

To Believe or Not to Believe a Call to Action: An Empirical Investigation of Source Credibility

Craig Claybaugh^(✉)

Missouri University of Science and Technology, Rolla, USA
claybaughc@mst.edu

Abstract. How well can individuals detect deception from information sources? This study examines consumer evaluations of a real CRM product brochure and a fraudulent one that imitates it. The forged brochure contains malicious manipulations designed to decrease trust in the product and oversell the abilities of the CRM system. This study seeks to see how manipulations of the material are perceived by the individuals and how that impacts their willingness to believe the source credibility of a message.

Keywords: Source credibility · Deception · Trust · Media assurance

1 Introduction

Individuals acquire information from a variety of sources every day. These sources of information vary considerably with respect to reliability and credibility of their content [31]. For example, the *Wall Street Journal* might be considered a more credible provider of information on business matters than *National Geographic*. Views about credibility also develop based on the sources mentioned by or associated with sources of information [33]. Knowledge about an individual source (e.g., a respected multinational corporation vs. a small regional corporation) and the quality of its presentation have been found to influence whether readers trust on or ignore the propositions provided by that source [38].

This paper explores the following research question: Are individuals able to detect deceptions of printed technical advertisements from a trusted source? More specifically, this study aims to see if deceptive manipulations of a print media's quality and layout can be detected if the source of the information is trusted by the individual. To address this research question an experimental design using eye tracking will be conducted to examine how elements of print material are used to assess credibility. One of the contributions of this study, made feasible by the use of eye tracking, is to open the black box of information assimilation and to study the visual cues used by subjects to make a determination of credibility.

2 Conceptual Background

The conceptual background in this paper draws on marketing and IS literature to look at an understanding of how subjects may detect instances of deception that are found in printed media (pdf file displayed on a computer screen). The theoretical approach here looks at the concepts of perceived source credibility and deception. The model proposed here looks at how perceived deception, trust, and risk influence a participant's attitude towards a particular source.

2.1 Source Credibility

Perceived source credibility is defined as judgments made by a perceiver on the believability of the communicator of information [38]. Credibility is important in creating effective information dissemination and acceptance by the subjects. In measuring source credibility, several researchers have utilized the three dimensions of expertise, trustworthiness and attractiveness [27]. Other dimensions, such as believability, likability and attractiveness, have also been used as dimensions of credibility [1, 10]. For the purposes of this paper, credibility is comprised of expertise (the degree to which a perceiver believes a source to know the truth), trustworthiness (the degree to which a perceiver believes a source will provide the truth), and goodwill (the degree to which a perceiver believes the source to act in good faith). Research has found that increasing source credibility positively influences a business, or brand, in several ways. For example, credible information elicits a greater attitude change within the viewer of the material than less credible information sources [7]. Marketing research has shown consumers are more likely to discount communications from spokespersons that they perceive to have low credibility [27].

Research also has demonstrated that source credibility also has a strong relationship with brand and company reputation [19]. Consumers use reputation as a means of inferring quality of a product offering and in surmising information being sent from a company. Credibility is whether a company can be relied on to do what it says it will do which is based on the firm's track record of success. Firms which value their reputation should not engage in deception due to the potential impact that deception will have on their public image [9]. By using a firm's positive reputation in communication a firm is able to deliver a strong message and make an impact on the recipient. At the same time a third party might try to use the positive reputation of a firm to their own advantage through deception. Types of manipulations and their implications on perceptions of credibility are described next.

2.2 Deception

Deception is an act in which individuals incorrectly infer that a product (or other object) possesses certain attributes due to an information source (i.e. advertisement or other communication medium) [30]. Within this domain, researchers have examined four related but distinct paradigms: deception, deceptiveness, misleadingness, and legal deception [37]. In general, academic scholars tend to take different viewpoints from

practitioners about what a deceptive claim is and why deception matters. The Federal Trade Commission (FTC), for example, has found deception to occur if there is a misrepresentation, omission, or practice that is likely to mislead the consumer acting reasonably in the circumstances, to the consumer’s detriment. Marketing researchers have looked at deceptive claims in advertising ranging from incomplete or partial information, false information, manipulative claims, ambiguous information, and a variety of customer testimonials [18]. Deception in an information source leads to a risk on the part of the individual as they face adverse consequences from believing the source [2].

As communication media has become more impersonal the individuals are left with fewer methods of establishing trust in a particular source. Uncertainty increases when the person cannot observe the real quality of the product or the verify performance and is therefore dependent on information that is provided by the information source [17]. As individuals try to deal with an information source they will use certain heuristics when interpreting actions or motives of the source of information. Past research has looked at ways to increase trust in communication in different contexts such as internet transactions or social interactions [38]. Detecting deception is not automatic and can be a daunting task for the cognitive processes of individuals. Insight into how individuals use inference and context to establish source validity will demonstrate how these beliefs are formed.

Figure 1 presents a model of source credibility that relates deception, perceived risk, and trust. The model draws on the theory of reasoned action [15] and assumes that an individual’s beliefs about a source of information affect the individual’s attitude towards the source. These attitudes are either favorable or unfavorable evaluations of information being presented. These attitudes towards the information source in turn influence the behavioral intention (willingness to believe a source of information is credible).

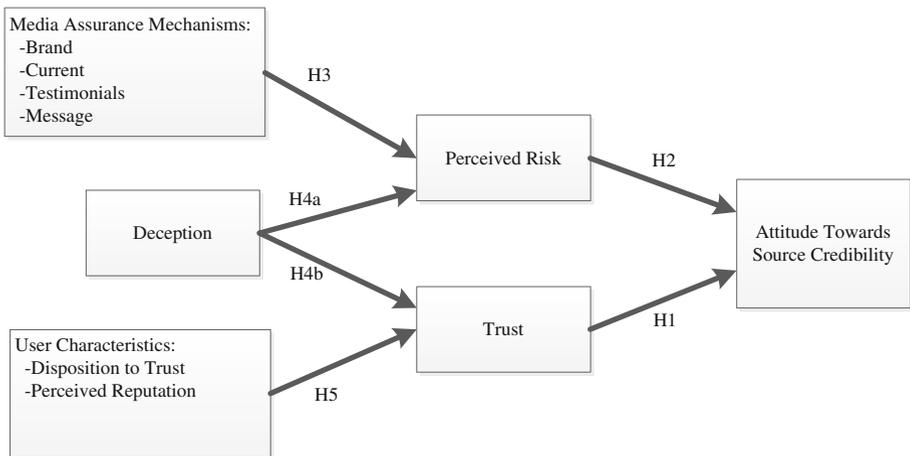


Fig. 1. Model of source credibility and deception

2.3 Trust

Trust and trust building are key components of trying to inform an audience on how to proceed. Kramer [24] provides a definition of trust: “a state of perceived vulnerability or risk that is derived from individual’s uncertainty regarding the motives, intentions, and prospective actions of others on whom they depend.” Although acknowledging that trust can comprise emotional and social elements, the focus here is on the cognitive processes of trust and view trust as a choice process based on how an individual approaches the choice. Choice can depend on a calculative justification or can be grounded on heuristics familiar to the individual [3].

The trustworthiness of a source is expected to have a significant impression on an end user’s attitude toward the message [21]. Past studies have shown that highly trustworthy sources’ arguments are more eagerly accepted than that of low trustworthy sources [5] and that the trustworthy sources are presumed to provide truthful message information. Priester and Petty [32] propose that messages from untrustworthy sources come under greater inspection than those from their trustworthy counterparts. When we consider information which is from a known source with an established reputation in the market (SAP in this study) individuals will feel the source is able to be relied upon. This favorable trust formation should influence the individual’s attitude towards establishing if the source is credible. Hence, the following hypothesis is proposed:

H1: Perceptions of trust in the information source will have a significant effect on the individual’s attitude towards the source’s credibility.

2.4 Perceived Risk

Risk refers to an individual’s perceptions of uncertainty and adversarial consequences of participating in an activity [12, 24]. When risk is perceived to be present, trust is needed before an individual is willing to rely on information presented by a source. The bigger the negative consequences that an individual faces from relying on the information (i.e., the higher the risk), the higher the need for trust. On the other hand, if there is nothing to risk, there is no likelihood for exploitation, and consequently there is no need for trust to be assessed by either actor. Risk presents a test of trust through the intention of making a person vulnerable to some potential harm [11]. Risk perception is an individual’s belief regarding the probability of gains or losses associated with relying on a source of information.

As information is presented to an individual there is a real possibility that an information source withholds information about the quality of a product or service to seek advantage. Information to withhold might include, for example, past performance of a company or perhaps pending litigation. Lack of having this information is a source of risk for potential end users to rely in this information to make a decision. This is an example of what previous researchers describe as “social uncertainty [39].” Social uncertainty exists when (1) an information provider has an incentive to act in a way that inflicts costs (or harm) on the information consumer; and (2) the information consumer does not have enough evidence to predict if the information provider will in fact act in

way to cause harm. Uncertainty increases when the individual cannot observe the quality of the product directly (as is the case for printed information) and is therefore dependent on information that is provided by the information source. To that end the following hypothesis is proposed:

H2: Perceptions of risk in the information source will have a significant effect on the individual's attitude towards the source's credibility.

2.5 Media Assurance Mechanisms and Deception

A number of methods are available to manipulate media to improve assurance of quality and build trust. These mechanisms are designed to reduce the appeal of the source being valid. Assurance mechanisms act as signals of behavior which should reduce the probability of there being a risk of relying on the information [17, 37]. Here we examine four forms of media assurance mechanism: brand, current (copyright), testimonials, and message.

Brand has had an impact on credibility of a message as the believability of the information contained in a message accompanied by a brand has been shown to decrease risk perception [14]. Brands can function as indications of a promise since brand equity will erode if and/or when they do not deliver what is expected [13]. Brands, and the equity embedded within, are long term signals from the firm used to create a higher perception of expected performance and quality [13]. When a brand holds a higher perception by an individual this can lower the cost of information assessment and lower risks of relying on a source with the brand. Firms build their brand reputation to increase their performance in the marketplace. This implies a recognized brand would have a strong incentive to provide accurate and current information. Conversely, an unrecognized brand might imply less of a promise to adhere to the same standards.

More traditional sources of information (library books, newspapers, magazines for example) provided organizational structures and publication dates. New trends of media and the information contained within tend to provide fewer assurances of the currency of their information [34]. More current information sources have been shown to increase the perception of information trust [29]. Information media being distributed by a corporation has a few qualifiers to signal currency namely in the form of a copyright date. These copyright dates provide a reference point to which the information was compiled and can be used in comparison to date the information is viewed. Including an older copyright date or none appearing at all will increase the risk of the individual relying on information which is not current.

Information media provide customers testimonials to help convey to the individuals the firm's ability to execute and achieve a stated goal. These customer testimonials also serve to demonstrate the firm's willingness and ability to transact in a trustworthy manner [28]. These testimonials act as an independent verification of the claims being made by the firm and being included in the media. These customers are providing their name to the media such that they provide validation to the success they have enjoyed [17]. Providing the customer testimonial from a recognized third party (large multinational firm) can further increase the trust one places in the information provided. At the

same time if the customer is not recognized or has a negative image in the mind of the information evaluator the sense of trust in the information decreases. This will also impact the risk perceived from relying on the source.

Messages contain a variety of claims that convey material information about product or service attributes [4]. A substantial stream of research has derived a variety of typologies for messages to be considered to be deceptive [37]. The claims contained within a message can be intentionally crafted in a way to mislead individuals to read beyond the literal statements and to infer erroneous information about a product or service being offered by the firm. When a message contains statements that appear too good to be true they indicate a willingness of the information source to stretch the truth. This implies that relying of the information is a risk for the individual.

In this study the expectation is that perceived deception will increase the strength of the relationship between media assurance mechanism and reduced risk. This is consistent with past studies on confirmation bias that suggests that people tend to allow their past beliefs influence their attitude towards information [16]. The higher the level of perceived deception a person has the more attention they will pay to assurance mechanisms. The expectation is that perceived deception will trigger the individual to seek cues about the safeguards of relying on the information source. The higher the perception of the media assurance mechanisms the less likely they are to perceive there to be a risk relying on the information source. Formally the following is proposed:

- H3: Perceptions of risk in the information source is determined by the presence of media assurance mechanisms.
- H4: Perceptions of deception in the information source will have a significant effect on risk perception of the information source.
- H5: Perceptions of deception in the information source will have a significant effect on trust of the information source.

2.6 Participant Characteristics

A number of individual differences have been found to influence the ability of a person to detect deception [25]. Two of these user characteristics are examined in this study: disposition to trust and perceived reputation.

Disposition to Trust. Disposition to trust, also called trust propensity, is an indication of an individual's overall willingness to depend on others within a wide variety of social contexts [22]. This general disposition of the individual to have a trusting attitude impacts his or her specific formation of trust towards an object (information source in this context). Many studies have looked at disposition to trust and how different settings influence its significance in trust formation [8, 20]. Following these other studies example this study sees the disposition to trust having a direct effect on the formation of trust in the information source.

Perceived Reputation. Reputation is defined as "the extent to which buyers believe a seller is professionally competent or honest and benevolent [35]". Past studies have

documented that a firm's reputation is a valuable intangible asset that necessitates a long-term investment of resources, efforts, and attention to ensure success [6]. Reputation, similar to brand, is an intangible, strategic asset that can be easily tarnished or damaged if not carefully protected. A firm with a high perception of reputation is generally reluctant to jeopardize their reputation through opportunistic behavior. A firm has a high perception of reputation from the individual is expected to have a higher perception of trust as well.

H5. The user's characteristics (disposition to trust, perceived reputation) will have a significant effect on trust of the information source.

3 Method

This section introduces the proposed subject sample, the experimental design, the measures, and the methods used to test them.

3.1 Subjects and Experimental Task

Undergraduate student subjects will be recruited to participate in the experiment. All subjects are asked to read a set of print advertising for a CRM software system from SAP. The subjects are instructed the task is focused on reading comprehension. The subjects performed the task using University computers and also had the eye tracker attached to their person. Once the subjects had read the print material they instructed to minimize the material and perform three additional tasks: (1) fill out the first part of a questionnaire; (2) go back to the printed material and examine five specific features of the material (copyright, corporate logo, customer testimonial, pictures in the advertisement, and facts presented); (3) fill out the rest of the questionnaire.

3.2 Design and Manipulations

Participants will be assigned one of two conditions. Half the subjects assessed a real print advertisement and the other half accessed a copy of the material forged by the researcher. The forged material contains several malicious manipulations designed to increase distrust and increase the risk of believing the source as being credible.

The forged material was built from a copy of an original print material from a real vendor selling CRM software, SAP CRM. The five modifications were made to the real material for the purpose of including a variety of mechanisms to see if the source credibility of a print advertisement from an established company can be found to be uncredible. The specific modifications were developed from previous research [17, 37].

- (1) Copyright – The copyright was created blurry and of small font.
- (2) Corporate logo – The corporate logo was blurry and was also slightly tilted.
- (3) Customer testimonial – Existing endorsements from customers were inflated by adding hyperboles and were from firms not internationally known.

- (4) Pictures in the advertisement – Created blurry and also slightly tilted.
- (5) Facts presented – Facts from the original were created with speculative that implies superiority without evidence to verify the claim.

3.3 Measures

The potential measures and their sources are shown in the appendix.

4 Discussion

This study has the potential to validate how individuals approach the task of validating the source of information as being valid. Depending on whether individuals have the ability and motivation to detect the deception contained in the study they may or may not recognize the manipulation. Some individuals are more susceptible to deceptive claims. Even if they detect the deception they still might not question the information if the source is from a firm they trust and has a good reputation in the market.

Appendix: Items to Use in Study

Attitude Towards Source Credibility - The following items are answered on a 1–7 scale of strongly disagree to strongly agree [23].

- I have a favorable opinion of the information source.
- I believe the information source is credible.
- I believe the information source is competent.

Trust - The following items are answered on a 1–7 scale of strongly disagree to strongly agree [17].

- This information source is trustworthy.
- This information source keeps customers' best interests in mind.
- The information source can be relied upon.

Perceived Risk – The following items are answered on a 1–7 scale of strongly disagree to strongly agree [36].

- I feel relying on this source of information is risky.
- How would you characterize the decision of whether to believe the information from this information source? (Anchors: Very significant risk to Very significant opportunity)

Deception - Please evaluate the quality of information provided by the source. To what extent do you believe that the information provided by the store is (1–7) [17].

- Accurate
- Misleading
- Truthful

Deceptive
Factual
Distorted

Media Assurance Mechanisms [17]: Testimonials (1–7) –

How convincing are the customer testimonials?
Convincing - Unconvincing
How believable are the customer testimonials?
Believable - Not believable
How impartial are the customer testimonials?
Impartial - Partial

Media Assurance Mechanisms: Message (1–7) –

How convincing are the messages in the information source?
Convincing Unconvincing
How believable are the messages in the information source?
Believable Not believable
How impartial are the messages in the information source?
Impartial Partial

Media Assurance Mechanisms: Brand (1–7) –

This information source has a good brand.
This information source has a positive perception in the market.
This information source has a good name.

Media Assurance Mechanisms: Current (1–7) –

The information provided in the source is current and up to date.

User Characteristics: Disposition to Trust [22] (1–7) –

It is easy for me to trust a person/thing.
I tend to trust a person/thing, even if I have little knowledge of it.
Trusting someone or something is not difficult.

User Characteristics: Perceived reputation [35] (1–7) – I believe this information source:

Is well known
Has a good reputation in the market
Has a reputation for being fair
Has a reputation for being consumer-oriented

References

1. Arora, R., Stoner, C., Arora, A.: Using framing and credibility to incorporate exercise and fitness in individuals' lifestyle. *J. Consum. Mark.* **23**(4), 199–207 (2006)
2. Bond, G.D.: Deception detection expertise. *Law Hum. Behav.* **32**(4), 339 (2008)

3. Brockner, J.: Making sense of procedural fairness: how high procedural fairness can reduce or heighten the influence of outcome favorability. *Acad. Manag. Rev.* **27**(1), 58–76 (2002)
4. Burgoon, J.K., Buller, D.B., Guerrero, L.K., Afifi, W.A., Feldman, C.M.: Interpersonal deception: XII. Information management dimensions underlying deceptive and truthful messages. *Commun. Monogr.* **63**(1), 50–69 (1996)
5. Cheung, C.M., Thadani, D.R.: The impact of electronic word-of-mouth communication: a literature analysis and integrative model. *Decis. Support Syst.* **54**(1), 461–470 (2012)
6. Chopra, S., Sodhi, M.S.: Managing risk to avoid supply-chain breakdown. *MIT Sloan Manag. Rev.* (Fall 2004) (2012)
7. Clark, J.K., Wegener, D.T., Habashi, M.M., Evans, A.T.: Source expertise and persuasion the effects of perceived opposition or support on message scrutiny. *Pers. Soc. Psychol. Bull.* **38**(1), 90–100 (2012)
8. Claybaugh, C.C., Haseman, W.D.: Understanding professional connections in linkedin—a question of trust. *J. Comput. Inf. Syst.* **54**(1) (2013)
9. Claybaugh, C.C., Srite, M.: Factors contributing to the information technology vendor-client relationship. *J. Inf. Technol. Theory Appl. (JITTA)* **10**(2), 3 (2009)
10. Clow, K.E., James, K.E., Kranenburg, K.E., Berry, C.T.: The relationship of the visual element of an advertisement to service quality expectation and source credibility. *J. Serv. Mark.* **20**(6), 404–411 (2006)
11. Colquitt, J.A., Scott, B.A., LePine, J.A.: Trust, trustworthiness, and trust propensity: a meta-analytic test of their unique relationships with risk taking and job performance. *J. Appl. Psychol.* **92**(4), 909 (2007)
12. Dowling, G.R., Staelin, R.: A model of perceived risk and intended risk-handling activity. *J. Consum. Res.* **21**(1), 119–134 (1994)
13. Erdem, T., Swait, J.: Brand equity as a signaling phenomenon. *J. Consum. Psychol.* **7**(2), 131–157 (1998)
14. Erdem, T., Swait, J., Valenzuela, A.: Brands as signals: a cross-country validation study. *J. Mark.* **70**(1), 34–49 (2006)
15. Fishbein, M., Ajzen, I.: *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.* Addison-Wesley, Reading (1975)
16. Fiske, S.T., Taylor, S.E.: *Social Cognition: From Brains to Culture.* Sage, Beverly Hills (2013)
17. Grazioli, S., Jarvenpaa, S.L.: Perils of Internet fraud: An empirical investigation of deception and trust with experienced Internet consumers. *IEEE Trans. Syst. Man Cyber. Part A Syst. Hum.* **30**(4), 395–410 (2000)
18. Hastak, M., Mazis, M.B.: Deception by implication: a typology of truthful but misleading advertising and labeling claims. *J. Public Policy Mark.* **30**(2), 157–167 (2011)
19. Herbig, P., Milewicz, J.: The relationship of reputation and credibility to brand success. *J. Consum. Mark.* **12**(4), 5–10 (1995)
20. Jarvenpaa, S.L., Tractinsky, N., Saarinen, L.: Consumer trust in an internet store: a cross-cultural validation. *J. Comput. Med. Commun.* **5**(2), 0–0 (1999)
21. Johnston, A., Warkentin, M.: The influence of perceived source credibility on end user attitudes and intentions to comply with recommended IT actions. In: Dwivedi, A., Clarke, S. (eds.) *End-User Computing, Development, and Software Engineering: New Challenges: New Challenges*, p. 312. Information Science Reference, Hershey (2012)
22. Kim, M., Ahn, J.: Comparison of trust sources of an online market-maker in the E-marketplace: buyer's and seller's perspectives. *J. Comput. Inf. Syst.* **47**(1), 84–94 (2006)
23. Ko, D.-G., Kirsch, L.J., King, W.R.: Antecedents of knowledge transfer from consultants to clients in enterprise system implementations. *MIS Q.* **29**(1), 59–85 (2005)

24. Kramer, R.M.: Trust and distrust in organizations: emerging perspectives, enduring questions. *Annu. Rev. Psychol.* **50**(1), 569–598 (1999)
25. Kuhn, G., Tatler, B.W., Findlay, J.M., Cole, G.G.: Misdirection in magic: implications for the relationship between eye gaze and attention. *Vis. Cogn.* **16**(2–3), 391–405 (2008)
26. Lafferty, B.A., Goldsmith, R.E.: How influential are corporate credibility and endorser attractiveness when innovators react to advertisements for a new high-technology product? *Corp. Reputation Manag.* **7**(1), 24–36 (2004)
27. Lafferty, B.A., Goldsmith, R.E., Newell, S.J.: The dual credibility model: the influence of corporate and endorser credibility on attitudes and purchase intentions. *J. Market. Theor. Pract.* **10**(3), 1–12 (2002)
28. Li, X., Hess, T.J., Valacich, J.S.: Why do we trust new technology? a study of initial trust formation with organizational information systems. *J. Strateg. Inf. Syst.* **17**(1), 39–71 (2008)
29. Metzger, M.J., Flanagin, A.J., Zwarun, L.: College student web use, perceptions of information credibility, and verification behavior. *Comput. Educ.* **41**(3), 271–290 (2003)
30. Oh, H., Jasper, C.R.: Processing of apparel advertisements: The extension of the elaboration likelihood model. *Clothing Text. Res. J.* **24**(1), 15–32 (2006)
31. Pornpitakpan, C.: The persuasiveness of source credibility: a critical review of five decades' evidence. *J. Appl. Soc. Psychol.* **34**(2), 243–281 (2004)
32. Priester, J.R., Petty, R.E.: Source attributions and persuasion: perceived honesty as a determinant of message scrutiny. *Pers. Soc. Psychol. Bull.* **21**(6), 637–654 (1995)
33. Sparks, J.R., Rapp, D.N.: Readers' reliance on source credibility in the service of comprehension. *J. Exp. Psychol. Learn. Mem. Cogn.* **37**(1), 230 (2011)
34. Teacy, W.L., Patel, J., Jennings, N.R., Luck, M.: Travos: Trust and reputation in the context of inaccurate information sources. *Auton. Agent. Multi-agent Syst.* **12**(2), 183–198 (2006)
35. Teo, T.S.H., Liu, J.: Consumer trust in e-commerce in the United States, Singapore and China. *Omega* **35**(1), 22–38 (2007)
36. Van Slyke, C., Shim, J.T., Johnson, R., Jiang, J.: Concern for information privacy and online consumer purchasing. *J. Assoc. Inf. Syst.* **7**(6), 415–444 (2006)
37. Xie, G.X., Boush, D.M.: How susceptible are consumers to deceptive advertising claims? a retrospective look at the experimental research literature. *Mark. Rev.* **11**(3), 293–314 (2011)
38. Westerman, D., Spence, P.R., Van Der Heide, B.: Social media as information source: recency of updates and credibility of Information. *J. Comput. Med. Commun.* **19**(2), 171–183 (2014)
39. Zinn, J. (ed.): *Social Theories of Risk and Uncertainty: an Introduction*, pp. 18–49. Blackwell Publishing, Oxford (2008)