible to variation in quality. As can be seen from the screen dump in Figure 2, indicators of each of the immediate trust triggers identified in Section 2 are embedded in the webpage and/or are visible in (or inferable from) the web browser (e.g., use of SSL).

Figure 2. The screen dump of our online bookstore webpage mock-up.

Using a 5 point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5), respondents were asked to rate the strength of their agreement with each of the following 5 questions regarding their perception of the overall trustworthiness of the vendor:

- *this store is trustworthy;*
- *this store wants to be known as one that delivers on its promises;*
- *for this purchase, I would likely buy from this store;*
- *I would return to this store to browse in the future;* and
- *I would return to this store to make a purchase in the future.*

Using another 5 point Likert scale ranging from 'very unimportant' (1) to 'very important' (5), respondents were then asked to reflect on how important they felt the inclusion/availability of each of the following trust triggers was in terms of establishing their perception of trust (as can be seen, where necessary to avoid ambiguity as a result of potentially unfamiliar terminology, some of the features were explained to respondents):

- *VeriSign security certificate (in lower right corner);*
- *the use of Secure Sockets Layer (use of https:// in the address bar and small lock symbol in the right corner of the bottom browser bar);*
- *privacy and terms information;*
- *company profile information;*

- *testimonials from other customers;*
- *professional looking website design;*
- *large 'www.Books.net" logo in the top left corner;*
- *statement on logo that www.Books.net is "the world's largest .net bookstore";*
- *high quality graphics;*
- *ample white space (everything is not crammed together);*
- *easy to find contact information;* and
- *contact information includes live person (phone) support, not just email.*

We administered the questionnaire in hardcopy format (as opposed to using an online-survey mechanism) because we did not want to potentially eliminate respondents whose general mistrust of the electronic medium would prevent their participation in the study.

We received a total of 64 valid questionnaire responses: 29 females and 35 males with ages ranging from 18 to 65. The breakdown of personality types was as follows: *Popular Sanguine* – 10 respondents; *Perfect Melancholy* – 14 respondents; *Powerful Choleric* – 16 respondents; and *Peaceful Phlegmatic* – 19 respondents. A total of 5 respondents did not demonstrate a single dominant personality type and we classified these respondents as *Non Dominant*. Section 5 presents and discusses the study results.

5. RESULTS & DISCUSSION

We should, at this point, stress that we are attributing no statistical significance to the findings reported here given our small sample size. Our intention was to conduct an *initial* investigation of the role of personality in online shopping in order that we might make some initial *observations* which we can later follow up with more extensive research.

5.1 Personality and prior shopping experience

Table 2 shows the responses we received regarding participants' experience to date with online shopping. As can be seen, 89% of respondents had previously made an online purchase. Across the four personality types, this ranged from 70% of *Popular Sanguine* respondents to 100% of respondents with *Powerful Choleric* and *Peaceful Phlegmatic* personalities. Amongst those respondents

Table 2. Respondents prior online shopping experience.

Question	Total (%)	Popular Sanguine (%)	Perfect Melancholy (%)	Powerful Choleric (%)	Peaceful Phlegmatic (%)	Non Dominant (%)
Gender						
Female	45	70	64	31	26	60
Male	55	30	36	69	74	40
Age Group						
18 - 25 years	53	50	50	56	53	60
26 - 35 years	22	40	21	13	21	20
36 - 45 years	13	10	7	19	16	0
46 - 55 years	6	0	14	0	5	20
56 - 65 years	5	0	7	6	5	0
66+ years	0	0	0	0	0	0
Hours Online/Week						
0	5	0	0	0	0	20
< 1	0	0	14	0	0	0
1 - 5	11	0	14	13	16	0
6 - 10	16	20	21	13	11	20
11 - 15	17	0	14	31	21	0
16 - 20	16	20	14	19	5	40
> 20	36	60	21	25	47	20
Previously Purchased Online	89	70	86	100	100	60
Reasons for Not Purchasing Online						
no easy internet access	14	0	50	0	0	0
find e-Commerce overwhelming	0	0	0	0	0	0
do not own credit card	71	67	100	0	0	50
privacy concerns (personal information)	86	100	50	0	0	100
inability to experience product	29	33	0	0	0	50
lack of product information	29	33	0	0	0	50
shipping concerns	14	0	50	0	0	50
preference to shop offline	43	67	0	0	0	50
other	22	33	0	0	0	50
Had Negative Experience Online	25	20	36	31	21	0
Nature of Negative Experience						
item did not arrive on time	31	50	20	40	25	0
item did not arrive at all	31	0	0	40	75	0
item arrived but was not as expected	31	0	20	80	0	0
wrong item was delivered	0	0	0	0	0	0
incorrectly charged for item	19	0	20	20	25	0
difficulties navigating website	31	50	60	17	0	0
personal info disclosed without consent	0	0	0	0	0	0
other	44	50	40	40	50	0
After Negative Experience, Purchased Again						
from offending merchant	25	0	20	60	0	0
from any online merchant	88	100	80	100	75	0

who had never previously purchased anything online, concern over privacy was the most commonly stated reason for not engaging in e-Commerce (86%). This was particularly prevalent amongst the 30% of *Popular Sanguine* respondents who had never made an online purchase and for whom a preference for shopping offline was a strong deterrent to shopping online. This is perhaps surprising given the personality traits attributed to *Popular Sanguine* (see Section 3) – that is, their extroversion and likelihood to take risks. It would seem to indicate that, contrary to the suggestion put forward by Sutherland and Tan [31], dispositional trust is perhaps not as cleanly, with respect to online consumerism, defined along the lines of extroversion as one might expect. This is reinforced by the fact that all respondents in both the *Powerful Choleric* and *Peaceful Phlegmatic* groups (extroverts and introverts respectively) had made online purchases.

A quarter of all respondents who had previously shopped online reported having had a bad experience with online purchasing. The percentage of respondents who had had a bad online shopping experience was highest amongst members of the introverted *Perfect Melancholy* group (36%). This concurs with Friedman *et al's* [7] observation that what is considered harm in online transactions may not have broad societal agreement.

When asked to describe the nature of their negative experiences, respondents provided a variety of answers (see Table 2). Approximately one third of all respondents who had reported a bad experience with online shopping indicated that items failed to arrive on time, failed to arrive at all, or were not as expected when they did arrive. These findings suggest that online vendors are perhaps often not providing a level of service that is sufficiently reliable to meet the expectations of their consumers, and this is leading to a negative perception of the online shopping experience amongst those consumers.

Nearly one third of respondents considered their negative experience with an online vendor to be the consequence of a hard-to-navigate website. This suggests that online vendors are still not fully appreciating the important role of website design in consumers' online shopping behaviors. Indeed, the majority (60%) of the respondents with introverted *Perfect Melancholy* personalities attributed negative experiences with online shopping (at least in part) to poorly designed websites. Collectively, these findings are interesting in that, albeit far from statistically validated given our small sample size, there is reason to suggest that our personality type influences our perception of the nature of our online experience as well as determines what aspects of the interaction with the vendor contribute most significantly to that perception. In the case of introverted personalities (specifically *Perfect Melancholy*) a well designed website plays a dominant role in the perception of experience and, as such, this highlights the importance of designing for trust.

So, rather than perhaps our personality type simply dominating our decision to trust (as suggested by Sutherland and Tan [31]), personality may play a significant role in flavoring our interpretation of our experience as well as our impression of what contributes to a positive or negative experience when shopping online. To determine the precise mapping between personality and its role in this respect requires further detailed research.

As can be seen from Table 2, only 25% of respondents who reported having a negative experience with an online vendor chose to purchase again from that same vendor following the negative incident. Broken down according to personality type, this corresponded to 20% of the *Perfect Melancholy* and 60% of the *Powerful Choleric* respondents who had reported a negative experience. Approximately 88% of respondents reported making an online purchase from a vendor other than the offending vendor after their negative experience. All affected respondents with extrovert personalities (i.e., all *Popular Sanguine* and *Powerful Choleric*) were not put off e-Commerce despite their negative experiences. This lends some support to the idea that extroverts (especially *Powerful Choleric*) have a greater disposition to trust [31] – at least, that is, to trust a vendor *again* after their trust has been 'broken'. In the case of *Powerful Choleric* personalities, this fits with their tendency to be not easily discouraged.

5.2 Personality and trust triggers

As mentioned previously, a main focus of our study was to make some *initial* observations regarding the presence (or otherwise) of a mapping between personality type and the specific trust triggers that contribute to consumers' decisions about trust. We have already seen some indication that our personality may affect the manner in which we interpret our online shopping experience and may influence the particular aspects that factor into that perception. Consider, now, its influence on our perception of trustworthiness and reliance on trust triggers.

According to personality type, we calculated the average score attributed by respondents to the statements regarding trustworthiness (see Section 4). We did the same for the average scores attributed to the series of trust triggers (again, see Section 4). Figure 3 shows these results. Although, as stated previously we attribute no statistical significance to our results, the observable differences shown in Figure 3 are, nonetheless, interesting.
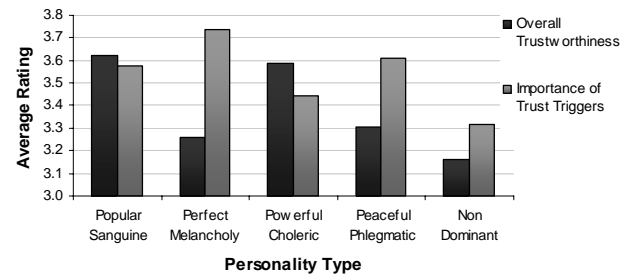
Figure 3. Average ratings regarding perceived trustworthiness and importance of trust triggers according to personality type.

The extrovert personalities (*Popular Sanguine* and *Powerful Choleric*) returned the highest trustworthiness ratings. This is in keeping with Sutherland and Tans' [31] assertions regarding personality and disposition to trust. Respondents with introverted personalities (in particular the *Perfect Melancholy* respondents) attributed high importance to the presence of trust triggers. So too, however, did the most trusting of the respondents – that is, the *Popular Sanguine* extroverts. Consider the balances shown

between trustworthiness and trust triggers in light of the stated personality traits of each personality type. *Popular Sanguine* personalities are optimists who focus on the details of a 'story': Figure 3 shows them to be trusting but also to have looked at the details. The pessimistic *Perfect Melancholy* personalities are detail conscious and analytical: it is not surprising, therefore, that of the four main personality types, their assessment of trustworthiness is the lowest and yet they attribute the highest importance to trust triggers. The optimistic *Powerful Choleric* personalities see the whole picture when making a decision and typically only want to deal with the precise information that can help them make that decision: next to the *Popular Sanguine* personalities, these optimists were the most trusting of our respondents but were clearly the most discerning in terms of their attribution of importance to individual trust triggers. Finally, the pessimistic *Peaceful Phlegmatic* personalities need to feel safe when making a decision: with lower trustworthiness ratings, they appear to have attributed relatively high importance ratings to trust triggers which implies a reliance on the trust triggers for that safe feeling.

use of SSL; availability of privacy and terms information; company profile information; professional looking website; easy to find contact information; and availability of personal contact (i.e., by phone) rather than just email. Popularity of these seven trust triggers was fairly consistent across all personality types and as such reflects their general significance within an e-Commerce website. Interestingly, the presence of the large company logo was not considered important by as many of the respondents, irrespective of personality type. This would seem to contradict previous work regarding the importance of branding in an e-Commerce website; we anticipate this to be a consequence of the fact that respondents knew this was a fictitious website and as such, the branding was pretty much redundant. That said, more of the pessimistic than the optimistic personalities did consider the logo to be an important contributor to their assessment of trust. Highest amongst these were the number of *Perfect Melancholy* personalities which further reflects the importance they attribute to triggers in general (compared to the other personalities) as was shown in Figure 3.
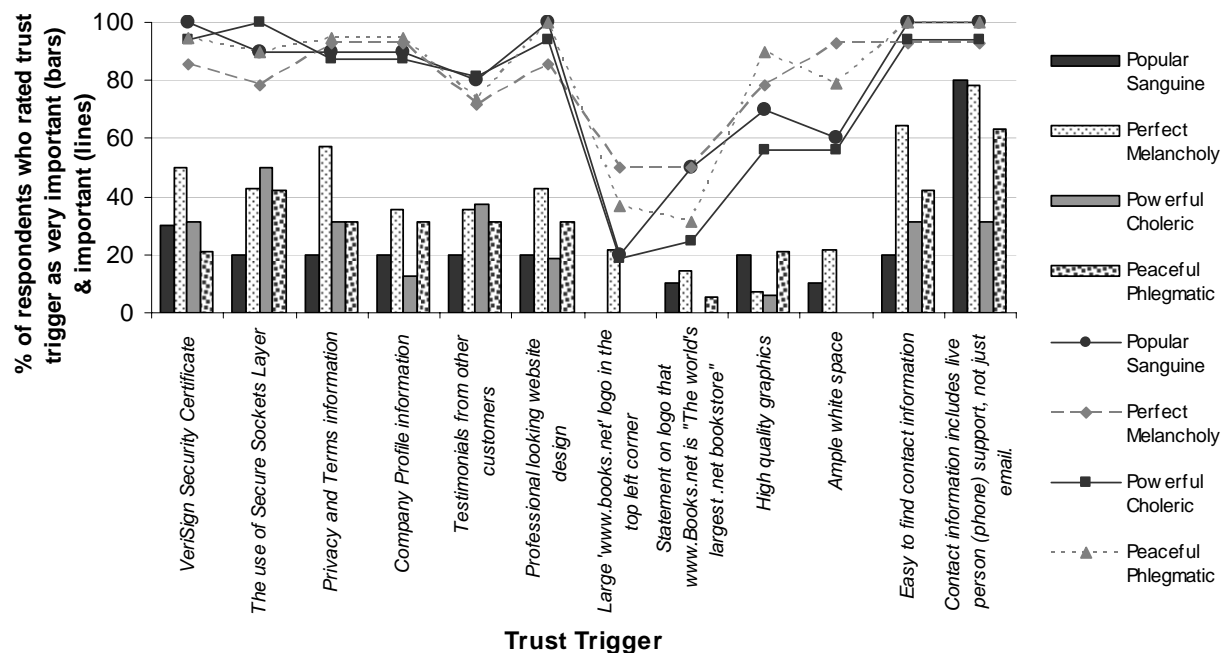

Figure 4. Percentage of respondents (according to personality type) who ranked each trust trigger as generally important (lines) and, in particular, very important (bars).

Figure 4 shows (using the lines) the percentage of respondents according to personality type who rated each of the examined trust triggers as important at some level. Figure 4 also shows (using the bars) the percentage of respondents in each personality group who specifically rated the trust triggers as 'very important'. The results shown in Figure 4 suggest that, in general, out of the set of trust triggers, the following triggers are considered important by most people: the VeriSign Security Certificate; the

Perhaps the most interesting results relate to the relative percentages of respondents in each personality type who considered the statement about the size of the company, the quality of the graphics, and the extent of white space to be important. The quality of graphics and extent of white space seem to be important to more of the pessimistic personalities than the optimists. This suggests that visual impact has the potential to more strongly influence consumers with pessimistic tendencies

than optimists. Interestingly, the statement about the company size seemed to impact on equal numbers of the *Perfect Melancholy* and *Popular Sanguine* (pessimist and optimist respectively) personalities; the percentage of respondents in these groups who considered this particular trigger important exceeded the percentages for the other two groups.

Consider, now, the percentage of respondents in each group who specifically rated each of the trust triggers as 'very important' (see the bars in Figure 4). The solid bars represent the optimistic personalities; the patterned bars represent the pessimistic personalities. With the exception of being able to contact the vendor by telephone, the biggest risk takers – the *Popular Sanguine* personalities – do not seem to consider many of the triggers as very important in terms of their decision to trust the vendor. The analytical *Perfect Melancholy* personalities, on the other hand, generally attribute high importance to more of the triggers than the other groups. In keeping with their personality traits, and as previously suggested, *Powerful Choleric* personalities are more selective and specific about which of the triggers they consider very important; in particular, they seem less concerned with some of the more superficial triggers such as logo, quality of graphics, and company marketing claims. Instead, they are more concerned about the security and privacy measures as well as feedback from other consumers and ability to easily contact the vendor. The *Peaceful Phlegmatic* personalities seem to fall somewhere between the *Powerful Choleric* and the *Perfect Melancholy* personalities; they are seemingly selective as to which triggers are important but are slightly more consistent in terms of their attribution of importance to those triggers.

What is particularly interesting to note is the general consensus of agreement on the importance of the ease of finding contact information and the availability of personal (rather than only email) contact. For all groups other than the *Powerful Choleric*, who were most concerned with assurances of security and privacy, the ability to contact a 'real person' was considered the most important facet of an e-Commerce website in terms of guiding development of trust.

6. CONCLUSIONS & FURTHER WORK

Obviously, we cannot draw any statistically supported conclusions from our findings. However, our observations highlight some interesting interplay between personality and trust in e-Commerce. They also suggest avenues for future research in this field.

Our results support the idea that consumers as a whole do not perceive online experiences – and in particular harm – with broad agreement [7]. Based on personality type, consumers consider different aspects of their online experience to be primary contributors to their perception of negativity.

Our findings lend some support to the idea that extroverts are more disposed to trust [31] – specifically, that is, to trust a vendor *again* after their trust has been 'broken'.

Our results *indicate* that there is some evidence that different personalities attribute different importance levels to each of the accepted trust triggers. Interestingly, the findings highlight the significance of being able to personally contact the vendor.

We had obviously hoped that our results would be more conclusive and show a clear mapping between personality type and trust triggers. Upon reflection, given the inherent complexity of personality, a much larger sample size might have been necessary to statistically determine any correlation.

Perhaps we approached this study from the wrong angle given the complexity of the problem. Perhaps we should have asked respondents to suggest their impression of the personality of the website as a whole, and to have identified which of the trust triggers contributed to this impression. As previously mentioned, to allow for rapid decision making when we meet a new person, our mind reduces the multifaceted personality of the individual to a small set of predictive descriptions [30]: perhaps we should, therefore, have structured the study to encourage respondents to react to the website in this manner as opposed to asking them to assess each trigger in turn, which might have artificially caused them to attribute deeper and more even consideration of triggers than they would normally have done. We will consider this approach for future investigation in this field.

Gefen [10] noted that there may be some characteristics unique to the online bookstore market; interaction with an online bookstore requires a relatively small investment of time and credit, and books themselves are not a very risky type of merchandise. Perhaps, by choosing an online bookstore as the focus of our study, we picked a purchase that is generally considered safe; perhaps if we had focused on something with a higher monetary value and/or more potential for variance in quality we might have been able to elicit more detailed information from our study. We anticipate investigating this possibility in future research.

Despite the limitations of our study, we feel our results contribute to the general knowledge base in terms of our understanding and/or appreciation of the complex issue of trust in e-Commerce websites.

7. ACKNOWLEDGMENTS

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