

Chapter 2

Defining Trust and E-Trust: From Old Theories to New Problems

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ABSTRACT

The paper provides a selective analysis of the main theories of trust and e-trust (that is, trust in digital environments) provided in the last twenty years, with the goal of preparing the ground for a new philosophical approach to solve the problems facing them. It is divided into two parts. The first part is functional toward the analysis of e-trust: it focuses on trust and its definition and foundation and describes the general background on which the analysis of e-trust rests. The second part focuses on e-trust, its foundation and ethical implications. The paper ends by synthesising the analysis of the two parts.

INTRODUCTION

Although trust is largely recognised as an important issue in many fields of research, we still lack a satisfactory definition and foundation of it. Moreover, in recent years, the emergence of trust in digital contexts – known as *e-trust* – has created new theoretical problems. So the first part of this paper, dealing with the old problems of trust, is functional toward the analysis of e-trust and it is meant to describe the general background on which

the analysis of e-trust rests. The second part focuses on the new problems posed by e-trust. Their investigation is meant to prepare the ground for a new philosophical approach that might overcome the highlighted difficulties. Let me now provide a more detailed summary.

I first briefly describe Luhmann's contribution to the analysis of trust and then focus on the definition of trust provided by Gambetta. This definition has provided a general understanding of trust and influenced much of the literature. As we shall see, it stresses two aspects: the decision that an agent takes to trust and the relation between

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trust and risk. I will argue that, despite several valuable features, the definition still faces two main problems: the specification of the parameters that determine the decision to trust, and the explanation of the reasons why an agent should decide to take the risk of trusting another agent. These are problems that affect the analysis both of trust and of e-trust.

In the second part of the paper, I discuss the problems that affect e-trust more specifically. The first problem is whether e-trust is possible at all. Some of the literature has denied that trust in digital environments may ever occur. This position rests on the assumption that “trust needs touch” – that it needs to be based on direct physical interaction, which of course does not exist in digital contexts. In the next two sections, I draw attention to two other problems: the role of e-trust in the dynamics of a distributed artificial system, and the relation between e-trust and the ethical values that AAs might be endowed with.

In the last section, I conclude by pulling together the different threads of the analysis in order to summarise the problems left unsolved.

TRUST: A DECISION MAKING PROCESS

Trust is often understood as a relation between an agent (the *trustor*) and another agent or object (the *trustee*). The relation is supposed to be grounded on the trustor’s beliefs about the trustee’s capabilities and about the context in which the relation occurs. This is a generalisation of the definition of trust provided by (Gambetta, 1998). Before exploring in more depth Gambetta’s analysis, however, let me briefly recall some of the more relevant points in Luhmann’s analysis of trust, (Luhmann, 1979). This analysis should be considered the starting point for the modern approach to trust and its cognate concepts.

Luhmann examines the function of trust and the social mechanisms through which trust is

generated. He specifies the reason why society in general needs trust. Such a need rests on the fact that trust is a starting point for the derivation of rules for proper conduct, or for ways of acting successfully by reducing complexity and uncertainty in a given social system. Following Luhmann “trust is an effective form of complexity reduction”, (p. 8).¹

For Luhmann, trust is a decision taken by the trustor on the basis of the following parameters: familiarity, expectation and risk. Familiarity is the acquaintance of the trustor with the potential trustee and with the systems. It is the variable that provides a reliable background for the trustor’s choice to trust. Expectation is the reason for which an agent decides to trust. For Luhmann, trust is present only when the expectation to trust makes a difference to a decision, otherwise what one has a simple hope. Trust is a risky investment. Following Luhmann, this is so because to trust is to take a decision and risks are a component of decision and action.

This brief overview of Luhmann’s analysis underlines the main issues present in any attempt to investigate trust: (a) trust as a result of a decision process, (b) the need of a reliable background as a necessary requirement to trust, (c) the expectation and (d) the risk related to the choice to trust. All these issues have been addressed in the theories analysed in the rest of this paper; particular attention to trust as a result of a decision process has been paid by Gambetta’s analysis.

Gambetta defines trust as follow: “trust (or, symmetrically, distrust) is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action”, (p. 216).

According to Gambetta, trust is grounded on the probabilities attributed by the trustor to her own beliefs about the trustee’s behaviour and abilities. Once calculated, the probability is compared with a threshold value and placed on a probabilistic distribution, where complete distrust is equal to 0, complete trust is equal to 1, and the mid-point

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