Framing, intentions, and trust–choice incompatibility ☆

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Abstract

The present paper examines how framing of messages and the intentions inferred from different—positive vs. negative—framings, interact with the development of trust. Empirical evidence is presented showing that different, logically equivalent, frames are supposedly interpreted as implying different intentions. Next, the relationship between different frames (and the corresponding intentions reflected from these frames) and trust are explored. Finally, and most important, the relationship between the assessment of trust, inferred from different frames, and the corresponding choice behavior resulting from these frames, are investigated. Specifically, consider agents A and B offering to sell exactly the same commodity, except that one agent formulates it in a positive and the other in a negative frame. The different frames may lead to different assessments of the trustworthiness of the two agents. Following common wisdom, if agent A is trusted more than B, then one should prefer to conduct transactions with the former rather than with the latter agent. Several experiments are presented that are incompatible with this conjecture. For example, when faced with a choice between two butchers, whose ground beef is advertised as containing 25% fat (negative frame) or 75% lean (positive frame), respectively, most people have more trust in the former yet most indicate they would buy their meat from the latter butcher. This phenomenon, in which negative framing weighs more in trust assessments, and positive framing weighs more in choice, is labeled *trust–choice incompatibility*. The robustness of the phenomenon is further demonstrated in several experiments, and possible explanations for its occurrence are discussed.
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Trust, as noted by Elster (1989), "can be characterized as a social 'lubricant', without which the wheels of society would soon come to a standstill" (p. 252). Despite it's omnipresence and importance, trust remains to be associated with many interpretations often resulting in conceptual confusion (e.g., Blomqvist, 1997). The confusion stems, in part, from the fact that the meaning of trust, though mainly used to describe interpersonal relationships between individuals, has been extended

to other domains such as trust in institutions (e.g., Braithwaite & Levi, 1998), trust within and between organizations (e.g., Kramer & Cook, 2004), or trust in products and brand names. Clearly, these extensions do not always carry exactly the same meaning.

Trust can be established in at least two fundamentally different forms. One is to create safety mechanisms, or generate situations, leading to a structure that excludes any incentives for not honoring trust. For example, Keren and Raub (1993; Raub and Keren, 1993) have shown that, under certain circumstances, hostage posting (in terms of a deposit) can result in an incentive structure that will promote cooperative behavior. On the other hand, there are different ways of conduct by which one may signal a desire for cooperation (Bacharach & Gambetta, 2001) thus indirectly leading to the

development of trust. For instance, gifts play an important role as economic signals (Camerer, 1988) and serve as catalyst in the formation of trust. Generally, conveying cooperative intentions, assuming that they are perceived as credible, may serve as a building block in establishing trust. McCabe, Rigdon, and Smith (2003) employed what they termed an intention-based framework, to explain various experimental results obtained using the trust game which, they claim, can account for different experimental results.

Indeed, almost any interpretation of interpersonal trust comprises an implicit or explicit indication of intentions. Full trust contains the belief, or faith, that each side intends to behave or act in a manner that will promote, or at least be congruent with, the interests of the other (Ulmann-Margalit, 2002). Intentions, however, even if explicitly articulated, are unobservable and thus have to be "read" (Korniol, 1990), or inferred, from either the spoken (and written) word, or from other cues such as facial expressions (Van Lange & Kuhlman, 1994). In this context, different formulations or framings, may induce different perspectives leading to different interpretations of underlying intentions, which in turn may result in different degrees of trust. How do different frames convey different intentions?

It is not the purpose of the present paper to portray a theory of framing (see Frisch, 1993; Levin, Schneider, & Gaeth, 1998 for general discussion). Notwithstanding, it is essential to briefly explain how framing effects, in the present paper, are conceived. Specifically, framing is considered to be founded on the broad assumption of Grice's (1975, 1978) cooperative principle, according to which communication between speaker and listener is conducted such as to maximize the amount of common understanding between the two. This communication can be conceptualized as part of a hidden coordination game.[1] A coordination game implies that it is in the interest of every actor to anticipate the other's preferences in order to promote cooperation and maximize mutual beneficial outcomes (Colman, 1995). Coordination and mutual understanding are further explicated within a 'logic of conversation' framework (e.g., Grice, 1975, 1978; Schwartz, 1994) that centers on the communication between a speaker, who delivers a message, and a recipient (or listener) to whom the message is addressed. Following this perspective, a framing experiment is viewed as an interaction between the Experimenter, who is presumably in the speaker's role, and the participants who are placed in the role of the listener (recipient).

Mutual understanding between speaker and listener, given the cooperative principle, can be attained in many ways. Coordination and common comprehension can be realized through semantic interpretation based on tacit linguistic rules. It is assumed that underlying the interaction between speaker and listener is a shared common coding system, one that has both formal and explicit conventions, as well as informal tacit mutual understanding. Listeners are thus assumed to appropriately interpret the message underlying a word, or an utterance, that carry multiple meanings, or alternatively be able to discriminate between apparently equivalent expressions, that seem to carry an identical message (but in fact do not).

A listener is anticipated not just to decipher the specific meaning of a word or an utterance, but also infer what it conveys in a given context, namely what is implicated. Thus, a distinction can be made between the strict semantic meaning of a word or a sentence, and its pragmatic implications (Hilton, 1995; Schwartz, 1994). An excellent illustration of the inferential facet has been recently offered by McKenzie and Nelson (2003). They show that describing a glass as half empty is more likely to be envisaged as having been previously full than previously empty. Similarly, a half full glass is more likely to be envisaged as being originally empty. Supposedly, the descriptions "half-full" or "half-empty" do not trigger the same inferential processes because they are tacitly associated with different reference points (originally full or originally empty). Hence, as concluded by McKenzie and Nelson, although the two expressions are logically equivalent, they are not necessarily informationally equivalent.

The inferential facet, applies not only to message deciphering but is equally pertinent for assessing attributions about the speaker and her concealed intentions. In line with Clark and Schober's (1992), it is assumed here that communication cannot be solely understood on the basis of semantic interpretation. As these authors correctly noted, communication "has primarily to do with people and what they mean. It is essentially about speakers' intentions" (p. 15). These intentions are derived from inferential processes that follow, or are implied by, the initial semantic interpretation.

The present paper centers on framing effects, in particular what has been called attribute framing (Levin et al., 1998), obtained by employing equivalent options that are formulated in a negative or positive mode. Empirical evidence shows that valence framing (i.e., positive vs. negative descriptions of the same option) may have important consequences (e.g., Peeters & Czapinski, 1990; Teigen & Brun, 2002; Tversky & Kahneman, 1981). Whether negative or positive framing will be more effective would depend on the type of valence framing and the particular context. For instance, in attribute framing (Levin et al., 1998), positive frames

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[1] Lewis (1969) was the first to suggest the application of coordination games as a formal tool for the analysis of communication. Sally (2002) adopts coordination games for an insightful formal analysis of the communication process.

are evidently more effective. Thus, people prefer ground beef described in terms of its percent lean rather than its complementary percent fat (e.g., Johnson and Levin, 1985). Similarly, Sanford, Fay, Stewart, and Moxey (2002) have shown that 95% fat-free yogurt received higher ratings of health than yogurt containing 5% fat. On the other hand, in goal framing which entails enhancing a particular goal by either a positive (obtaining positive consequences) or a negative (avoiding negative consequences) frame, the latter may be more effective. For example, to encourage women to perform breast self-examination, the negative frame (women who do not do breast self-examination, have a decreased chance of finding a tumor at earlier, more treatable stages of the disease) is more effective than the comparable positive frame (Meyerowitz & Chaiken, 1987).

The studies reported in the present paper, show that positive and negative frames transmit different tacit information, not only regarding the nature and characteristics of the options under considerations, but also about the agents who employ these different frames and their presumed intentions. Because perceived intentions and trust are closely linked, the ''information leakage'' (McKenzie & Nelson, 2003) from negative and positive frames convey (different) cues regarding the agent's intentions, and in turn the extent to which the agent is trustworthy. A major claim of the present paper is that negative frames loom larger when formation of trust is under question. The fact that a speaker is willing to disclose not just positive but also negative undesired aspects, suggests that the speaker is sincere and honest, and thus trust deserving (Eagly, Wood, & Chaiken, 1978).

In sum, the purpose of the present paper is to examine how framing of messages interact, in subtle ways, with the development of trust (or mistrust). In particular, I first present empirical evidence showing that, logically equivalent, different frames are interpreted as implying different intentions. Next, the relationship between different framings and trust is investigated. Finally, and most importantly, the relationship between the assessment of trust, as inferred from positive or negative framing, and the corresponding choice behavior resulting from these frames, are investigated.

To illustrate, suppose that two agents, A and B, are offering the same option, except that each is formulating it differently, one in a positive and one in a negative frame. The different framings may lead to different assessments of the trustworthiness of the two agents. Common wisdom suggests that if one trusts agent A more than B, then one should also prefer to conduct transactions with agent A rather than with agent B. I present several experiments that are incompatible with this conjecture. For example, when faced with choosing between the ground beef of two butchers (Levin, 1987; Levin & Gaeth, 1988), one who advertises it as containing 25% fat meat (negative frame) and one who advertises it as containing 75% lean meat (positive frame), most people have more trust in the former yet most people would buy their meat from the latter butcher. This phenomenon, which is the focus of the present paper, is referred to as trust–choice incompatibility. Incompatibility, in the present context, should not necessarily be interpreted as a logical inconsistency. It mainly means the lack of compatibility (i.e., non-compatibility) implying a deficient fit between trust and choice which eventually signals an internal conflict.[2]

Trust–choice incompatibility is supposedly caused by the fact that, under most circumstances, negative frames exert larger influence in the context of trust development while positive frames are more persuasive in the context of choice. This conjecture is examined in several experiments that demonstrate trust–choice incompatibility in different contexts. The final discussion contains possible explanations of the phenomenon, and delineates the conditions under which it exhibits itself.

Experiment 1

Experiment 1 employed the well known framing paradigm in which ground beef can be described as containing 75% lean or, alternatively, as 25% fat meat (Levin, 1987; Levin & Gaeth, 1988). Although the two terms are logically equivalent, describing exactly the same sort of meat, they are not, what McKenzie and Nelson (2003) refer to as, informationally equivalent. A butcher who advertises his meat as 75% lean delivers his customers a slightly different message, and may thus be perceived as having different intentions, than his counterpart who advertises his meat as 25% fat. Specifically, by stating that the ground beef is 75% lean, the butcher may be highlighting the positive dimension, the one that the customer presumably wants to maximize. The butcher is thus signaling that he is aware of the customer's desire (i.e., as much lean as possible) and attempts to satisfy this need. The other butcher, who advertises his meat as 25% fat, is emphasizing the negative dimension thus indirectly signaling lack of concern of the customer's desires.

Consider a slightly different situation, in which one butcher advertises his beef as ''at least 75% lean'' whereas the other butcher advertises his beef as ''at most 25% fat''. As before, the two expressions are logically equivalent and hence interchangeable. However, compared with the previous case, the inferred intentions underlying these two expressions may have changed. The butcher who employs a positive frame, offering beef

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[2] There is a long tradition, in both cognition and decision making, where 'compatibility' is interpreted as meaning a fit or a match, and 'incompatibility' as the lack of it (Shafir, 1995).

that is at least 75% lean, is still exhibiting agreeable (encouraging) intentions for the same reasons mentioned above. However, unlike in the previous case, the butcher who employs the negative frame, offering beef that is at most 25% fat, is now signaling that he may be aware of the customer's concerns and is trying to satisfy them. Although articulating the negative attribute (i.e., fat), this butcher, by adding the qualification "at most", admits that he is aware of the undesirability of this unwanted attribute and signals that he attempts to minimize it, thus trying to meet the customer's wishes.

The above analysis leads to a straightforward testable prediction. On one hand, people are predicted to prefer ground beef described as 75% lean over ground beef described as 25% fat. On the other hand, this preference should be eliminated when adding the qualifiers 'at least' and 'at most' respectively. Experiment 1 was designed to test this prediction.

Method

Participants

Seventy six students from the university of Tilburg volunteered to participate in this and other decision-making related tasks, for which they were paid € 5.00 (approximately $5.00).

Stimuli and design

Participants were presented with a scenario in which they were asked to imagine preparing a dinner party for which a large quantity of ground beef was needed. Half of the participants were told that there were two butchers in their neighborhood, one who sold 75% lean ground beef (positive frame) and one who sold 25% fat ground beef (negative frame). The other half of the participants received the same cover story except of being told that one butcher's ground beef contained 'a minimum of 75% lean meat' (qualified positive frame) whereas the other's ground beef contained 'a maximum of 25% fat' (qualified negative frame). Thus, the two groups differed in whether the relative amount of lean (fat) meat was formulated in a precise or a qualified frame. All participants were asked to make a binary choice indicating whether they would rather buy from the butcher who stated the lean or the fat ingredient. Order of presenting the two options (Butcher employing positive or negative frame) from which participants had to choose was counterbalanced. The full text is presented in Appendix A.

Participants' task was to mark which of the two butchers they would buy from. Order of presentation of the two alternative responses (i.e., the butcher framing his ground beef as lean or as fat) was counter balanced. The experiment, like all other experiments reported below, was conducted on a laptop as one of several other decision making studies, and each participant responded according to his or her own pace.

Results and discussion

The results are portrayed in Table 1a. Across the two framing conditions, a majority of the participants (67%) chose for the butcher who stated the lean ingredient. This overall pattern is congruent with previous results showing more favorable associations with beef described in the positive rather than the negative frame (Levin, 1987; Levin & Gaeth, 1988). It is also compatible with the 'positivity bias' (e.g., Peeters and Czapinski, 1990) following which, other things being equal, people tend to describe objects or situations more in positive than in negative terms (supposedly, because evaluative positive cognitions are structurally more simple than negative ones). Generally, in attribute framing (Levin et al., 1998) like the lean/fat framing, positive descriptions are more appealing than negative ones.

Congruent with our prediction, the clear preference for the lean-ingredient formulation was mainly apparent in the precise but not in the qualified condition as indicated by the interaction between frame and proportion of participants opting for the lean or fat—ingredient formulation ($p < .01$ as assessed by a Fisher exact test). Indeed, in the qualified form, there was no clear preference for one frame or the other.

Participants exposed to the precise formulation, presumably preferred the 75% lean meat because this form of presentation suggests that the butcher is tuned to their concerns, and signals that he 'attempts' to satisfy their concern as much as he can. In contrast, the 25% fat frame may be seen odd (why should a butcher state the negative attribute) and leave the participants (or potential customers) wondering.[3]

In the qualified condition, the 'lean' framing again signals the same positive intentions that are further magnified by the 'minimal' qualifier. However, now, the negative frame also conveys an intentional message: by qualifying the amount of fat to be at most 25%, the butcher signals his awareness of this undesired aspect and explicitly conveys an attempt to minimize it. Thus, in the qualified condition both butchers are perceived as equally signaling their concern about the customer's preferences.

An alternative interpretation, not contradicting the one offered above, is based on McKenzie and Nelson's (2003) notion of information leakage. Specifically, 75% lean and 25% fat tacitly indicate different directions from the reference point. Because the reference point of 75% lean is positively formulated, it suggests that the actual value is more likely to be above rather than below the implicit reference point. In contrast, the reference point of 25% fat, because its negative nature, sug-

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[3] In addition, because losses loom larger than gains (Kahneman & Tversky, 1979), the perceived negative utility of 25% fat may be seen larger than the perceived positive utility of 75% lean meat.

Table 1
(a) Number of participants (percentages) in Experiment 1 opting for the butcher stating his ground beef in the positive (lean) or negative (fat) frame, in the precise and qualified modes, (b) number of participants (percentages) in Experiment 2 advising the butcher to advertise his ground beef by framing it positively (lean) or negatively (fat), in the precise and qualified modes

	Precise (Exact percentages)	Qualified (Min-max)	
(a)			
Positive frame (lean)	31 (82%)	20 (53%)	51 (67%)
Negative frame (fat)	7 (18%)	18 (47%)	25 (33%)
(b)			
Positive frame (lean)	30 (86%)	21 (60%)	51 (73%)
Negative frame (fat)	5 (14%)	14 (40%)	19 (27%)

gests that the actual value may even be worse than the stated 25% reference point. Adding the qualifiers ('at least' or 'at most') does not change the respective reference points, yet both conditions explicitly put it forward that the actual value, if at all, can only be more favorable. In other words, now both butchers suggest that the real value can be placed on the positive side of the reference point (more than 75% lean or less than 25% fat), thus making the two frames equally attractive.

The results of the qualified conditions are congruent with recent studies reported by Sanford et al. (2002). These authors propose that minor qualifications of quantity information induce different perspectives that influences subsequent processing. For instance, they show empirically that "few", "a few", and "not many", although denoting the same proportions, can in different contexts be associated with different perspectives and hence are not always interpreted as being the same.

The framing effect demonstrated in Experiment 1 can, according to the current framework, be accounted for by implicit understanding (signaling) between speaker (e.g., the butcher) and receiver (customer). Participants in this experiment were placed in the role of the receiver that is, they had to decide which meat to buy dependent on the sort of message (frame) they received. Underlying the present account is the assumption that speakers and listeners share the same code of signals. Consequently, it is expected that if participants were placed in the role of the speaker, their choice of which expression to employ would resemble participants' choice in the receiver role. Experiment 2 was designed to test the extent to which the tacit signals and intentions are commonly shared by speakers and receivers. To that end, participants in this experiment were presented with a cover story similar to the one used in Experiment 1 except that participants were now placed in the speaker's, rather than the receiver's, role.

Experiment 2

Method

Participants

Participants were 70 students from the university of Tilburg who volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $5.00).

Stimuli and design

Participants were presented with the following cover story:

"As you know, ground beef consists of lean and fat meat. The relative part of each of these components has to be specified. A butcher in your neighborhood asks your advice as to how he should best advertise his ground beef, which consists of 80% lean and 20% fat meat ['Minimum 80% lean and maximum 20% fat meat' in the other, 'qualified', condition]. *He wants to ensure that he will sell as much as possible ground beef.* He hesitates between the following two descriptions:

– [Minimum] 80% lean ground beef.
– [Maximum] 20% fat ground beef.

Which of the two formulations would you advise him to use?

Order of the two options (lean vs. fat frame) was counterbalanced. Half of the participants ($N = 35$) were allocated to the precise (20% vs. 80%) and the other half ($N = 35$) to the qualified condition ("minimum 80%" vs. "maximum 20%").

Results and discussion

The results are portrayed in Table 1b. Across the two experimental conditions, a majority of the participants (73%) 'advised' the use of the positive frame (lean ingredient formulation), compatible with the positivity bias and with participants' choices in Experiment 1. Further, as in the previous experiment, the preference for the lean-ingredient formulation was more apparent in the precise than in the qualified condition. As in Experiment 1, the interaction between frame and proportion of participants opting for the lean- or fat-ingredient formulation was significant ($p = .015$ as assessed by a two-tailed Fisher exact test).

Most important is the test of whether participants' pattern of choices in Experiment 1 was different from participants' pattern of advices in Experiment 2 (i.e.,

do the two matrices presented in Tables 1a and 1b, respectively, portray the same pattern). To this end, the combined data from both experiments were submitted to a Breslow–Day homogeneity of odds ratios test (Agresti, 1996). There was no significant difference between the pattern portrayed by Tables 1a and 1b ($\chi_1^2 < .10$; $p > .90$), suggesting that the response configuration in the two experiments was not statistically different. Evidently, speakers and receivers portray comparable and compatible response patterns suggesting that they share similar signaling codes.

Experiment 3

The analysis and interpretation of Experiments 1 and 2 are based on the tacit assumption of the cooperative principle (Grice, 1975, 1978). Following this principle, speaker and listener share some common implicit assumptions. The principle is based on mutual trust, and the corresponding understanding, that the speaker makes an attempt to choose those words and utterances (in the present context, choice of frame) that could be unequivocally interpreted, and would accurately reflect the speaker's thoughts and intentions.[4] What happens when this assumption is not satisfied? For example, would participants' pattern of choices in experiment 1 remain intact even if they had good reasons to doubt whether the cooperative principle holds? The following experiment was conducted to answer this question.

Method

Participants

Hundred and fifty six students from the university of Utrecht volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $5.00).

Stimuli and design

Participants were presented with a cover story similar to the one used in Experiment 1 (only the 'precise' condition was used), and were further divided into three groups. Participants in the first (baseline) condition were told that both butchers were known in the neighborhood to be trustworthy. In the second condition, participants were informed that both butchers were known to be not entirely trustworthy, and in the third condition they were told that one of the two butchers is not always trustworthy though his identity was unknown. Like in Experiment 1, participants were asked whether they would buy the 25% fat or 75% lean meat. As in the previous experiments, order of presentation of the two choice options was counter balanced.

Results and discussion

The results are presented in Table 2. Inspection of this Table, across the three conditions, reveals a strong preference (approximately 70% of the participants) for the butcher using the positive frame. Other things being equal, this 'positivity bias' is characteristic of many choice decisions, as is evident from the rest of the experiments described in this article.

Turning to the specific conditions, when both butchers were said to be trustworthy, the large majority (90%) prefer to purchase their ground beef from the butcher who framed his meat in terms of percentage lean. This result is very similar to the corresponding condition in Experiment 1 where, supposedly, participants assumed that both butchers are trustworthy, and consequently took the cooperative principle for granted. When this latter assumption is put into question, as was the case in the remaining two conditions, participants' responses change accordingly. When both butchers are said to be not trustworthy, the number of those preferring the lean meat butcher drops (67%) and is significantly lower ($p < .001$ by a Fisher exact test) than in the base-line condition. It declines further (to 51%) when only one butcher is trustworthy. Incidentally, this last result is compatible with normative prescriptions: since participants were not told who was the untrustworthy butcher, they could not make any use of the tacit signals embodied in the manner by which the two types of meat were described, and hence were simply responding randomly.

Experiment 3 demonstrates the possible interplay between trust (as, manipulated in the present experiment) and framing. In the present context, two main conclusions are to be drawn. First, unless having reasons to believe otherwise, speakers and listeners entertain mutual trust and accordingly adopt the cooperative principle in their communication. This conjecture is supported by the similarity in the pattern of responses in Experiment 1 (where no explicit mention is made regarding trustworthiness of the butchers) and that of Experiment 3 (where participants were explicitly informed that both butchers are trustworthy). Second, when reasons arise to suspect the other's trustworthiness and, in turn, the extent to which the cooperative principle is preserved, participants' responses change accordingly. Evidently, participants' responses in the two conditions in which trust could not be assumed, differed significantly from the situation where mutual trust was not questioned.

While trust (or distrust) plays an essential role in communication, it is not an all-or-none concept and can be experienced (and expressed) on different gradations. At one extreme we may have full trust

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[4] Incidentally, this assumption underlies most experimental settings, regarding the communication between experimenter and participants.

Table 2
Number of participants (percentage) in Experiment 3 choosing the butcher who used a positive (75% lean) or a negative (25% fat) frame, as a function of the assumed trustworthiness of the two butchers

Preference	Both butchers trustworthy	Both butchers not trustworthy	One (unknown) butcher trustworthy	Total
Positive frame (lean)	47 (90%)	35 (67%)	26 (51%)	109
Negative frame (fat)	5 (10%)	17 (33%)	25 (49%)	47

(the negation of which is not to trust), at the other extreme distrust, and different levels in between (See Ulmann-Margalit, 2002 for an insightful theoretical discussion of this continuum). Given that trust can be assessed on a relative scale, it should be possible to compare the relative trust accredited to different actors. The following experiment explores which agent (in the present experiment, which butcher) is more trusted depending on whether he employs a positive or a negative frame.

Experiment 4

Method

Participants

Hundred thirty one students from the university of Nimegen volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $5.50).

Design

All participants were presented with the same scenario employed in experiment 1. Again, half of the subjects were exposed to the precise formulation (75% lean vs. 25% fat) whereas the other half received the qualified formulation (min. 75% lean vs. max. 25% fat). The only difference, compared with Experiment 1, was that participants in the present experiment were asked to judge the trustworthiness of the two butchers. Half were asked who, of the two butchers, they would trust more, the other half who they would distrust more. In all conditions, order of the two response options was counterbalanced.

Results and discussion

The results are portrayed in Table 3. For both the precise and the qualified formulation conditions, there was no difference in the pattern of results between assessing trust or distrust. Therefore, these results were combined by translating the number who distrust the "fat" butcher as the number who trusted the "lean" butcher and vice versa.

The majority of the participants (73%) in the precise condition trusted more the butcher who used the negative frame, advertising his ground beef as

Table 3
Number (percentage) of participants in Experiment 4 who trust (distrust) the butcher, as a function of frame (positive vs. negative) and mode (precise vs. qualified probabilities)

	Trust	Distrust
(a) Exact proportions		
Negative—25% fat	23 (69.7%)[a]	8 (24.2%)
Positive—75% lean	10 (30.3%)	25 (75.8%)[a]
(b) Qualified proportions		
Negative—Max. 25% fat	20 (57.1%)[b]	14 (46.7%)
Positive—Min. 75% lean	15 (42.9%)	16 (53.3%)[b]

[a] Implying that 48 out of 66 (73%) trust more the "fat butcher".
[b] Implying that 36 out of 65 (55%) trust more the "fat butcher".

25% fat. The number of participants trusting this butcher was significantly larger than those trusting the butcher who employed the positive frame ($p < .001$ two sided exact binomial test). In the qualified condition, the number of participants trusting more the "fat" butcher was larger (55%) than those trusting the "lean" butcher, but this difference was not statistically significant ($p = .45$ two sided exact binomial test). The number of participants trusting the butcher who used the negative frame was significantly larger in the precise compared with the qualified condition ($p = .029$ by Fisher's exact test).

The results of Experiment 4 are, to some extent, at odds with those obtained in Experiment 1. Taken together, the two experiments suggest that most people trust more the butcher who declares his meat to contain 25% fat (negative frame), yet the majority chose to purchase the meat from the butcher who described it as 75% lean (positive frame). Following common wisdom, if agent A is trusted more than agent B then, other things being equal, one should prefer to conduct transactions with the former rather than the latter. The pattern of results from experiments 1 and 4 combined, which I labeled trust–choice incompatibility, are incongruent with this common wisdom.

Note, however, that the alleged incompatibility, is based on a between-subjects comparison since Experiments 1 and 4 employed different groups of participants. To test the validity and robustness of the observed trust–choice incompatibility, the following experiment employed a within-subjects design in which the same participants assessed who of the two butchers was more trustworthy as well as indicated from which butcher they were going to buy their meat.

Experiment 5

Participants

Hundred twenty seven students from the Free university of Amsterdam volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $5.50).

Design

All participants were presented with the same cover story used in Experiments 1 and 4. Participants were asked two questions, namely from which butcher, the one framing his ground beef as 25% fat or the one framing it as 75% lean, they would buy the ground beef (the qualified conditions used in experiments 1 and 4 were not repeated here). They were also asked to judge which of the two butchers they would trust more. The order of presenting the two questions (trust first vs. choice first), as well as the order by which the two options (butcher A or B), were presented was counterbalanced.

Results and discussion

The results are presented in Table 4. The most left 2 × 2 table portrays the response pattern of participants who first made their buying choice followed by trust judgment. Columns represent the trust decision and rows the buying decision [For instance, 20 participants trusted more the "lean" butcher and also said they would buy from the lean butcher (upper left cell); 26 participants trusted more the "fat" butcher but said they would buy from the lean butcher (upper right cell)]. Similarly, the middle 2 × 2 table portrays the response pattern of participants who first made the trust judgment followed by buying choice. A Breslow–Day homogeneity of odds ratios test (Agresti, 1996) showed no significant difference in the patterns of results of the two tables ($p = .33$). Because order of questions had no effect, the data from the two tables were combined and are presented in the right most 2 × 2 table.

Inspection of the combined table shows that 49 participants (39%) exhibit trust–choice incompatibility

in which choice behavior does not match trust assessments. The observed incompatibilities are not symmetrical: most of these incompatibilities (46 participants, or 36%) result from choosing to purchase from the "lean" butcher (positive frame) yet trusting more the "fat" butcher (negative frame). Only a negligible number of participants (3) have exhibited incompatibility in the other direction. This pattern was repeated in all the experiments described below. Hence all the analyses, and the corresponding discussions, in the present paper, are focused on incompatibilities resulting from trusting more the agent who employs negative framing, yet expressing a choice preference for the agent who employs positive framing (the other type of incompatibilities, that occur very rarely, are viewed as noise).

Experiment 5 has replicated the findings of Experiments 1 and 4, showing that trust –choice incompatibility is a sound finding observed in both a between and within-subjects design. A somewhat unpredicted finding was that order of questions (buying decision first, or trust assessment first) did not matter. It was expected that when trust was being evaluated first, it would prime participants so that they would decide to buy from the butcher they trusted more. Specifically, following common sense logic, if one trusts (for whatever reason) A more than B, she has, other things being equal, a better reason to buy from A rather than from B. The reverse reasoning that one buys from A and therefore has better reason to trust A is certainly odd. The fact that trust–choice incompatibility was observed, regardless of the order in which the trust and choice questions were presented, provides additional support for the robustness of the phenomenon.

Experiment 6

To what extent are people aware of the phenomenon of trust–choice incompatibility. More specifically, do people grasp that positive framing is more effective for influencing choice behavior whereas negative framing is more effective in establishing trust? This question is reminiscent of the issues raised in Experiment 2 which examined the tacit understanding between speakers and listeners. The present study was designed to examine this tacit speaker–listener understanding with regard to both choice and trust.

Participants

One hundred and fifty eight students from the University of Nijmegen volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $6.00).

Table 4
Number of participants in Experiment 5 as a function of trust [trusting the butcher who employs a positive (lean) or negative (fat) frame] and purchasing choice (lean or fat)

Choice	Trust						
	Choice first		Trust first		Combined		
	Lean	Fat	Lean	Fat	Lean	Fat	
Lean	20	26	20	20	40	46	86
Fat	2	16	1	22	3	38	41
					43	84	127

Design and procedure

Using a methodology similar to that used in experiment 2, participants in the present experiment were placed in the speaker's role. Specifically, they were exposed to a cover story describing a butcher in their neighborhood who asked their recommendation of how best to state his ground beef (i.e., as 25% fat or as 75% lean). Half the participants were told that the butcher asked their advice so he can sell as much as possible—maximize-sales condition. This condition is similar to the precise condition in Experiment 2. The other half were told that the butcher asked their advice so that he will be perceived as trustful as possible—maximize-trust condition. Both groups, after responding to the initial task, were then asked (on a new screen) to indicate which butcher they would buy from (second task). In both tasks, the order of the two options was counterbalanced.

Results and discussion

The results are depicted in Table 5, the left and right hand matrix summarizing responses in the maximize-sales and maximize-trust conditions, respectively. Columns in each matrix represent participants advise (first task) in the respective conditions, and rows represent purchasing decision (second task).

Responses in the maximize-sales condition are clear cut and compatible with the previous results. With very few exceptions, most participants (73 out of 77 or 95%) recommend the positive (lean) frame and, congruent with their recommendation, most (again, 95%) indicate their preference to purchase from the butcher who used this frame (the two observations in which the frame advice and the buying decision do not match should be considered as noise).

Responses in the maximize-trust condition show a somewhat different pattern. A majority (58 out of 81 or 72%) recommends the positive frame and the large majority (72 out of 81 or 89%) prefers to purchase from the butcher who used this frame. However, unlike in the maximize-choice condition, there is a substantial minority (20 out of 81 or 25%) who exhibit trust-choice incompatibility in that they recommend the negative frame yet prefer to buy the lean meat. Indeed, the pattern of results in the maximize-trust condition (right hand matrix) was significantly different from the pattern of results in the maximize sales condition (left hand matrix), as indicated by a Breslow–Day test ($\chi^2_{(1)} = 16.1$; $p < .0001$).

The results of the maximize-sales condition unequivocally show that participants are aware of the effectiveness of the positive frame in influencing choice behavior. Thus, taken together, experiments 5 and 6 indicate a high correspondence between participants (i.e., speakers and listeners) with regard to choice (buying) behavior, congruent with the results obtained in Experiments 1 and 2. This mutual understanding is, however, much weaker with regard to maximizing trust. Specifically, placed in the role of the receiver, most participants in Experiment 5 (86 out of 127 or 68%) chose the lean (positive frame) meat yet, at the same time, trusted more (84 out of 127 or 66%) the butcher employing the negative frame. However, In the maximize-trust condition of Experiment 6 (where participants are placed in the speaker's role), the majority both prefers to buy from the butcher who employs the positive frame, and the majority also has more trust in this butcher. Put differently, most participants in experiment 6, who were in the role of the speaker, are not sufficiently tuned to the effect of negative framing on trust. Although the pattern of results in the maximize-sales and maximize-trust are clearly different, the correspondence in mutual understanding between speakers and receivers was much stronger in the former than in the latter condition. Evidently, it is shared knowledge that positive framing is more powerful (than negative frames) in influencing choice behavior. It is less common knowledge that negative framing may be more effective in building trust, probably because it is incongruent with the strong belief in positive framing associated with choice behavior. This point is further elaborated on in the final discussion.

The experiments presented so far portray two (not unrelated) phenomena. First, that negative frames are more efficient in developing trust whereas positive frames are more powerful in influencing choice behavior. Second, the above two tendencies frequently result in trust–choice incompatibility.

Why is negative framing efficient in raising the feeling of trust? A possible explanation, proposed earlier, is that the mere disclosure of some unwanted aspects suggests

Table 5
Number of participants in Experiment 6 recommending the use of the "fat" or "lean" frame (columns), and their corresponding buying decision (rows), as a function of goal instruction (maximize sales vs. maximize trust)

Frame advice	Maximize sales				Maximize trust		
	Positive (lean)	Negative (fat)			Positive (lean)	Negative (fat)	
Buy lean	72	1	73		52	20	72
Buy fat	1	3	4		6	3	9
	73	4	77		58	23	81

that the agent behind the message is honest and trust-worthy. Following this explanation, strict negative framing is not a necessary requirement for the establishment of trust. Positive framing may suffice as long as some negative, or less desired, aspects are also explicitly mentioned. The following experiment examines this conjecture, using an entirely different cover story, and at the same time tests the robustness of trust–choice incompatibility.

Experiment 7

Method

Participants

One hundred eighty four students from the University of Tilburg volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $6.00).

Design and procedure

The design was similar to that used in Experiment 5 except for the cover story. Participants were presented with a scenario about a personnel officer who had to choose between two candidates, based on letters of recommendation from their respective previous employers (otherwise, the two candidates were said to be equally attractive).They were given a summary of the ratings of the two candidates on different attributes such as responsibility, creativity, social skills, etc. One candidate, Peter, was rated "excellent" by his former employer on all the attributes except for one attribute on which he was rated "very good". The other candidate, John, was also rated high by his previous employer, but his ratings were not as good as those of Peter. Participants were asked to indicate the candidate they would have chosen and whose letter of recommendation they would trust more. The exact text is given in Appendix A.

The present cover story differs from the butcher scenario in several respects. In particular, both candidates are described positively, thus both are portrayed in a positive frame. Further, the two options (i.e., the two candidates, Peter and John) are not equivalent as in the butcher scenario (75% lean vs. 25% fat). Notwithstanding, one can inquire which of the two candidates is preferred (similar to asking which of the two types of ground beef is preferred), and which letter of recommendation is trusted more (similar to asking which butcher is trusted more). Trust-choice incompatibility would be observed in those cases in which choice of candidate and the respective trust in the recommendation of this candidate would be incongruent.

Half of the participants (choice first) chose their preferred candidate and subsequently, on a separate screen, judged which letter they trusted more. The other half (Trust first) performed the two tasks in the reversed order.

Results and discussion

Participants' preferences for each candidate and their trust in the corresponding recommendation are given in Table 6. The left hand matrix portrays the data for the 'choice first' condition, and the right hand matrix portrays the data for the 'trust first' condition. Because the pattern of results in the two matrices differ significantly ($p = .002$ by a Breslow & Day test), the two data sets were analyzed separately.

As expected, John's letter which indicated several relative minor weaknesses, was trusted more than Peter's letter, regardless of condition. As can be seen from Table 6, 72% (54 out of 75) and 75% (55 out of 73) of the participants in the 'choice first' and 'trust first' conditions, respectively, had more trust in John's letter. Evidently, trust is enhanced not necessarily by mere negative framing, but by disclosing some undesirable (relative negative) aspects, which apparently suggests honesty and thus evokes trust.

A majority of the participants (48 out of 75 or 64%) in the 'choice first' condition (left hand matrix), exhibit trust–choice incompatibility. Congruent with the previous experiments, almost all of these incompatibilities (43 out of 75 or 57% of the total number of participants) result from choosing the more attractive candidate yet trusting more the recommendation of the less attractive candidate. A somewhat similar pattern of results occurs in the 'trust first' condition (right hand matrix), except that the effect of trust–choice incompatibility is much weaker. Indeed, the proportion of incompatibilities in the 'trust first' condition (16 out of 73, or 22% of the total) was significantly lower ($p < .001$) than the comparable proportion in the 'choice first' condition (43 out of 75 or 57%).[5] The most likely explanation for this difference is that when trust judgments precede choice, the mere assessment of trust may prime people to attend to the possible relationship between trust and the subsequent choice, thus reducing the number of incompatible assessments. This account is congruent with the earlier assertion, according to which the 'natural' order is that trust follows choice rather than vice versa. Hence, having the trust question first, has a stronger effect in priming participants to make their choice congruent with their trust evaluation.

Unlike the previous experiments, the present one contains two options (i.e., the two candidates) that are not identical. Choosing, in this case, one candidate while trusting more the recommendation letter of the other,

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[5] This large difference is the main reason why the pattern of the two matrices differ as indicated by the Breslow & Day test.

Table 6
Number of participants in Experiment 7 choosing each candidate and their trust in the corresponding letter of recommendation

Choice	(a) Choice first **Trust**			(b) Trust first **Trust**		
	Peter	John		Peter	John	
Peter	16	43	59	15	16	31
John	5	11	16	3	39	42
	21	54	75	18	55	73

(a) Choice of Candidate was followed by trust in recommendation letter. (b) Trust in recommendation letter was followed by choice of candidate.

should not necessarily be interpreted as incoherent behavior. In the tradeoff between the candidates' quality and description reliability, the former attribute may simply be viewed as more prominent. However, consistent with the previous experiments, the tradeoff between these two dimensions is strongly dependent on the order of questions. When choice precedes the judgment of trust, more than half of the participants exhibit trust–choice incompatibility. The effect is even more overwhelming than in the previous (butchers) context. In contrast, when trust is evaluated first, the effect is strongly reduced, though clearly does not vanish. Supposedly, when the judgment of trust comes first, it captures attention indirectly reminding one that trust is relevant for the subsequent choice, and should be compatible with it (as asserted by what I termed 'common sense wisdom').

Are there any conditions in which the relationship between trust and choice behavior are, naturally, so salient that trust–choice incompatibility will be precluded (and thus no priming of the relation between trust and choice would be required)? The following experiment was designed to test the possibility of such a context.

Experiment 8

Rightly or wrongly, some professions are perceived to be associated with more trustworthy people than other. A judge, for instance, will usually be considered more trustworthy than a cab driver and, similarly, a nurse will usually be considered more trustworthy than a plumber. The trustworthiness of merchants is often questioned supposedly, because their interests are diametrically opposed to those of their clients. In particular, second hand car dealers have a notoriously low image of trustworthiness. The present experiment employed a cover story in which two car dealers are involved. The design was similar to that used in Experiment 5. It was predicted that, unlike in Experiment 5, because of the heightened sensitivity to the trust (or distrust) associated with second hand car dealers, the number of participants exhibiting trust–choice incompatibility will be drastically reduced. Because trust in this case is naturally (and immediately) invoked by the stimuli (i.e., car-dealers), and thus dominates the scene, it was predicted that order of questions (trust evaluation first or choice first) would have no effect.

Method

Participants

One hundred ninety one students from the University of Utrecht volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $6.00).

Design and procedure

Participants were exposed to a cover story in which they were looking for a second hand car. Two garages offered exactly the same car. Garage A, using a positive frame, states that (more than) 90% of its cars do not need repairs during the first 18 months after a car is sold. Garage B, using a negative frame, states that (less than) 10% of its cars need repairs during the first 18 months after a car is sold. Participants were asked to indicate which garage they would prefer to buy from and which garage they would trust more. The full text scenario is given in Appendix A.

Approximately half of the participants were exposed to a precise formulation condition (90% vs. 10%), the other half to a qualified formulation condition (more than 90% vs. less than 10%). Within each of the two conditions, half of the participants responded first to the choice question (from which dealer would you buy the car) and subsequently to the trust question which appeared on the following screen. The other half responded to the two questions in a reversed order. The experiment thus consisted of a 2 (precise vs. qualified) × 2 (order of questions) between-subjects design.

Results and discussion

The number of participants who preferred the dealer associated with the positive or negative frame and the one they correspondingly trusted more, is given in Table 7. The results for the two conditions of exact and qualified proportions were analyzed separately.

Exact proportions: There was no difference in the pattern of results between participants who first responded to the choice question followed by the trust assessment, and those who responded in the reversed order (the difference between the left side and middle matrix was not significant as indicated by a Breslow–Day test, $p = .09$) and hence the results were combined (right hand table). Note, however, that the number of trust-choice incompatibilities tended to be higher in the choice first (7 out of 45) compared with the trust first (2 out of 49) conditions (this order effect is further discussed in the final discussion).

Table 7

Number of participants in Experiment 8 who buy (rows) from the dealer employing a negative (positive) frame, and their corresponding trust (columns) judgments

Choice	Choice first Trust			Trust first Trust			Combined Trust		
	Pos.	Neg.		Pos.	Neg.		Pos.	Neg.	
(a) Exact proportions									
Pos.	16	7	23	21	2	23	37	9	46
Neg.	1	21	22	0	26	26	1	47	48
	17	28	45	21	28	49	38	56	94
(b) Qualified proportions									
Pos.	20	4	24	26	0	26	46	4	50
Neg.	1	20	21	0	26	26	1	46	47
	21	24	45	26	26	52	47	50	97

Note: Pos. stands for the dealer using the positive 90% frame; Neg. stands for the dealer using the negative 10% frame.

Most important, the number of trust–choice incompatibilities, compared to the previous experiments, was drastically reduced and was close to zero. There was a large, and statistically highly significant ($p < .0001$), difference between the total number of incompatibilities in the present experiment (9 out of 94, or 9.6%), compared with Experiment 5 (45 out of 127 or 36.2%).

Qualified proportions: There was no order effect of questions and hence the results were combined (right hand matrix). The number of incompatibilities was negligible (4 out of 97 or 4%), and smaller than in the exact proportions condition, though the difference was not statistically significant.

The results are consistent with our expectation: in a context where trust initially plays a sensitive role, people regard trust as an essential guideline for their choice behavior. Hence, in the present experiment, regardless of the presentation mode (precise or qualified proportions), participants were remarkably consistent with only very few exhibiting trust – choice incompatibility. It is also important to note that in all conditions, the number of participants who prefer and trust the dealer using the positive or negative frame, was approximately the same. Supposedly, when trust is already questioned at an initial stage, as seems to be the case with second hand car dealers, the cues inferred from different framings and shown to be so robust in previous contexts, tend to loose much of their power.

Experiment 8 employed a context that was sensitive to trust from the beginning. It was predicted, and confirmed, that under these circumstances, trust and choice behavior would be highly compatible. It is possible, however, that trust in experiment 8 was evoked because the value under consideration, i.e., a car, is too high for trust to be ignored. In other words, one may hypothesize that any transaction involving high values would automatically reflect on trust, and under such circumstances people will make sure that their trust assessments and choice behavior would be congruent. Experiment 9 was designed to test this simple explanation by employ-

ing an entirely different context yet retaining in the cover story a high value commodity.

Experiment 9

Method

Participants

One hundred forty seven students from the University of Tilburg volunteered to participate in this and other decision-making related tasks, for which they were paid 5.00 Euros (approximately $6.00).

Design and procedure

The experimental design was identical to that used in Experiment 8 except that the cover story described two watchmakers who sell expensive second hand watches.

Results and discussion

The results are portrayed in Table 8. Inspection of the results reveals a clear pattern regardless of whether exact or qualified proportions are being used. First, there is a substantial number of trust–choice incompatibilities when choice precedes trust evaluation (14 out of 39 [36%] and 10 out of 36 [27.8%] in the exact and qualified proportions conditions, respectively), compared with a negligible number of incompatibilities when trust evaluation precedes choice (3 out of 38 [8%] and 1 out of 34 [3%] in the exact and qualified proportions conditions, respectively). The difference in proportion of incompatibilities when choice precedes trust evaluation compared to the reversed order is highly significant ($p < .005$) in both the exact and the qualified conditions. This difference was also observed in the previous experiments, and is further discussed in the final discussion.

Most important is the comparison in the proportion of trust–choice incompatibilities in the present experiment (watchmakers context) with that of the previous

Table 8
Number of participants in Experiment 9 who buy (rows) from the watch maker employing a negative (positive) frame, and their corresponding trust (columns) judgments

Choice	Choice first Trust			Trust first Trust			Combined Trust		
	Pos.	Neg.		Pos.	Neg.		Pos.	Neg.	
(a) Exact proportions									
Pos.	15	14	29	19	3	22	34	17	51
Neg.	1	9	10	1	15	16	2	24	26
	16	23	39	20	18	38	36	41	77
(b) Qualified proportions									
Pos.	17	10	27	15	1	16	32	11	43
Neg.	1	8	9	0	18	18	1	26	27
	18	18	36	15	19	34	33	37	70

Note: Pos. stands for the watchmaker using the positive 90% frame; Neg. stands for the dealer using the negative 10% frame.

experiment (car dealers context). Using the combined data of both experiments 8 and 9, there was a significant larger proportion of trust–choice incompatibilities in the watch maker (experiment 9) than in the car dealer (Experiment 8) context. The difference in both the exact (17 out of 77 compared with 9 out of 94) and the qualified (11 out of 70 compared with 4 out of 97) conditions, was statistically significant ($p < .01$ in both cases).These results rule out the simple explanation (proposed to account for the results of Experiment 8) that trust-choice incompatibilities will vanish whenever a high value transaction is involved. Evidently, in the watchmaker context, despite the high value commodities, the proportion of trust–choice incompatibilities was high and comparable with previous experiments (except, experiment 8).

General discussion

The present article examines the influence of positive and negative framing on choice decisions and the construction of trust. The empirical evidence presented in this paper leads to two main conclusions. First, other things being equal, positive framing often seems to be the default mode for choice persuasion. Yet, the superiority of positive frames can be changed by minor modifications, adding qualifiers such as "at least" and "at most". These qualifiers may alter the reference point location or the direction in which an option is assessed relative to a reference point, and accordingly effect people's decisions. Second, and more important, it was shown that positive and negative framing differentially effects trust assessments and choice behavior, often leading to a dilemma reflected in what was termed trust–choice incompatibility.

Evidently, frames that are seemingly equivalent may nevertheless convey, or leak (McKenzie & Nelson, 2003), different information, that differentially effect both choice behavior and the formation of trust. It is imperative to note that framing, in the present paper, is conceived differently from the way it has originally been interpreted by Tversky and Kahneman (1981). Specifically, according to the view adopted in the present article, framing effects do not necessarily indicate inconsistencies. On the contrary, because different frames transmit different messages, they require different responses. Following this interpretation, inconsistencies would be established if one could show the same (rather than different!) response pattern to two frames that carry different information.

The focus of the present paper is on the relationship between choice decisions and trust. Common sense wisdom suggests a direct link between amount of trust and the corresponding choice behavior. It is usually assumed that trust (regardless of the manner by which it has been formed) is an important factor in determining choice behavior. If one trusts agent A more than agent B then, other things being equal, it should also be reflected in her choices. Hence, If you trust butcher A more than B, then it would be expected that you indeed purchase your ground beef from A rather than from B. Several experiments, reported in this paper, have shown that a sizeable number of participants deviate from the above reasoning and exhibit trust–choice incompatibility. The alleged incompatibility is at odds not only with what I referred to as the common sense wisdom, but also with a large body of research showing that high credibility sources are typically more persuasive than low credibility sources. (e.g., Petty & Wegener, 1998). Assuming that trust and credibility are closely linked, one would expect the more credible and trustful agent to exert more influence regarding choice behavior. Evidently, the present research demonstrates that this is not always the case.

Table 9 portrays the proportions of incompatibilities (and corresponding confidence intervals) in the appropriate experiments. As can be seen, in most conditions (exceptions are discussed below) there is a considerable

Table 9
Proportions (and corresponding confidence intervals) of participants exhibiting trust-choice incompatibility, in the different conditions

Experiment*	Context	Condition	N	P	95% Confidence interval
5	Butcher	Choice first	64	.406	.294–.529
5	Butcher	Trust first	63	.317	.215–.441
5	Butcher	Combined	127	.362	.284–.449
6	Butcher	Max. sales	77	.013	0–.077
6	Butcher	Max. Trust	81	.247	.165–.352
7	Candidates	Choice first	75	.573	.460–.679
7	Candidates	Trust first	73	.219	.139–.328
8E	Car dealers	Choice first	45	.156	.074–.291
8E	Car dealers	Trust first	49	.041	.004–.145
8E	Car dealers	Combined	94	.096	.049–.174
8Q	Car dealers	Choice first	45	.089	.030–.213
8Q	Car dealers	Trust first	52	.0	.000–.082
8Q	Car dealers	Combined	97	.041	.013–.105
9E	Watch makers	Choice first	39	.359	.227–.516
9E	Watch makers	Trust first	38	.079	.020–.215
9E	Watch makers	Combined	77	.221	.142–.326
9Q	Watch makers	Choice first	36	.278	.157–.441
9Q	Watch makers	Trust first	34	.029	.000–.162
9Q	Watch makers	Combined	70	.157	.088–.262

E, Conditions employing exact probabilities. Q, Conditions employing qualified probabilities.

number of trust- choice incompatibilities. How can we account for this lack of compatibility between trust and the corresponding choice?

A possible explanation is based on the conjecture that choice decisions on one hand, and the formation of trust on the other hand, are not equally sensitive to positive and negative frames. Specifically, other things being equal, it is proposed that: (a) choice decisions are more naturally responsive to positive frames, and (b) The formation of trust is more sensitive to negative frames. In the following two sections, I elaborate on these two components.

Choice and positive framing: In all the applicable experiments, there was a solid preference for the option that was framed positively. Combining the data across all the relevant experiments (i.e., experiments 1, 2, 5, and 9),[6] there was a clear preference of choice (63.1%) for the positively framed option. This finding holds for both the exact and qualified proportions conditions, though the tendency to prefer the positively framed option was significantly ($p < .001$) more pronounced in the exact (74.6%) than in the qualified (58.7%) conditions. Summarizing these results two conclusions emerge: (a) other things being equal, positive frames seem to "sell" better, and are more persuasive, than negative frames (experiments 1, 2 and 6 suggest that this is common knowledge among speakers and listeners alike). (b) This positivity bias is strongly reduced (though not eliminated) with qualified proportions.

The dominance of positive framing, also referred to as the positivity bias (Peters and Czapinski, 1990), has been observed by other researchers in similar and related contexts (e.g., Teigen & Brun, 2002). There are several possible accounts for the positivity bias. Peters and Czapinski (1990) propose a cognitive explanation following which positive cognitions are structurally simpler and facilitate internal representations. The appeal of the positive mode, according to these authors, also stems from the fact that positive formulations display unconditional optimism. Finally, the positivity bias may simply be explained by noting that, ultimately, what initially drives a choice are the positive rather than negative characteristics. For instance, one chooses a candidate for a particular position because she presumably (positively) fulfills the major job requirements. This does not mean that negative aspects do not play a role. One may, at the end, decline to choose a candidate because of certain undesired (negative) qualifications. However, the negative qualifications are not the ultimate goal for choosing but rather for not choosing (i.e., rejecting).

Trust and negative framing: Trust, as mentioned already, is based on the mutual understanding of common interests, and the shared belief that each side will behave accordingly. These common interests are sometimes structurally built in the situation. Nonetheless, in most situations trust is, at least partly, also formed on the basis of considerations other than payoffs and their structure, what Bacharach and Gambetta (2001) have termed "Trust-warranting properties". There are many such properties that would increase the likelihood for trusting one such as common values held, perceived honesty, benevolence, cultural dispositions, to mention just a few. Bacharach and Gambetta (2001) noticed that

[6] Experiment 6 was not included because the options (candidates) were not equivalent. Experiment 8 was not included because this is the exceptional context in which, due to the initial lack of trust, the communication rules may break.

many of these trust warranting properties are unobservable and are implied through signaling and implicit inferences. The present paper examined a particular type of signaling, attained by means of negative framing, that effects the formation of trust.

The empirical evidence, reported in this article, clearly shows that trust is more likely to be afforded to the agent (and option) associated with the negative framing. Combining the data across all the relevant experiments (i.e., experiments (4, 5, and 9),[7] there was a clear preference (60.1%) to trust more the negatively framed option. This preference is apparent in both the exact and the qualified proportions conditions, though the tendency is significantly stronger ($p < .01$) in the exact (62.3%) than in the qualified (54.3%) conditions. In a similar vain, in experiment 7, the relatively more moderate letter of recommendation evoked more trust among the majority of the participants (109 out of 148, or 73.6%) compared with the stronger letter of recommendation. It is indeed in this case, of the letter of recommendation, where the advantages of negative framing (more precisely, the tuning down of positivity) for the establishment of trust, are most transparent. Clearly, both candidates in Experiment 7 were portrayed as outstanding, except that because they were presented in a joint rather than a separate mode (Hsee, 1996), one of them was seen, comparatively, as less attractive. Yet, it is exactly because the letter acknowledged that this candidate had also some less than perfect attributes, that participants indicated more trust in this letter. Similarly, the butcher who employed the negative frame and stated his ground beef to consist of 25% fat, admits that his meat is not perfect.

Admitting that an option has some weakness and is not perfect, presumably makes it less attractive yet, simultaneously, causes the information to be evaluated as more realistic and thus more trustful. As was shown, people are aware of the fact that, in advancing their interests, positive framing is more effective in terms of casting influence. Therefore, using a negative frame, which is counter productive in terms of persuasion, signals an intention of being concerned not just about one's own interests, but for the other party as well. The very fact that one is willing to expose, or highlight, some less desired (negative) aspects offers reasons for trust. Hence negative framing is an effective tool for inspiring trust.

Following the above analysis, choice (compared to trust) looms more in positive frames, and trust (compared to choice) looms more in negative frames. This may lead to an internal conflict resulting in what has been termed here as trust–choice incompatibility. An overview of the proportion of incompatibilities observed in the different conditions (Table 9) leads to two main conclusions.

First, all experiments except Experiment 8 (car dealer context), exhibit a sizeable and significant number of trust–choice incompatibilities thus reflecting the conflicting messages underlying positive and negative frames. Note that, as suggested by the results of Experiment 6, in which participants were placed in the role of the speaker, people clearly know that positive framing is more effective in influencing choice behavior and, though to a much lesser extent, that negative framing is supposedly more effective in establishing trust.

Second, participants, behavior is to some extent congruent with the common wisdom, mentioned earlier, following which trust precedes choice and subsequently effects it. According to this common wisdom, it is assumed that the relation between trust and choice is a-symmetrical: it is more natural to think about trust formation which, subsequently, effects choice (e.g., I trust more butcher A, therefore I will buy from that butcher), than the reversed order (I buy from butcher A; therefore, I am going to trust this butcher). According to this reasoning, other things being equal, one would predict fewer trust–choice incompatibilities when trust precedes choice than vice versa. Indeed, inspection of Table 9 unequivocally substantiates this prediction. We conducted a Fisher exact test on the order variable (i.e., making choice first or assessing trust first) for each of the relevant studies (Experiments 5, 7, 8, and 9). Combining these results and applying the inverse normal method (Hodges & Olkin, 1985) yielded a highly significant result ($Z = 5.63$; $p < .00001$).

The conclusion from the above analysis suggests, unambiguously, that positive frames are more influential for choice decisions whereas negative frames are more influential for establishing trust. This state of affairs implies a possible conflict resulting in what was termed trust–choice incompatibility. I suggest that the common wisdom, according to which trust and choice should go together, though shared by most people, is not realized under all circumstances and is conditional upon the situation. Specifically, while trust is an indispensable component of our daily life, it is not consistently (and continuously) raised in our awareness. Unless there is a reason, or unless primed in one way or the other, the question of trust remains in a dormant state. In most situations, and in most of our daily social encounters, as long as the assessed risk is sufficiently small, we tend to assume trust by default. Thus, when we enter a butcher's store, or for this purpose any store, we do not ask ourselves whether this butcher is trustworthy. Hence, trust evaluations and choice decisions are, in practice, frequently unconnected. It is under such circumstances, given that trust evaluation is more sensitive to negative framing and choice decisions more sensitive to positive

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[7] Experiments 6 and 8 were not included for the same reasons mentioned in the previous footnote.

framing, that trust–choice incompatibilities can, and in fact do, occur.[8]

Incompatibility between trust and choice may be reduced, or completely eliminated, when trust is activated in advance, prior to the decision choice. There are situations and conditions in which people have learned that trust is essential and has to be secured. For instance, car dealers were chosen for Experiment 8 because buying a second hand car automatically calls for caution and requires initial trust in the seller, before a choice can be made. What exactly are the circumstances and conditions under which trust is automatically primed and highlighted is an important question, but one that is beyond the scope of the present article.

The question whether positive or negative framing is more effective is not new and one that does not have a clear cut answer. The tacit information, or message, contained in a positive or negative frame, depends on the particular circumstances, context, and type of framing. For instance, Shiv, Edell, & Payne (1997, 2004) studied the effects of negative and positive framing of ad claims on consumers' choices and attitudes. The framing manipulation they used, however, was very different from the one used in the present studies. Specifically, they focused on message framing as a tactic, and examined whether positive (i.e., highlighting the positive aspects of the ad sponsor's brand) or negative (i.e., highlighting the negative aspects of a competitive brand) advertising, would exert more effect on consumers' final choice. Their main claim was that negative framing is more effective when the processing of an ad is fast and shallow, yet, when ad processing is deep and extensive, the advantage of the negative frame may be attenuated or even reversed. They explain that extensive processing, before making brand choice, would include assessment of the persuasion tactics. Because people perceive negative advertising as inappropriate, unfair tactics, the effectiveness of the negative framing will decrease or even be reversed. This account is congruent with the findings reported in the present paper of trust–choice incompatibility and the explanation I offered above. Specifically, a description of the other (i.e., the competitor) in negative terms, is considered unfair and indecent, consequently discounting the reliability of the message source (the speaker). Conversely, an agent exposing some negative aspects of a product he is trying to advance, (e.g., a butcher stating his goundbeef as consisting of 25%

fat), revealing some weakness, may enjoy the opposite effect and be viewed (by the listener) as being reliable and thus more trustworthy.

In sum, positive and negative frames transmit tacitly different messages, under different circumstances. A message, whether positively or negatively framed, consists of two components: one, explicit, containing direct open information with a specific content, often (but not always) trying to persuade the listener regarding a particular course of action (e.g., purchase this ground beef). Second, a message contains implicit information regarding the reliability and trustworthiness of the first component. As demonstrated by the experiments described above, negative framing (compared to positive) is more informative with regard to the second component. Trust and reliability of a message are getting through more efficiently and more convincingly through negative frames.

One may propose that the experiments described here portray a tradeoff between quality (inferred from positive frames) and reliability or trust (inferred from negative frames). According to this perspective, what has been termed here trust–choice incompatibility does not imply a logical contradiction, but rather reflects overweighing positive over negative frames in choice decisions, and negative over positive frames in assessments of trust. As mentioned earlier, trust–choice incompatibility is not necessarily interpreted in the present article as a logical inconsistency but rather as lack of compatibility. Yet, viewing the present research simply in terms of tradeoff, has several limitations. First, trust assessment is often assumed to take place prior to the choice decision, whereas a tradeoff-view assumes that trust and choice considerations occur simultaneously. Second, trust and quality considerations regarding choice constitute noncomparable (difficult to align) attributes (Johnson, 1984). Most important, the present article presents unequivocal evidence of an order effect in which mismatch between trust and choice, what I have termed trust-choice incompatibility, is considerably stronger when trust is preceded by choice (contrary to the common wisdom belief) than vice versa. This finding is difficult to account for within a simple tradeoff perspective. The interpretation I propose, which is congruent with the empirical evidence presented here, is that when choice precedes trust, there are little tradeoff considerations, if at all. The trust issue is simply ignored: in a tradeoff terminology, it gets a weight that approaches 0.

Appendix A

Butchers cover story employed in Experiment 1

Imagine that you organize a large dinner party and need, among other things, a large quantity of ground

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[8] For further clarification, consider a hypothetical study in which a large sample of people is asked whether they trust commercials (regardless of how they are presented). I predict that an overwhelming number will indicate lack of trust in commercials and advertisements, yet nonetheless be influenced by these commercials (consciously or unconsciously) in their buying decisions. Note that commercials are almost exclusively framed positively, supposedly because their ultimate goal is to influence buying decisions rather than invoke trust.

beef. As you know, ground beef consists of lean and fat meat. The relative part of each of these components has to be specified. Indeed, the specifications are not always exactly accurate: for instance, a 50–50% specification may equally stand for 51% lean and 49% fat meat, or 49% lean and 51% fat meat.

There are two butchers in you neighborhood. Butcher A presents his ground beef as (qualified condition:*maximal*)*25% fat*. Butcher B presents his ground beef as (qualified condition: *minimal*)*75% lean*. Which meat are you going to purchase? (choose one option)

– I will buy the ground beef advertised as (*maximal*) 25% fat (Butcher A).
– I will buy the ground beef advertised as (*minimal*) 75% lean (Butcher B).

Candidates cover story used in Experiment 7

Consider yourself in the role of a personnel officer of a mid-size high-tech firm. You are searching for a new candidate for the R& D unit of the firm. You have narrowed down the choice to two candidates, *John* and *Peter*, both of whom look very promising. You find it difficult to decide which of the two to hire.

There is a final piece of information you have to obtain for both candidates namely, a letter of recommendation from their respective previous employers. The last employer of John and the last employer of Peter were each asked to rate the candidates on several dimensions.

	Peter's ratings by his employer	John's ratings by his employer
Responsibility	Excellent	Very good
Creativity	Excellent	Excellent
Industriousness	Excellent	Very good
Programming skills	Very good	Very good
social skills	Excellent	Excellent
Devotedness	Excellent	Excellent

If you had to choose between the two candidates, whom would you choose? Which of the two employers seems to be more trustful?

Used-car dealers scenario used in Experiment 8

Suppose you decided to buy a second hand car. You have a limited budget of approximately €2500 meaning that the car you will buy is likely to be at least 5 years old. There are two garages in your town, garage A and garage B. They also sell second hand cars. Both garages promise an overall repair on any second-hand car they sell, but further cannot give any guarantee on cars older than 5 years.

Garage A states that (more than) 90% of its cars do not need repairs during the first 18 months after a car is sold.

Garage B states that (less than) 10% of its cars need repairs during the first 18 months after a car is sold.

Both garages currently have on sale two cars that are of the same type, are both six years old and have approximately the same kilometer stand. The price asked by both garages is identical, namely €2250, in line with your budget limitations. There is no fundamental difference between the two cars: both meet your basic requirements and you decide to buy one of them.

– Do you buy the car at Garage A or Garage B?
– Who would you trust more: Garage A or Garage B?

Watchmakers scenario–Experiment 9

Suppose you inherited 5000 Euro and decided to use some of this money to buy an expensive, second hand old watch. There are two watchmakers in your town, watchmaker A and watchmaker B. They also sell old expensive watches.

Both watchmakers promise an overall repair on any second-hand watch they sell, and promise that any antique watch you buy is in good condition.

Watch maker A states that (more than) 90% of the watches he sells do not need repairs during the first 10 years after being sold.

Watch maker B states that (less than) 10% of the watches he sells need repairs during the first 10 years after being sold.

Each of the two watchmakers currently has on sale a watch for the same price of 2250 Euro. Both watches are of the same well known mark, and were made at the same year 1910. There is no fundamental difference between the two watches, both seem to be in good condition. You decide to buy one of the two watches.

– Do you buy the watch from Watchmaker A or Watchmaker B?
– Who would you trust more: Watchmaker A or Watchmaker B?

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