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TECHNOLOGICAL
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CC0007 Science and Technology for Humanity

Trustless Trust

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What is Trust?

- The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party (Mayer et al., 1995)
- The willingness to be exploited by others (Mayer et al., 1995)
- The willingness to take some risk in relation to other individuals on the expectation that the others will reciprocate (Ostrom & Walker, 2003)
- Trust is a psychological state of a trustor comprising the intention to accept vulnerability in a situation involving risk, based on positive expectations of the intentions or behavior of the trustee (Rousseau et al., 1998)
- The trustor is vulnerable to the possibility of the trustee failing the entrusted task (Baier, 1986)

Schoorman, F.D., Mayer, R.C., & Davis, J.H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review*, 32, 344-354. <https://doi.org/10.5465/amr.1995.9508080335>
Ostrom, E. & Walker, J. (2003). *Trust and reciprocity: Interdisciplinary lessons for experimental research*. Russell Sage Foundation. <https://www.jstor.org/stable/10.7758/9781610444347>
Rousseau, D.M., Sitkin, S.B., Burt, R.S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23, 393-404. <https://doi.org/10.5465/amr.1998.926617>
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Elements of Trust: How Does it Work?

- Trustor *Some one who trust*
- Trustee *object trust or trust*
- Action or context
- Risk or uncertainty *Trust must w/this*
- Goal or outcome



Elements of Trust

A trustor is relying upon a trustee by taking a risk to achieve some goal.



Examples

- Lunch
- Shopping
- Investment
- Trust is essential for human interaction.



Dimensions of Trust: How Does it Work?

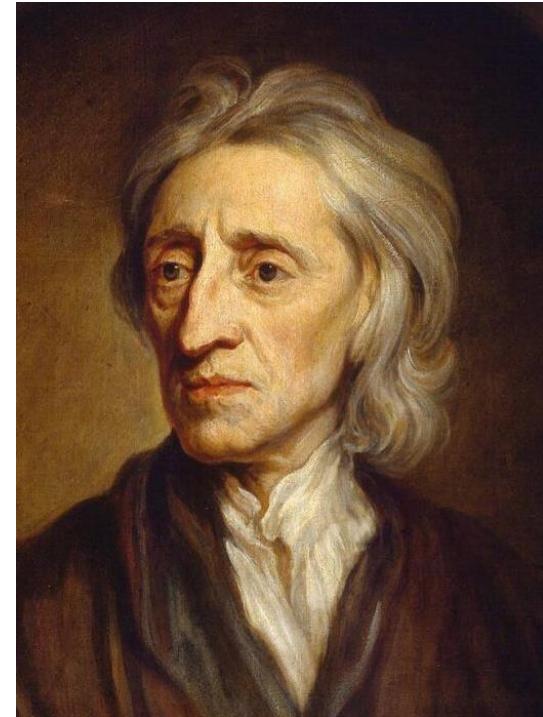
- **The cognitive element in trust** is characterised by a cognitive "leap" beyond the expectations that reason and experience alone would warrant—they simply serve as the platform from which the leap is made.
- **The emotional dimension in trust** is this is why the betrayal of a personal trust arouses a sense of emotional outrage in the betrayed. The betrayal of trust strikes a deadly blow at the foundation of the relationship itself, not merely at the specific content of the betray.
- **The practical significance of trust** lies in the social action it underwrites. Behaviourally, to trust is to act as if the uncertain future actions of others were indeed certain in circumstances wherein the violation of these expectations results in negative consequences for those involved.

Why is Trust Important?

- Fukuyama (1995) states that a nation's well-being depends on the level of trust inherent in the society.
- Putnam (2000) considers trust as a "social capital," suggesting that it is essential for social cohesion.
- Locke (1689) states that trust is the most fundamental requirement for the formation of societies.
- Gambetta (1998) says that trust enables cooperative behaviour.



Francis Fukuyama



John Locke

Cost of Trust

- Time and effort to reduce the involved risk
- *Payment for 3rd Parties*
- Era of misinformation and disinformation
 - Fake news
 - Phishing
 - Deep fake
- The truth is out there?



Deepfakes

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Trustless Trust

- Blockchain as a potential solution:
Lex cryptographia
 - The evidence supporting the trustworthiness of trustees without much cost or effort
- Effortless trust
 - Bypassing third parties
 - Guaranteed trustworthiness of information
 - But not a magic word!



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