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Developing and Maintaining Trust in Post-Disaster Hastily Formed Networks

Abstract

Although there is a rich stream of literature championing the importance of trust in long-term business relationships, there has been relatively little interest in the area of the development and maintenance of trust in hastily formed networks that are formed at short notice and that operate for a limited period of time. Such networks can be found in the aftermath of a rapid onset disaster where individuals from a broad variety of organisations and geographic locations come together in order to bring relief to a disaster-stricken area. The aim of this paper is, therefore, to further the understanding of trust in hastily formed networks through the presentation of a theoretical model, a discussion of its practical application in a post-disaster scenario, and proposals for testing the approach in a live setting.

Introduction

The fields of inter-personal and inter- and intra-organisational trust have been the subject of significant academic research stretching back over at least three decades including, for example, special editions devoted to the subject in the journals *Organization Studies* [1] and *Organization Science* [2]. This has led to the development of frameworks that integrate psychological and behavioural concepts and, although further research is unquestionably required [3], such models offer useful insights into the antecedents of trust, as well as subsequent evolutionary patterns.

Whilst the need for inter-organisational trust is a core concept in a broad spectrum of management literature [4] [5] [6] [7], much of this is devoted to understanding how appropriate long term relationships can be developed and maintained. This reflects issues such as the potential for reduced transaction costs [8], the relationship between trust and risk [9], trust and vulnerability [10], and as a substitute for contracts [11] or control [12] [13] [14]. By comparison, however, there are relatively few studies on trust in temporary networks even though such networks exist in a variety of settings such as the “minimal organizations” [15], “emergent multi-organizational networks” or “emergent response groups” [16] and hastily formed networks (HFNs) in a military context [17] and in disaster relief [18] [19].

Whilst the phrase “hastily formed network” provides a relatively clear mental model, the concept has been formally described by the HFN Research Group [20] as having five elements. It is a network of people (1) established rapidly, (2) from different communities, (3) working together in a shared conversation space, (4) in which they plan, commit to, and execute actions, (5) to fulfil a large, urgent mission. In following this definition of an HFN, it is important to note that such networks differ from the minimal organisations described by Weick [21] where the individual members (such as fire fighters) are likely to share a common aim, ethos, background, approaches and working practices. By contrast the members of an HFN in a humanitarian context, whilst sharing the same high level goals, may have not worked together previously nor have undergone the same training. For example, it is estimated that over 400 official international non-governmental organisations (NGOs) and over 5,000 associated staff were present in Indonesia in the immediate aftermath of the 2004 Southeast Asian tsunami [22], whilst the United Nations Joint Logistic Centre (UNJLC) formed in the aftermath of Cyclone NARGIS that struck Burma in 2008 was based in two separate countries (Burma and Thailand), and drew its 18 staff from 10 separate organisations [23].

The aim of this paper is, therefore, to further the understanding of the development and maintenance of inter-personal trust in hastily formed networks (HFNs) in the aftermath of a rapid onset disasters. To achieve this, the paper will begin by discussing the concept of HFNs in more in detail, before considering the ways in which, using a theoretical approach, trust can be formed in such networks. In doing so, it will discuss the problem of developing and maintaining trust from psychological, behavioural and physiological perspectives, drawing in particular on the concept of “swift trust” that has been developed by Meyerson *et al.* [24]. This will be followed by a discussion of the operationalisation of trust in an HFN, after which potential ways in which the model might be tested are considered.

The Development of Trust in Post-Disaster Hastily Formed Networks

In the aftermath of such high profile events as the 2004 Indian Ocean tsunami, Pakistan earthquake and Hurricane Katrina in 2005, and Cyclone Nargis and the earthquake in Szechuan in 2008, there has been a significant movement towards improving the response to such rapid onset disasters. In this respect, the effectiveness of the relief operations is critically dependent on the speed of logisticians to be able to “procure, transport and receive supplies at the site of a humanitarian relief effort” [25]. Indeed, it can be argued that the humanitarian response is, in effect, a logistic operation given that an estimated 50-60% [26] to 80% [27] of the income of an NGO is spent in this broad area. Whilst the need for those responding to disasters to do so with speed is self-evident, perhaps less apparent are the sheer numbers of such organisations involved. For example the UK is estimated to have 3-4,000 internationally operating humanitarian organisations [28], whilst a recent analysis has suggested that over 30,000 such international NGOs exist world-wide [29]. It is unsurprising, therefore, that the arrival of a plethora of organisations within a disaster area can lead to huge challenges as evidenced by the 72 inter-agency co-ordination meetings reported to have been held weekly in Banda Aceh alone [30].

With this need for speed set against the influx of many organisations and individuals in mind, the need to achieve a high degree of inter-personal trust at an early stage in the response becomes more apparent. But, in considering how to conceptualise trust in the disaster relief context, it is appropriate to begin with a definition of the concept – although, as observed by Kramer [31] “a concise and universally accepted definition has remained elusive.” On the other hand, there are many authors in this field who offer broadly similar definitions (e.g. [32] [33] [34] [35]) and these are reflected in the following which will be used within the paper:

Trust is present when the one party has a fundamental belief that the other can be relied upon to fulfil their obligations with integrity, and will act in the best interests of the other.

Importantly, this definition of trust focuses on inter-personal, rather than intra- or inter-organisational relationships. It is argued that decisions within organisations are made by individuals and, therefore, the level of intra/inter-organisational trust can be seen as a reflection of those individual relationships – although it is recognised that, in reality, the spectrum of possible and actual relationships is significantly more complex as demonstrated by Currall and Inkpen [36]. But how does such inter-personal trust develop? In decomposing the vast swathe of literature that discusses the concept of trust from a variety of perspectives, it is suggested that the key to understanding it in the context of HFNs is the recognition that, in this scenario, trusting inter-personal relationships need to be achieved in a very short time frame. For this reason, the work of Meyerson *et al.* [37] into the development of “swift trust” has significant applicability, and it has been expanded into a more general framework by Hung *et al.* [38] (see Figure 1)

Figure. 1: Routes to trust formation (modified from Hung *et al.* [38, p.4])

Hung *et al.* [38] suggest that there are three different routes to trust: the peripheral, central, and habitual. If seen in sequence, the peripheral route refers to the early stages of a relationship in which the individuals forming the network cannot rely on their, as yet to be formed, perceptions of the trustee(s) ability, integrity and benevolence; rather trust at this stage is based on (peripheral) cues such as those provided by third parties. Hung *et al.* [38] suggest that adoption of this peripheral route to trust involves less cognitive effort than making one's own judgments and is, therefore, the preferred route in the initial stages of a relationship. However, once teams have formed, individuals are able to cognitively engage and this may lead to the development of trust through the central route. The final route is that of habitual trust which reflects the historical build up of successful trust transactions, and often leads to strong emotional bonds.

According to Hung *et al.* [34] the peripheral (i.e. swift) route, has five antecedent conditions that influence trust formation: (1) role, (2) third party information, (3) category, (4) rule and (5) dispositional. Importantly, it is argued that, in addition to the simple feedback loop generated by improved knowledge of the others in the relationship, the process is mediated by the perceived level of risk which, in turn, reflects the communications environment within the network. It will be appreciated that, in the context of HFNs in the aftermath of a disaster, there are likely to be many virtual elements to the network (including for example, head and regional offices, together with individuals who are on the ground in the disaster zones), and therefore this aspect of the framework is of particular importance.

Operationalising the Swift Trust Framework in a Humanitarian Logistic Context

In operationalising the framework shown in Figure 1, a number of overarching points must be considered. The first is the interdependence of the trusting relationships which means that, in essence, there is no one trustor or trustee; rather each member of the network engages in a relationship with the other members. Furthermore, the outcomes of any interchange between

the parties will affect each party in, potentially, different ways. Secondly, the level of trust within a relationship is not static. Indeed, as Hung *et al.* [38] argue, over time, the relatively fragile swift trust can develop, via the central route, to the robust habitual form; on the other hand, trust can also decline. Furthermore, there is no absolute level of trust at any given time in a relationship, rather, parties may trust each other in relation to one issue, but not another. Finally, there is good evidence to suggest that, subject to any negative impacts of the perceived success of prior alliances [39], individual members of a network often act as if trust were in place and this leads to self-fulfilment. The very act of forming a network may of itself trigger an initial level of trust, where a positive assumption about the trusting behaviour of others becomes the baseline position [40]. However, Coppola *et al.* [41] and Ben-Shalom *et al.* [42] suggest that this baseline is also affected by the expectations of trust that members import from other settings with which they are familiar.

With the above points in mind, the following sections will discuss the antecedents of swift trust. This discussion is developed from the perspective of an individual who has been designated the leader of a post-disaster logistic team whose members are drawn from a number of organisations and who come from different countries (and, hence, cultures).

Role

In line with the concept of the peripheral route for the formation of swift trust, using roles as the basis for making initial assumptions allows the trustor to make assumptions about an individual's ability based on the fact that they are fulfilling a particular role rather than through specific knowledge about their competence, motives, etc [43]. A typical example of role-based trust is the positive predisposition of individuals to trust a doctor for her/his medical expertise even in their first consultation based simply on the fact that the doctor holds the relevant professional qualifications. Similarly, individuals trust engineering and, therefore, trust engineers because they have been taught to apply the principles of engineering [44].

In a post-disaster HFN, the fact that a particular humanitarian organisation is employing an individual in the role of, say, a logistician leads others to assume that the individual has been judged to have the relevant competencies and capabilities, and can therefore be trusted. For this means of developing trust to be effective, there is a very clear onus on humanitarian organisations to fulfil their side of this notional bargain – in other words only to employ staff who do, indeed, possess the relevant competencies etc. However, this quickly leads one to the prior question of what are the appropriate skills and attributes required of a humanitarian logistician and it should be noted that this remains an under-researched question [45]. Indeed, whilst there have been a number of models developed [46], the linkage between such proposed competencies and the logistics performance of an organisation has yet to be demonstrated [47].

That said, there is a general move towards the introduction of certification through such schemes as those provided by the UK Chartered Institute for Logistics and Transport (CILT) which are delivered in concert with the NGO RedR. Successful anchoring of the required skills and experience in an internationally recognised framework would provide valuable underpinning for the antecedent of “role” within the swift trust model and, hence, support the development of the desired inter-personal trust. However, in the absence of such internationally recognised standards, our exemplar team leader should still use this role-based route whenever possible and, where appropriate, promote the reliability and trustworthiness of individual team members to the group as a whole.

Third Party Information

Third party information enables the formation of trust based not on the, as yet, unidentified capabilities of an individual, but on their prior reputation. Thus, whilst the HFN itself does not have a shared history, some of the individuals within it may have carried out similar roles under different, but similar, circumstances. Thus, for example, whilst the leader may not know team member A, he or she does know team member B who, in turn, knows A. By drawing on team member B's (positive) view of A, it is possible to promote A's credentials – and hence their trustworthiness to the team at large.

This generic approach could be assisted by the development of a database of those members of humanitarian organisations who are on call for short term post-disaster duties which would include details of their qualifications and/or experience. However, in the absence of such a data base, it is suggested that humanitarian organisations have a responsibility to “advertise” the skills of their employees both within the organisation itself and between organisations. The aim here is not to develop an elitist mentality, rather to support the formation of trust by emphasising that individuals are likely to have the appropriate skills in advance of their demonstration of these.

Category

Further peripheral cues of trust are given by the membership of individuals in social groups or categories such as gender or race [48]. Within the context of disaster relief, this is potentially a highly divisive area – indeed, evidence of the negative effects of such categorisation has been noted by Zolin [49, p.7] who observed: “difficulties in establishing interpersonal working relationships between [the US Military] and [NGOs] due to perceived differences in organisational goals, strongly held negative organizational stereotypes and perceived ideological differences”. Apart from trust judgements based on stereotypes based on gender, ethnicity, religion, race, or age (to name but a few of potential categories), organisational culture also forms a category in itself [50]. As an example, military organisations are often categorised as highly hierarchical organisations, whilst NGOs typically operate in a less structured organisation that prizes individualism. Unsurprisingly, therefore, such entities potentially present a clash of cultures – although the extent to which this is perceived, or can be seen as stereotypical rather than real, remains unclear.

Interestingly, the location of an organisation within such a categorisation must be seen in relative rather than absolute terms. Thus, within the broad humanitarian family, UN agencies are often seen as more hierarchical when compared to an NGO that is a network of individuals. This, in turn, helps to explain the potential tension between such organisations within the wider humanitarian aid supply network. Indeed, Dowty *et al.* [51] have used this to help explain not only the cultural dissonance between a number of organisations (e.g. FEMA and the US Coast Guard service) in their response to Hurricane Katrina, but these authors go further by suggesting that the propensity to take risk is link to culture. Thus, not only is there a potential clash between the approaches and *modus operandi* of organisations in different categories, but also their approach to the management of risk. In a disaster response scenario, it would seem likely that such differences would have a particularly negative effect on the building of trust between members of different organisations.

Given that such stereotypes undoubtedly exist, the implication of the swift trust model is that when the trustor and trustee belong (or perceive that they belong) to different categories, this will have a negative impact on the development of trust. This is an important area because separate experimental research has demonstrated a broad range of related psychological

nuances including that images of smiling partners are trusted more than those who are not smiling [52], and individuals whose faces resemble the trustor are significantly more trusted [53]. In the context of an HFN, it is clearly incumbent on the leader to recognise the implicit potential for divisiveness, and to ensure that the team members appreciate that there is almost certain to be a difference in the ways in which individuals respond to challenges and interact. Prior appreciation of the near inevitability of culturally based misunderstandings will, it is argued, go a long way towards ensuring that these can be managed and do not unreasonably restrict the development of trust within the network.

Rule The presence of rules (under which heading one can include processes and procedures) is deemed by Kramer [54] to be of significance in supporting the development of swift trust. Put simply, the suggestion here is that, by following “the rules”, individuals are deemed by their peers to be trustworthy [55]. Indeed, Kramer [56] suggests that “explicit and tacit understandings regarding transactional norms, interactional routines and exchange practices provide an important basis for inferring that others in the organization are likely to behave in a trustworthy fashion.” In short, the adherence to the organisation’s rules is a guard against maverick behaviour which has the potential to reduce the level of inter-personal and inter-organisational trust. Indeed, this perspective has considerable resonance with the work of other researchers such as Grey and Garsten [57] and Maguire *et al.* [58] who conceptualise trust as enabling individuals to behave in a predictable way.

However, when it comes to initial the development of trust, rule-based behaviour refers to issues such as the normality of the situation and, potentially, the assurance of organisational structures [59]. But for humanitarian logisticians, “normality” is a highly fluid and uncertain situation and, hence, there is no single organisational structure they can be used as a template. That said, the general concept of “structuration”, i.e. the development of common approaches, sets of rules, etc., has clear relevance to such HFNs as it would help to ensure that individuals who join the network from different organisations can make the transition with the minimum of effort. In this respect, co-ordinating initiatives such as the Logistics Cluster and the emerging Humanitarian Logistics Association (HLA) point towards the long term possibility of developing structures that can help the rule-based development of swift trust in HFNs.

On the other hand, it is acknowledged that, in the humanitarian context, the development of well documented processes and procedures (i.e. “rules”) is counter-cultural. Those working within humanitarian organisations are, understandably, output and outcome focussed; their *raison d’être* is the relief of hardship and suffering of those affected by a disaster and adherence to “bureaucracy” is seen as a diversion from this real objective. On the other hand, when responding to a major disaster, NGOs are almost universally forced to use staff who are not part of their core teams, i.e. those from “on call” rosters and other augmentees. In all probability these additional resources will have had limited experience of working within the particular NGO and, therefore, will have even more limited exposure to that organisation’s rules. This results in the potential for inadvertent maverick behaviour with its concomitant negative effect on the development of inter-personal trust. There is clearly a balance to be struck here, as it could be argued that such behaviour in the guise of strong leadership could be valuable in cementing relationships within a team. However, from the perspective of the swift trust model, there is clear benefit in the development and exposition of clear simple and easy to follow rules that will help ensure newcomers can fit into the organisation and become effective both speedily and with the minimum of effort.

Dispositional Trust

Dispositional trust is the final antecedent condition in the swift trust framework, and this relates to the general disposition of an individual to trust other people; in other words, some people are inherently more trusting than others. The existence of this phenomenon is well documented [60] [61] [62] but, as with the earlier discussion of “category”, there is little that can be recommended to overcome the problem of differential dispositional distrust other than for the team leader to ensure that all members of the network are aware of this potential challenge to the development of trust.

Trusting Behaviour in Humanitarian HFNs

In considering the swift trust model, it is not only important to note the five antecedent conditions that give rise to trust, but also to distinguish between trust, and trusting behaviour. Hung *et al.* [63] depict trusting behaviour as being mediated by the perceived risk of potential gains (or losses) of acting on the basis of inter-personal trust. In the humanitarian context, perceived risks can encompass physical danger as well as the loss of reputation as a result of depending on the behaviour of other members of the HFN. In essence, the act of trusting is one in which the trustor is prepared to increase their vulnerability to the actions of others. It follows, therefore, that if level of perceived risk is greater than the level of trust, the individual is less likely to engage in trusting behaviour [63].

The second mediating issue is that of the communication environment, the importance of which has been emphasised by Weick [64] in his analysis of the Mann Gulch disaster in which 13 US fire fighters lost their lives. In this disaster one of the key failings was the near absence of communication between the team members, and the consequential reduction in the level of intra-team coordination. In short, the lack of communication in the early stages of the development of this temporary group heightened its vulnerability to disruption. When stressed by the advancing wild fire, the inter-team ties (which, in part, reflect the level of inter-personal trust) were insufficient to prevent fragmentation of the group and a reversion to self-interest (or perhaps more accurately, self-preservation). This point is equally emphasised by Drabek [65] whose review of emergency response organisations in the United States indicates that cross-agency communication was perceived to be the greatest weakness. In summary, there would appear to be broad support for the proposition that the clarity of the communications environment has an effect on the formation of trust. This perspective has been extended by Hung *et al.* [66] who suggest that “virtual” environments increase the perceived risk and, hence, reduce the propensity to convert trust into trusting behaviour.

Once again, in terms of mitigating these issues, the key would appear to lie in an understanding of the problem (i.e. the effect of the perception of risk) on the actions of individuals, and the role that the effectiveness of inter-personal communication has to play as an antecedent. Clearly a number of technological approaches (such as the use of video-conferencing) may help overcome the inherent defects of simple computer-based interaction (e-mails etc.) – subject of course, to its feasibility in a post-disaster scenario. As before, the role of the leader would seem to revolve around ensuring that team members are aware of this facet of the problem through appropriate guidance, training and education.

The Development and Maintenance of Trust from a Physiological Perspective

Up to this point, the discussion has approached the development and maintenance of inter-personal trust from the psychological and behavioural perspectives. However with the advent of improved neuroscience techniques it is becoming increasingly possible to consider the physiological aspects of these challenges. In particular, the work of Zack [67] and Kosfeld [68] has focussed on the role of a neuropeptide called oxytocin. As a result of a number of

experiments using the trust game [69] it has been possible to demonstrate that the level of oxytocin rises in those who are trusted more, and these trustees reciprocate to a greater extent. It would appear that the underlying mechanism involves the action of oxytocin in triggering the release of dopamine. This leads to a pleasurable sensation that, in turn, rewards and reinforces the trusting behaviour.

This finding has been developed by Morhenn *et al.* [70] who considered the earlier finding (for what are believed to be evolutionary-based reasons) that the levels of oxytocin are higher in mammals that have been subject to repetitive stroking. Morhenn and her colleagues showed in a series of experiments that the level of oxytocin and the level of trusting behaviour rose when participants were given a massage prior to taking part in the trust game. Similar effects have been demonstrated by Keltner [71] who, whilst explaining the rules of the trust game, lightly touched some participants on the back as they were about to play and this led to increased levels of trust. Such results lead one to question whether such a simple action as a hand shake might have a similar effect. Clearly this research is at an early stage, but it is unquestionably an area in which further investigations may lead to a better understanding of the mechanisms underlying the development of swift trust.

The Danger of Excessive Trust

A final aspect of trust must also be discussed in this analysis of how it might be developed and maintained in an HFN. This has been labelled “the dark side of trust” by Gargiulo and Ertug [72], and these authors caution that the obverse of some of the benefits of increased trust should not be underestimated. They note that there are three types of detrimental effect, the first being that the trustor will, potentially, reduce their level of monitoring, vigilance and safeguarding in the particular relationship. Arguably, the whole point of a trusting relationship is that one can safely reduce such levels of monitoring in the knowledge that this will not be abused, but clearly there is a balance to be struck here and, therefore, a danger if an excessively trusting posture is adopted.

It would appear that there are two complementary mechanisms at work here: the reduced level of vigilance means that negative behaviour may not be detected in a timely fashion whilst, at the same time, the trustee may be in a position to take greater advantage of the trustor through the misuse of, for example, sensitive information in their possession. The second danger of excessive trust is that of complacency as a result of which the trustor will not notice a deterioration in the relationship or in the performance of the partner. Finally, Gargiulo and Ertug [72] suggest that there is a danger that one or both of the parties may take on unreasonable obligations to the other. Again, the authors argue that there is an optimal level for such obligations and, hence, a possibility that this may be inappropriately exceeded. It is recognised that revisiting an existing trusting relationship requires us to question people we have previously trusted and this is an unpleasant, but potentially necessary, experience [73].

Operationalising and Testing in Different Settings

A disaster relief operation typically includes a number of HFNs, and the ability of the members of these to work together has far-reaching consequences for the success or failure of the disaster response. With this in mind, this paper has focussed on the model of swift trust that originated in the work of Meyerson *et al.* [74] with the aim of suggesting how this might be operationalised in such a scenario. Clearly, it is necessary for the approach suggested in the paper to be tested in an empirical setting and it is initially considered that this should be achieved in two phases. The first could be undertaken in, for example, a university setting in which a class of students could be set a suitable exercise to be conducted in groups. In parallel

with their task to resolve the particular leadership challenge, individual members of the group could be extracted and interviewed using the five swift trust antecedents as the broad agenda for the interviews. Indeed, if circumstances permit, additional realism could be injected by having some members of the group operating in a “virtual” way and the resulting levels of trust between the core team and its virtual members compared.

Based on what would, in effect, be a pilot of the main research effort, testing the swift trust framework in an operational setting would be the next stage. This, unfortunately, would require the advent of a significant rapid onset disaster in which multi-sourced teams such as the UNJLC are deployed. With the approval of their host agency/NGO, it is anticipated that researchers could undertake a number of interviews with key personnel both in the field and at the headquarters which were, again, based around investigation of the impact of the five antecedent factors posited within the theoretical framework. Self-evidently, such research would require particularly careful management so as to be timely and yet not interfere with the vital life-saving work of the organisation itself.

Summary

The swift trust model seems highly applicable to the humanitarian logistics context, and this leads to a number of important considerations that should be born in mind by the leader of a post-disaster team. However, there is only so much that the leadership of an HFN can do, and there would also appear to be an onus on the broader humanitarian community to play its part by developing pan-NGO mechanisms such as a standard course (and associated certification) for humanitarian logisticians, together with a register of those who are appropriately qualified. It is recognised that this is not a simpler task, not least because of the concomitant requirement for agreement on, for example, what qualities are needed to be a successful humanitarian logistician. Such an approach also implies the existence of some form of audit function and, indeed, agreement amongst NGOs that they should be subject to such a regime. Nevertheless, the fact that these are clearly tricky issues is not, of itself, a reason for not embarking on such a course of action.

In addition to testing the model in the aftermath of a disaster that has seen the formation of HFNs, a further strand of research would be to understand how one might identify a successful organisation (i.e. that in which a high level of inter-personal trust exists) from an unsuccessful one. In the case of the latter, not only would it be instructive to understand the nature of the perceived failings, but also the implications for the beneficiaries. It would be hoped that such an analysis, which reflects the reverse of the first line of enquiry, would help to triangulate the practical development of this model.

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