

Trust but verify: Distinguishing distrust from vigilance¹

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Abstract

This study tested and found support for the view that trustful individuals are neither necessarily gullible nor are necessarily vigilant but rather there are two types of trustful individuals (1) the ones who are careful and sensitive to information revealing opportunism (prudent trusters); and (2) the ones who are indeed gullible (naive trusters). I propose and find that vigilance and distrust are two distinct constructs, and that it is a combination of vigilance and trustfulness that enable people to predict with a high accuracy the cooperation of others. Trustfulness, vigilance and expectations of other behaviors were measured by a survey of 700 individuals in California and data on the actual electricity consumption of the households in the summer 2000 and summer 2001 were obtained from utility companies in Southern California. Actual electricity reduction by the average household from the summer 2000 to the summer 2001 and individual expectations for how much electricity an average household would save in this period were used to calculate the accuracy of expectations of each individual.

Trust, but verify —Russian proverb

Does trustfulness correspond to gullibility? Or does trustfulness correspond to vigilance when dealing with others? Or are trustfulness and vigilance independent constructs that may or may not coexist in an individual? Arguments and evidence in the literature exist for all three views.

Jones (1996), for example, argues that trustfulness entails gullibility as trustful individuals tend to selectively attend to information that confirms their optimistic beliefs about the trustfulness of others while ignoring information to the contrary. This author wrote: “trust gives rise to beliefs that are highly resistant to evidence” (p. 16). Webster’s (1913) even equates trustfulness with credulousness, by defining trustfulness as “To have trust; to be credulous” (p. 1633). That trustfulness and credulousness go hand-in-hand has been argued by others. Schlenker, Helm, and Tedeschi (1973), for example found that trustful individuals are more likely to believe what others tell them even when there is reason to doubt. Garske (1976) also found a positive relationship between trustfulness, gullibility and a high level of conformity. That trustful people are also credulous and gullible is also consistent with the popular view about trustful individuals.

Contrary to this view, Yamagishi, Kikuchi, and Kosugi (1999) argued that trustfulness in fact entails vigilance. These authors found through a series of experiments that trustful individuals are more likely to reduce their belief that another person could be trusted if they receive some negative information about the focal person than distrusting individuals are.

Furthermore, there is some evidence that trustfulness and gullibility are independent concepts. Rotter (1980), for example reviewed several studies that showed that “high trusters are no more gullible than low trusters” (p. 4).

The inconclusiveness of this debate calls for further research on the issue. In this paper I provide support for the third view arguing that trustful individuals are neither necessarily gullible nor necessarily vigilant. Furthermore, I argue that trustful individuals vary on their level of vigilance: some trustful individuals show a high level of vigilance (I call these prudent trusters) while others show a low level of vigilance (I call these naive trusters). I also show that prudent trusters can more accurately predict others’ behavior than either the naive trusters or the distrusting.

I tested these arguments in the context of a large scale social dilemma: the California Energy crises of 2001. Social dilemmas (also called collective action problems (Ostrom, 2000), tragedies of the commons (Hardin, 1968), and

prisoners dilemmas) are situations where a pursuit of individual self-interest (non-cooperation) is in conflict with the collective interest (that everybody cooperate). For example, during drought it is the interest of the collective that everybody save water yet it is the interest of each individual to leave water saving to others while continuing to water their grass and taking frequent showers in the summer heat. Social dilemmas provide a good context to test the accuracy of expectations of individuals who vary on trustfulness and on vigilance because in such situations individuals who pursue the collective interest could easily be taken advantage off by self-interested individuals (e.g., Dawes, 1980; Hardin, 1968). Data on individual trustfulness, vigilance and expectations of how much electricity others would save were collected by telephone interview from 700 individuals in California while data on the actual electricity consumption of the households in the summer 2000 and summer 2001 were obtained from utility companies in Southern California. Actual electricity reduction by the average household from the summer 2000 to the summer 2001 and individual expectations for how much electricity an average household would save in this period were used to calculate the accuracy of expectations of each individual.

1 Trust and trustfulness

Everyone talks about trust without much agreement of what the concept means. To lay the foundations for the conceptualization of trust in this paper, I rely on Worchel (1979) and Lewicki and Bunker (1996), who identified three basic conceptual differences of trust along disciplinary lines, including (1) “The views of personality theorists, who have focused on individual personality differences in the readiness to trust . . . , (2) the views of sociologist and economist, who have focused on trust as an institutional phenomenon . . . and (3) the views of social psychologists [and economists] who have focused on interpersonal transactions between individuals . . . ” (Lewicki and Bunker, 1996, p. 115). In this paper trustfulness is used in the first meaning as a relatively stable individual characteristic. When an individual has a high level of propensity to trust others, an individual is viewed as trustful; and, when he or she has a low level of propensity to trust, he or she is distrusting (or low trusting). To have a propensity to trust is to have “a belief, expectancy, or feeling [that others can be trusted in general] that is deeply rooted in personality” (Lewicki and Bunker, 1996, p. 115) and to be distrust-

ing is to have a belief, expectancy and feeling that others can not be trusted in general. Note that in this paper being distrusting or a low truster are used interchangeably, and the concept is defined as a personality characteristic that is opposite to trustfulness. This conceptualization is consistent with the one by personality researchers (e.g., Rotter, 1967) but distinct from the one suggested by Lewicki, McAllister, and Bies (1998) who treat low trust and distrust as distinct concepts.

Trustfulness and low trust as defined here as individual characteristics are only interesting if these affects behavior. Although some studies question whether an individual's propensity to trust others affect behavior in a specific situation (e.g., Ajzen and Fishbein, 1973; Butler, 1999), other studies have demonstrated that it does. Steinke (1976) for example, found after dividing subjects into high trusting and low trusting individuals based on their level of general trustfulness, that low trusting individuals cheated significantly more when they did not think that their behavior was observed than high trusting individuals did. Similarly, Wright and Kirmai (1977) found that female low trusters engaged in significantly more shop lifting than high trusters did.

Rotter (1967) argues that propensity to trust affects behavior more in novel situations or when an a person is interacting with strangers. The more unfamiliar individuals are with a given situation or a given individual, the more their behavior is affected by their propensity to trust. Or to put it other way, the more familiar one is with specific others the, more likely one will modify their general level of trustfulness with that specific information about others. But, as I argue in the next section, to what degree people are sensitive to such information is a function of how vigilant they are.

2 Vigilance

Vigilance is a general awareness that not everybody is trustworthy and a tendency to show caution when dealing with unknown others. It encompasses a general sensitivity to information that reveals potential opportunism of others. In other words, vigilant individuals tend to notice and use information about others to up-date initial expectations. Gurtman and Lion (1982), for example, show that vigilant individuals tend to have a lower threshold in recognizing stimuli that indicate potential opportunism. The opposite of vigilance is gullibility, which is a propensity to “believing another person when there [is] some clear-cut evidence that the person should not be believed.”

(Rotter, 1967, p. 4).

Paying attention to information that some interaction partners may not be trustworthy is not the same, however, as being distrustful, as is often assumed (e.g., Kramer, 1999). Being distrustful is to expect that others are not trustworthy when no other information is available, while being vigilant is a propensity to notice information that reveals untrustworthiness and a general willingness to up-date expectations in the light of new information. For example, believing that everybody is a con-artist is distrust. But a propensity to be careful when selecting one's mortgage provider (for example, by checking the status of the real-estate license of the provider) is not distrust but vigilance. Unlike distrusters, vigilant individuals make a conscious effort to distinguish potential opportunists from those who are trustworthy. Their awareness that opportunism does exist also makes these individuals supportive of sanctioning systems and institutions (e.g., legal system, police force) that exist to discourage potential opportunism (Yamagishi, 1986).

Those who are inclined to be careful in this manner are not necessarily distrustful but vigilant. In fact, many of them probably believe that most people and banks are trustworthy, yet, by being cautious, they recognize that this may not apply to everybody. Note also that it is not only the trustful but also the distrusters that can vary based on vigilance. Distrusting but vigilant individuals (ordinary distrusters) are those who generally believe that others can not be trusted and are also alert for the possibility opportunism. Distrusting but non-vigilant individuals (passive distrusters) generally believe that others can not be trusted yet are rather insensitive to the possibility of opportunism. This latter category, although theoretically is possible, is almost non-existent in practice for good reasons (Yamagishi, 2001). Distrusters who do not believe that other's behavior needs to be monitored are rare.

Based on the above, I hypothesize that trustfulness and vigilance are independent constructs and thus

Hypothesis 1 *Individuals can vary based on both trust and vigilance.*

By being trustful but cautious and sensitive to information revealing potential opportunism, prudent trusters are in the best position to form accurate expectations of others' behavior that is essential for deciding how much trust is optimal in the given situation. Because of their trustfulness, these individuals expose themselves to different kinds of social relationships in which they experience both successes and failures. These allow them to improve the

accuracy of their expectations of others. Distrusters (or low trusters) on the other hand, are less likely to gain such experience because their expectations that others are not trustworthy tend to lead to an unwillingness to engage in social relationships (Gambetta, 1988; Hardin, 1996; Yamagishi, 2001). When they do engage in a social relationship, they tend to expect low trustworthiness of others. Naturally there are situations when such low expectations are justified, but as Gurtman and Lion (1982, p. 115) put it: “While low trusters may be ready to ‘call a liar a liar,’ they may also be more ready to call a truthsayer a liar and thus they may be no more accurate overall than [gullible] high trusters in recognizing trustworthiness.”

While trustful individuals are in the best position to develop high judgment accuracy of others, trustfulness by itself does not lead to high judgment accuracy in general unless it is combined with vigilance. Vigilance enables trustful individuals to notice cues of untrustworthiness and fine tune their expectations of others’ behavior. Trustful, but vigilant individuals are also more willing to act on these cues by ceasing to cooperate with those who shows signs of opportunism. Kurzban and Houser (2001), for example, have shown that in the context of a repeated social dilemma experiment, some trustful individuals are more receptive to information that indicates opportunistic behavior of others than others are and adjust their expectations of others’ behavior based on this information. While vigilance for opportunism does help trustful individuals to fine tune their judgment of others, alertness for opportunism does not really help low trusters to develop an accurate expectation of others’ behavior in a similar manner. Ordinary low trusters start out with an expectation that others can not be trusted. Watchfulness and alertness could only reinforce these expectations but could do little to develop positive expectations of others’ behavior. In the words of Gurtman and Lion (1982, p. 115): “Given the nature of low trusters’ generalized expectancies about others, it makes sense that their perception of trustworthiness would err in the direction of caution, and so foster a sensitivity less concerned with accuracy than with self-protection.” Based on the above I hypothesize that

Hypothesis 2 *Prudent trusters are more accurate in their expectations of others’ behavior than naive trusters or low trusters.*

3 Methods

As part of a broader study, I surveyed a sample of 700 individuals during the fall 2001 in California. During this time, California experienced electricity shortages for reasons that are beyond the scope of this paper (see Borenstein, 2001).

What made the electricity crisis a social dilemma was that utility companies were not allowed by state regulation to raise the prices to the consumers beyond a certain level. As a consequence of this, prices alone were not sufficient incentives for the demand to fall to the level of supply. Excess demand of electricity thus created a threat of black-outs, which occasionally led to a disruption in electricity supply to certain regions in California.

Because California was not in the position to increase the supply of electricity, the only way it could avoid the threat of black-outs (collective benefit) was to ask for a voluntary reduction of electricity usage by Californians beyond the cost-saving benefits that they gained from such behavior. This made the electricity crisis situation a large-scale, high-profile social dilemma.

3.1 Sample

The 700 individuals compose a stratified random sample (based on household characteristics and weather zones which information was utilized in a different study) of 11,400 households that itself was drawn from 11 million households that are served by a municipal utility, Riverside Public Utility Company (RPUC) and by Southern California Edison (SCE). Data were collected through telephone interviews by a major survey company while electricity consumption data for the sample were obtained from the utility companies. The company that conducted the telephone survey had been instructed to produce 700 completed questionnaires total¹ and they were also told how many completed questionnaires they need to produce in each weather cell and in each housing types within these cells, so that the completed interviews would be a representative sub-sample of the total sample. The surveyors were also instructed to make sure that they interview individuals in the households who are the primary decision makers concerning the electricity saving behavior in the household. I used ANOVA to test for poten-

¹The sample of 700 was decided based on the desire to reach the largest possible sample within the budgetary constraints of the study.

tial bias between the sample of the completed questionnaires and the rest of the full sample by comparing the electricity consumption in kilowatt-hours (kWh) of the respondents with the electricity consumption of the sample pool between June 1999 and September 2001. The result of the analysis revealed no significant difference in the electricity consumption between the respondents and the sample pool ($F = .284, p = .594$).

3.2 Measures

As part of a larger survey, I collected information from these 700 individuals about their general level of trustfulness, about their vigilance, and about their beliefs of how their own electricity savings compared to the electricity savings of others in California. I also received data from Southern California Edison and Riverside Public Utilities Company on the energy consumption of these individuals for the summer 2000 (before the electricity crises reached broad public awareness) and for the summer 2001, from which I was able to calculate the actual electricity savings of these individuals.²

Trustfulness. Both the trustfulness and vigilance measures were based on a questionnaire by Yamagishi (1992), who drew from Rotter's (1967) Interpersonal Trust Scale and from Kanter and Mirvis's (1989) cynicism scale to develop these scales. The validity and reliability of Yamagishi's (1992) scales have been repeatedly validated by Yamagishi (1992) and his associates (e.g., Yamagishi, 1986, 1988; Yamagishi et al., 1999) across a range of studies.

Trustfulness was measured with the following items on a 1 to 5 Likert scale: (1) Most people tell a lie when they can benefit by doing so; (2) When someone says something complimentary about you it's because they want to get something from you; (3) People take advantage of you when you work with them; and (4) Given the opportunity, people are dishonest. These items are all reverse scored for trustfulness.

Vigilance was measured with the following four items: (1) In dealing with strangers, one is better off to be cautious until they have provided evidence that they are trustworthy; (2) In these competitive times, one has to be alert or someone is likely to take advantage of you; (3) Society will fall apart if the police power that fights criminal activities weakens; and (4) One should be careful to trust others until one knows them well.

²The data were provided and collected in a manner which completely protects the privacy of the individuals surveyed.

As expected, factor analysis of these items with varimax method produced two factors (cumulative eigenvalue is 57.76%). Items of vigilance loaded onto factor one (factor loadings are .799, .758, .742 and .741 for items 1, 2, 3 and 4 of the vigilance scale respectively; and the Cronbach α that measured the reliability of the scale is .75). Items of general trust loaded onto factor two with the exception of item 4 of the general trust measure that loaded into both factor one (.493) and factor two (.460) and thus was eliminated from the analysis. The factor loadings of the remaining three items are .806, .783, .763 for items 1, 2, 3, respectively, of the general trust scale (Cronbach $\alpha = .74$).

Accuracy of expectations of others' behavior. Accuracy of expectations of others' behavior was measured in terms of how accurately people predicted the cooperation level of others in relation to their own cooperation in the social dilemma.

Subjects were asked to what degree they thought that the following statement was true: "I think I have put more effort into reducing electricity use than the average person." On a Likert scale, 1 and 2 mean saving less than the average person, 3 means saving roughly the same as the average person, and 4 or 5 mean saving more than the average person. Thus, we have the subjects' beliefs of how their own behaviour compares to others.

To see how accurate that judgment was, I needed to calculate the savings of the subject and compare it to the actual average savings of the sample.

I calculated the electricity saving for each individual (C_i) using the following procedure: Electricity saving was calculated as the difference between the mean electricity consumption in June–August 2000 (the summer when Californians faced black-outs) and June–August 2001 (when the perception of crisis was not so strong) for each household in the sample. Next, I calculated the average saving for the whole sample $\bar{C} = \frac{1}{n} \sum C_i$ ($\bar{C} = 87.76$ kWh $\sigma = 200.07$), and subtracted this average saving from the saving of each individual. I then categorized the resulting number into five categories (S_i) as seen in Equation 1.

$$S_i = \begin{cases} 1 & \text{if } (C_i - \bar{C}) < -95, \\ 2 & \text{if } -95 \leq (C_i - \bar{C}) < -20.00, \\ 3 & \text{if } -20 \leq (C_i - \bar{C}) < 20.00, \\ 4 & \text{if } 20.00 \leq (C_i - \bar{C}) < 95, \\ 5 & \text{if } (C_i - \bar{C}) \geq 95 \end{cases} \quad (1)$$

So in Equation 1, S_i is the relative savings of person i compared to the rest of the sample. If S_i is 1, that means that person i saved substantially less than others in the sample; if S_i is 3, then they saved about the same as others; and if S_i is 5 then they saved substantially more than others.

Next, I took the absolute difference between S_i and the measures on the judgment item (“I think I have put more effort into reducing electricity use than the average person”), J_i . This difference gives us the error in their judgment.

The resulting number is a measure of judgment inaccuracy, meaning that the higher the value of this number for a person, the less accurate was his or her judgment. To turn these numbers into a measure of judgment accuracy I subtracted this difference from 5 and then used the resulting numbers as a measure of judgment accuracy, A_i for an individual.

$$A_i = 5 - |J_i - S_i| \quad (2)$$

The above measure, however doesn’t discriminate among inaccuracies between estimating one’s own savings and estimating others’ savings. Because of this, I found it necessary to also measure the accuracy of the respondents’ estimation of their own electricity savings. In the survey I asked each respondent to evaluate their own electricity saving effort (“I have put a lot of effort into reducing my electricity use.”) and compared this with their actual electricity savings in a similar manner as I did so with the accuracy of expectations of others’ behavior.

3.3 Analysis

Correlations among the variables are shown in Table 1.

Based on the measures of trustfulness and vigilance, individuals were categorized into four categories based on Table 2. Those individuals who scored high on both trustfulness and vigilance were categorized as prudent trusters (30% of the sample); those who scored high on trustfulness and low on vigilance were categorized as naive trusters (19%); those who scored low on the trustfulness scale and high on the vigilance scale were categorized as ordinary low trusters (48%); and those individuals who were low on trustfulness but also low on alertness were categorized as passive-low trusters (3%). As predicted above, this last group of individuals was almost non-existent in

	Mean	S.d.	Other-accur.	Self-accur.	Trustfulness
Accuracy-others	2.77	1.45			
Accuracy-self	3.00	1.33	.20***		
Trustfulness	3.86	.96	.17***	.17***	
Vigilance	1.30	1.04	.18***	.21***	-.18***

*** $p < .001$

Table 1: Cross-correlation Table

	High trust	Low trust
High vigilance	prudent trusters $N = 210, 30\%$	ordinary low-trusters $N = 336, 48\%$
Low vigilance	naive trusters $N = 133, 19\%$	passive-low-trusters $N = 21, 3\%$

Table 2: Distribution of types in sample

the sample and thus were dropped from the analysis. Thus the term “low truster” will refer to ordinary low trusters in the rest of the paper.

Between-subjects ANOVA was used to calculate whether there were significant differences in the accuracy of expectations of others’ behavior between the three groups of prudent trusters, naive trusters and low trusters. I used Dunnett T3 analysis to test for the pair-wise differences among groups. The results of this analysis are summarized in Table 3.

Similar calculations were used to assess whether there are significant differences in the accuracy of estimates of one’s own savings between the three

Group I	Group J	\bar{I}	\bar{J}	$\bar{I} - \bar{J}$	Std Error
Prudent	Naive	3.13	2.69	.44*	.16
Prudent	Low-trust	3.13	2.68	.45*	.16
Naive	Low-trust	2.69	2.68	-.01	.18

* $p < .05$

Table 3: Results of Dunnett T3 analysis for the accuracy of estimating the savings of others

Group I	Group J	\bar{I}	\bar{J}	$\bar{I} - \bar{J}$	Std Error
Prudent	Naive	3.33	3.10	.23	.11
Prudent	Low-trust	3.33	3.11	.22	.14
Naive	Low-trust	3.10	3.11	-.01	.12

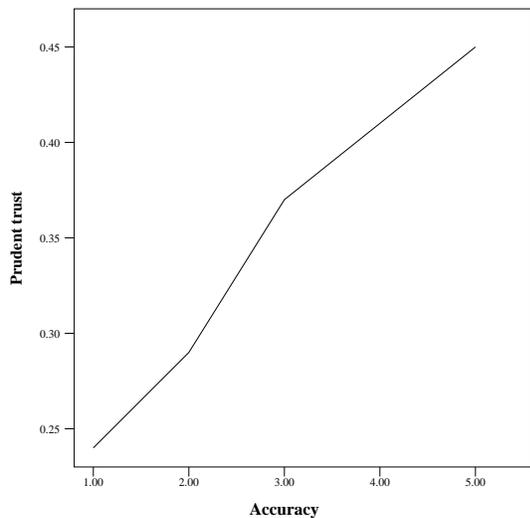
* $p < .05$

Table 4: Results of Dunnett T3 analysis for the accuracy of estimating one’s own saving

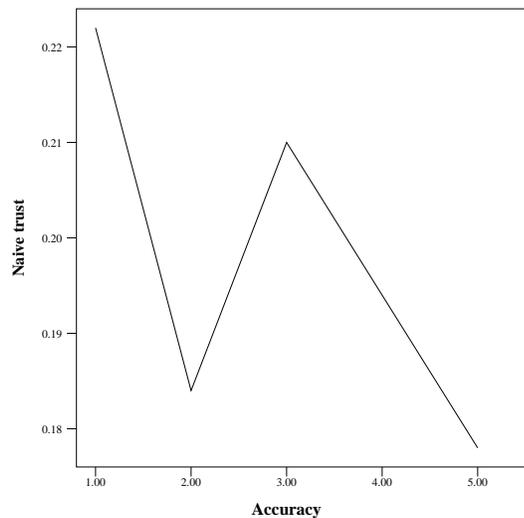
groups of prudent trusters, naive trusters and low trusters. I used Dunnett T3 analysis to test for the pair-wise differences among groups. The result of this analysis are summarized in Table 4.

4 Results

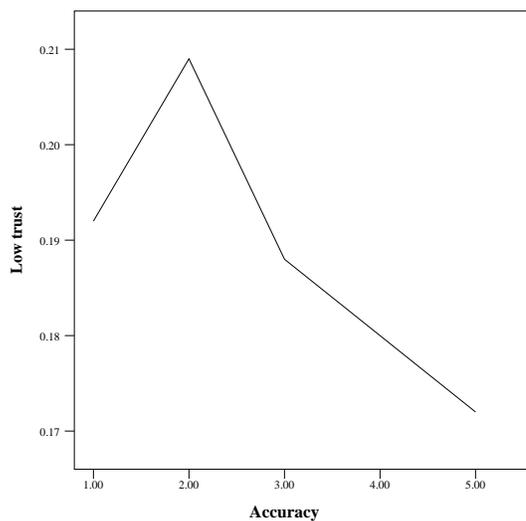
Table 2 shows a triangular relationship between trustfulness and vigilance. While almost all of those who are distrustful are also vigilant, this does not mean that the opposite is true for trustfulness. In fact, a sizable majority of trusters in the sample are vigilant trusters. Thus, Table 2 shows that as predicted in Hypothesis 1 trustful individuals tend to vary based on their vigilance leading to both trustful and vigilant individuals as well as trustful and gullible ones. Low trusting individuals also show some variation on vigilance, but, as expected, the number of low trusters who are not vigilant is low. In addition, the Dunnett T3 analysis (Table 3) shows that the groups do differ in terms of the accuracy of expectations of others’ behavior. As predicted in hypothesis 2, prudent trusters are more accurate in their expectations of others’ behavior than either naive trusters (difference of means = .44, $p < .05$) or low trusters (difference of means = .45, $p < .05$) are. These results are represented visually in Figure 1. While differences were found among prudent trusters, naive trusters and low trusters in terms of their accuracy of expectations of others’ behavior no such differences were found in the accuracy of the members of these groups of estimating their own electricity savings (see Table 4). Thus, differences in the accuracy estimates among these groups is due mainly to differences of the accuracy of estimating the behavior of others.



(a)



(b)



(c)

Figure 1: ANOVA relations: (a) shows prudent trust interaction with accuracy of expectations; (b) shows naive trust interaction with accuracy of expectations; (c) shows low trust interaction with accuracy of expectations.

5 Conclusion and discussion

These findings support the claim that trustful individuals can vary in their level of vigilance. Some trustful people may correctly be called gullible, but there are plenty of watchful, prudent trusting individuals. And it is exactly these prudent trusters who are best able to predict the behavior of others. Naive trusters, on the other hand, were found to be no more accurate in their expectations of others' behavior than low trusters. This may help explain why there are conflicting findings on the relationship between trustfulness and vigilance, with some studies showing a positive relationship between trustfulness and vigilance (e.g., Yamagishi, 2001) and some showing a negative one (e.g., Garske, 1975).

The findings are good news since they fully support the view that one doesn't have to be gullible to be trusting. Furthermore, it is gratifying to see that those who are the best predictors of others' behavior are among the most trusting. This suggests that (at least in the population the sample is drawn from) that trust is generally justified. Whether this would hold in other populations or for other sorts of situations remains to be explored.

The ability of prudent trusters to accurately predict the behavior of others that I found here is, according to Yamagishi et al. (1999), in fact a form of social intelligence. "Social intelligence" is based on the notion that there are multiple types of intelligences, including an interpersonal intelligence, which is an ability "to read the intentions and desires – even when these have been hidden – of many other individuals and, potentially to act upon this knowledge" (Gardner, 1993, p. 239). This definition of social intelligence subsumes the ability to predict the behavior of others with high accuracy that I measured here. Gardner (1993) suggests that when a person is able to make such predictions, this allows him or her to manage social relationships in a way that best serves his or her goals. This suggests the possibility that prudent trusters may be those who are best able to manage their social relationships. It would be an interesting future study to test for this possibility.

In addition, this paper has shown that a person can be vigilant without being distrustful. This is a good news, because as Ghoshal and Moran (1996) warned, distrust often breeds distrust thus leading to a self-fulfilling prophecy. Trustful vigilance does not, however, produce distrust. Indeed, the accuracy of the predictions of the prudent trusters may suggest that prudent trust reinforces prudent trust, since both positive and negative information

about the risks and benefits of trusting are obtained and taken into account. Vigilant distrusters will never see evidence of benefits of trusting, and the non vigilant will simply not attend to the information they do get.

Finally, differentiating vigilance from distrust as was done in this study may also have practical implications. Although distrust may be disruptive for constructive social relationships, this is not true for trustful vigilance. In fact, by practicing trustful vigilance, individuals are in the best position to enter into new constructive social relationships while also minimizing their chances of being exploited by opportunistic individuals.

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