

RUNNING HEAD: TRUST RELATED

Trust Related to Certain Mind Processes

Raimo J Laasonen

Project Researcher

Nummela/Vihti

Finland

Abstract ¹

The research is sequel to the former researches the purpose of which is to inquire the mind processes from a different angle with newer concepts than used to do. The focus of the research was an attempt to answer the question: How does trust relate to the mind processes under scrutiny? Data and the dyads were obtained from an information competition through a video recorder. N was 56 or 14 contests were recorded. Reliability of observation proved to be 0.91 as assessed, sequentially. The overall reliability was 0.93. The analysis of the process based on the usual and dynamic probabilities of the responses. The proper device of the analysis was conditional probabilities between the bursts of the processes. The results indicate that trust is the shifter, especially the social shifter that keeps the transmuters of the dyads in going. Furthermore, trust is the intervening relational process between gender, and former experience and the transmuter that produces and works up the mind processes. Thus the shifter much regulates what kinds of mindamics grow and develop when persons are in the minimum social group, at least, under these research circumstances.

¹I gratefully acknowledge the help of John G. Holmes and Jeremy Dugash in preparation of this manuscript.

Trust Related to Certain Mind Processes

The research is continuation with the former researches that dealt with origin, development, and functioning of the mind processes. The purpose of the research is to answer the question: How does trust relate to the mind processes? Trust is a process relationship. Thus the research is an expansion from the former researches because relationships did not include in the project.

The previous research proved to be corroborative that tested the hypothesis: if environmental form bound meanings cumulate, then the croupier process utilizes the former experience to create a mental shape, whom the croupier process transmutes into a configuration; through a mindy with the help of the former experience; sex sets standards according to that the whole process runs.

The mind processes in question are: an initial form = a hazy process; a mental shape = a vague process; a mindy = an organized process; and a configuration = an organized process with experiential contents. In addition, gender and former experience are antecedent variables for other ones. One of the problems in behavioral explanations is to use old concepts with new found behavioral phenomena. That is why the new concepts were derived from the concept

of the mind to have organization and freshness for interpretation. The answer to the question is that the trust (according to the definition) is a shifter and an intervening process between gender, the former experience and the mind processes. Thus the variables and the processes under scrutiny are: gender, the former experience, the trust, the croupier or the regulator of other mind processes, the initial form, the mental shape, the mindy, and the configuration. In this context, I have to remark from a thing one behavior is equal to one process. The materialistic reason is the present conception that the brains involve everything a person does. That makes easier to see what has been done.

Method

Derivation of Terms

The derivation of the terms is not an etymological adventure but rather a straightforward attempt to construct the concepts which adapt for dynamic of the mind on a nonspatial condition. Previously, I notified of the equality of one behavior per one process. That is the basis where the derivation begins.

The mind is not defined because it is acceptable to deduce from an empty set. Instead the mind characterizes as a system that uses and utilizes

mindy, and the configuration. Mindition is movement as bursts of the mind processes; not necessarily at physical time but at its complement of mind time. Bursting is a natural way of motion in the organic mind. It also is quick. It is difficult to think of a continuous functioning of the mind because no inner discriminations would be possible and active rest states would remain out. That refers to the discrete nature of the processes. So mindition appears in bursting because it is specific to the mind differentiated from motion in space. Mindic(es) is relational movement between the minditions at time. Mindic as a verb shows effects between the minditions. Thus the mindic indicates moving interaction, moving influences, or functions between the minditions. Mindamic is the most extensive of the concepts and it purposes the set of all the mindices under scrutiny. So the mindamic is a subsystem of the mind that is researchable. In this context, I do not want to go to the questions about mind or body, mind and body as well as the nature of the possibilities of the mind to research the mind. The simple reason is the questions are still eternal. So that the preference is for the matters that one is able to do. Postulate of the mediating processes between the mind process corroborated (Laasonen1996,

Unpublished). Diffusion as a mediating process remained rather dim as a concept earlier but it means about the same as spreading activation in semantic networks (Taber & Timpone, 1996, p. 29). The deviation emerges from the definition of the unit of the mindamic. In Rempel and Holmes and Zanna (1985, pp. 95-98) different definitions of trust are presented and a three component theoretical construction is generated for close relationships. However, emphasis of this research is not on close relationships; rather the relationships is task oriented. So the definition of trust for the close relationships is not translatable into the present situation. That is why somewhat different definition is needful. Trust, in this context, is defined as a permission of a person to do things on conditions of another person. The definition bases on the principle of reciprocity that produces conditional human behavior. If you behave in a certain way then I behave in a certain way. Thus persons set conditions for behavior of each other. So the minimal conditions indicate trust because the conditions assume control that is not so strict in the minimal situation.

Data Gathering

Data were obtained from a videotaped information

contest where two dyads compete with each other through 6 tasks. The winners continue and the losers drop out. The tasks differ and the questions vary in the way; there are not the same questions twice or several times. The members of the dyads discuss after the question and decide who of them answers. However, the leader side of the contest is not the one, essential, but the responses or the answering that form the basis of inferences. The data contained 14 hours videotape. That made 56 subjects. Furthermore, the author did not participate in the contest due to one-way communication in TV. Thus no ethnographic influences exist.

Observation

Observation of the tapes demanded definitions and organized behavior to reach the relevant processes. That is why, except the croupier process, the response categories were constructed.

The initial form or the hazy process included behavior that observably was confused or uncertain such as I don't know; I am not certain; next question. The response indicated that the subject did not have necessary information to produce an adequate answer.

The mental shape or the vague process included such answers that showed a not clearly identified

thing the question presented such as Well, it may be; possibly. The mindy or the organized process included wrong answers and guesses that indicate the existence of the plain organization without experiential content needed in the right answers.

The configuration or the organized process with experiential contents was the right answers.

As to the former experience, the number of the won tasks implied the amount of the former experience because the questions presumed acquired knowledge.

Gender was observed directly.

The processes got letters from d to g and in observation the answers were tallied with the letters in the observation form, task by task. Duration of the tasks was registered from the clock of the video recorder in minutes. The procedure resulted in the raw data matrix.

Results

Tallying is not enough for an analysis because of lack of bananas. So it was necessary to develop such a matrix that is analyzable according to the system of the derived concepts. The analyzable matrix derives from a sequence of arrangements and calculations.

The frequencies of the tallied processes task by task, gender, and the former experience were

calculated for the members of the dyads. Naturally, both members got the same frequency in the former experience from the won tasks. The trust frequencies for every member of the dyad formed from all the answers during six tasks. Simultaneously, the duration of the tasks was noted down for further operations. The procedure resulted in the matrix where gender and the former experience and the processes were in the columns and the dyads in the rows with the duration.

Next phase was to divide the process frequencies by the duration task by task to obtain the mindition matrix. However, time varied in the tasks. That gave a good reason to scale the columns of the mindition matrix to have them in the similar scale. Gender was a problem.

There were 51 men and 5 women and that is not a detail that tells gender as a variable. That is why, for the sake of balancing gender a proportion $51/56 = 5/x$ applied to have a coefficient for women in gender. The x was 5.49; so $5.49*5 = 27.45$. Next an equation of a linear combination was constructed $g = 0.91*56 + 0.91*27.45$. The first part of addition is the proportion of men in the data and the second part is as-if inverse proportion. The calculation resulted in 7.51 for gender. The frequencies of the

former experience converted into statistical probabilities for both members of the dyads, directly. The only relationship included in the analysis was trust. According to the definition trust is an inverse relation because the other member of the dyad allows another one to answer. That is why the probability of trust was defined as $p(\text{tr}) = 1/(f_T/t_T)$, where f_T = all the answers of one of the members in the dyads and t_T = total time of the contests. After that, the scaled and other values were added over the rows and then $\Sigma\Sigma$ -value by whom the column sums were divided. The procedure resulted in dynamic probabilities for the minditions and usual probabilities for the variables. The column sums are in Table 1.

In the same way as with trust, the probability for the croupier process had to be constructed differently. During the series of the research of the mind processes it has become obvious that the croupier is the regulator. The croupier process comprises of three subprocesses, separator, sorter, and collector of environmental information or form bound meanings. In this case the croupier was not

Table 1

Column Sums of Variables and Processes (n=56)

Gender=30.49 Former experience=25.20

Trust=24.61

Processes	if	ms	m	co
Task 1	10.82	3.15	22.37	18.12
Task 2	73.14	14.92	109.82	145.10
Task 3	145.80	4.62	27.18	351.79
Task 4	21.21	1.50	28,91	21.51
Task 5	97.68	14.42	42.65	147.06
Task 6	7.31	.85	4.83	17.18

Note. if = initial form; ms = mental shape; m = mindy; co = congiguration

measured. Thus every subprocess has an equal probability to function or 0.33. Calculation of the total probability for the croupier process gives the value of 0.32. However, before concentration on more detailed results reliability of observation was necessary to assess.

Reliability of Observation

Reliability is a necessary condition for validity. So validity implies reliability. Thus no reliability without validity. The original frequencies of 14 contests, except the ones of gender, included in the assessment of reliability.

The frequencies converted into z-scores for calculation of correlations between 14 contests and with the sum frequencies along time. The sequential reliability indicates stability of observation and the reliability coefficient with the sum frequencies shows overall consistency of observation. The correlations are in Table 2.

Table 2 does not give the right picture of calculation. The reason for that is the special case of the covariance matrix, the tridiagonal matrix; ones in the diagonal and the sequential values in

Table 2

Sequential and Overall Correlations of Contests
Sequential

time —>

1 (.79) 2 (.82) 3 (.74) 4 (.70) 5 (.77) 6 (.77)
7 (.81) 8 (.84) 9 (.84) 10 (.81) 11 (.82) 12
(.82) 13 (.84) 14

Overall

1 2 3 4 5 6 7 8 9 10 11 12 13 14
 Σ .84.80.84.78.83.80.84.83.84.85.83.85.84.85

it's both sides because the correlation matrix is symmetric. The correlations based on z-scores. So it was appropriate to use the formula in Nunnally (1967, p.195 (6-23)). The sequential coefficient of reliability proved to be 0.91 that is rather tolerant as well as the overall coefficient of 0.93.

Analysis of Relations

The minditions and the variables have a certain time order that has to be taken account. Gender comes first, then the former experience, trust, and the croupier process. In a similar manner, the initial form is the first, the mental shape is the second, the mindy is the third, and the last one is the configuration. Next phase of the analysis was to assess the mindices of the minditions. In Table 2 the conditional probabilities are calculable from the formula in Anton and Kolman (1978, p. 268), conveniently. Thus the conditional probabilities correspond with the mindices defined at the beginning. Gender and trust are the only ones that deviate from other operators. Gender is a variable and trust is a relational mindition between the members of the dyads. Others are pure minditions.

Addition of the values of gender, the former experience, and trust and division by the sum gave the probabilities to start. In Table 3 there are the

Table 3

Initial Probabilities of Analysis

	p
Gender	.13
Former experience	.44
Trust	.43
Croupier process	.32

	T1	T2	T3	T4	T5	T6
Initial form	.20	.21	.28	.29	.32	.24
Mental shape	.06	.04	.00	.02	.05	.03
Mindy	.41	.32	.05	.40	.14	.16
Configuration	.33	.43	.67	.29	.49	.57

Note. T1-T6 = Tasks from 1 to 6

probabilities from that the proper analysis started. The question is about special movement where motion relates with motion called a mindic that is motion, too. That is why the probability 0.25 was defined as a limit for the minditions. The probabilities above 0.25 included in the analysis in the place of the process bursts. The probability is the same as the one before the mindamic; the initial form, the mental shape, the mindy, and the configuration have the same chance of occurrence 'in the state before mindamic'. First, the mindices were calculated without their antecedents starting from the vector [.25,.25,.25,.25] with the vector after the first task. The conditional probabilities between the antecedents: gender, the former experience, trust, and the croupier process were calculated, too. The conditional probabilities between the antecedents are in Table 4. The probabilities of auto-loops, and of the

Table 4

Conditional Probabilities between Antecedents

	time—>		
Gender	Former experience	Trust	Croupier
Gender	.33	.32	.24
Former experience	.36	.36	.26
Trust		.57	.42
Croupier		.57	.42

Table 5

Mindices of Mere Process and with Antecedents

time—>

Mere process

t0	t1	t2	t3	t4	t5	t6
	co	co	m	co	co	co
m	.57 m	.70 if	.40 if	.61 co	.61 co	.61 co
co	.58 co	.70 co	.40 m	.60 co		
					.61 co	

With Croupier Process

	Task1	Task2	Task3	Task4	Task5	Task6	cr
	m	co	co	m	co	co	
cr	m	,27	.57	.70	.58	.60	1.00
cr	co	,27					
Task1	m	.20					.35
Task2	co		.29				.28
Task3	co			.35			.35
Task4	m				.00		.58
Task5	co					.20	.40
Task6	co						.61

Note. Abbreviations mean; cr = croupier process; if = initial form; m = mindy; co = configuration.

proper mindices included in the calculations. Their significance becomes in sight in the conclusions. In this context, I have to notify of differentiation between the mindition that have one-way or two-way influences in each other. Otherwise, the conclusions may appear messy. The former experience is what it is; thus one-way effects. From trust on the time order the minditions form feedback loops with the differing conditional probabilities (the mindices).

On the other hand, there were the mere process calculations in chains and with the croupier process. The feed back loops were calculated reversing the conditions and subtracting the self-loops from the obtained values. The results are in Table 5.

In Table 5 the mere process part is in sequence. The croupier part includes the self-loops in the lower diagonal and the feedback probabilities in the last column. In the left corner of Table 5 are the mindices where the mindamic begins. In an earlier research Laasonen (1996, Unpublished) the postulate of the mediating processes between the mind processes corroborated. Thus it is sensible to

assume diffusion, absorption, and assimilation to be present in the mindamic.

The mindices ranged from 0.20 to 1.00. So it was necessary to classify the mindices according to intensity. Five classes were enough to cover the range. In increasing order the classes are: least intense, 0.200-0.000; less intense, 0.400-0.205; medium intense, 0.600-0.405; more intense, 0.800-0.605, and most intense, 1.000-0.805. Summarily, Tables 4 and 5 include information how the antecedents and the mere mindamic are related with each other. In other words, how do the usual probabilities and the dynamic ones mindic each other. Furthermore, there is the classification of intensity of the influences for a special nonspatial movement. Can one demand more for the conclusions. What?

Discussion

The conclusions appear in two ways for the sake of clarification.

Old terms

The basic tenet of the conclusions is: movement of the processes is organismic (Bahm, 1985, p. 76) and nonspatial, a kind of dynamic ordinal calculus of the mind or organizing with probabilities because all the potential chances do not realize.

The starting point of the entire dynamic system

is auto-bursting of the former experience that takes place in a less intense way in the dyads.

Thereafter the former experience moves trust less intensely and causes trust to function in a medium intense way in the dynamic system. After that the former experience feeds into the croupier process less intensely. Trust in turn ignites the croupier to create a burst of the mindy and of the configuration. Both of which produce new organized outbreaks of the mindy in a less intense way.

Modification of the forming organization occurs with least intensity.

Thereafter, the transformed organization absorbs into the croupier less intensely. The function of the croupier produces motion in trust that again modify the croupier to change its function with medium intensity. The previous dynamic takes place on the conditions of gender that restrains the processing of the former experience, of trust, and of the croupier, less intensely. Thus the influences of movement go from the former experience to trust and to the croupier then from the croupier to the burst of the mindy and of the configuration and back to the croupier in control of gender. The former experience functions as a feeder for the croupier and as a

regulator for trust, in a less intense way.

After the absorption of the reorganized mindy the croupier changes trust. Trust either shifts the turn to another member of the dyad or maintains the turn in the member who answered previously. Next, the croupier bursts the configuration with medium intensification. The configuration transmutes less intensely and feeds back into the croupier medium intensely. Then again negotiations follow who answers the question that modifies the function of the croupier to produce a burst of the configuration more intensely than previously. The transmutation of the new configuration takes place less intensely and the feedback to the croupier maintains the pace of the transmutation.

Then again the negotiations follow and the croupier changes to produce the transformed mindy with medium intensification. In this place, it is exceptional that the burst of the mindy does not transmute. The mindy boomerangs into the croupier as such. Again, the former experience regulates trust and feeds the croupier. The negotiations go on to transform the croupier to produce the outbreaks of the configuration with medium intensity that transmutes in a least intense way but feeds back to the transformed configuration less intensely into the

croupier for the further transmutations. Finally, the loops produce the burst of the configuration that maintains its form and experiential contents as organized. The contest is over and the dyad that received more scores than the other one continues. During the entire dynamic the croupier functions on the level of medium intensification.

New Terms

Clarification presumes that adequate concepts are utilized to make the results more according to the new terminology because of the new results. Thus it is suitable to use concepts that indicate the existence of the operators or of the agents that produce behavior. Gender is gender. The former experience is a feeder because it conveys from experiential characteristic constituents of the former processes to new situations. Trust is a shifter because it includes in the negotiations and the decisions; who responds to the stimuli. The croupier is a transmuter for the reason that it produces and assimilates the transformations of the mind processes. So the transmuter does the necessary transformations by transmuting the form bound meanings adaptive to the situations. Taking into account of the earlier construction of the terms: the process, the burst, the mindition, the mindic,

and the mindamic; together with the operators produce understandable conclusions where the operators keep other ones in motion in different ways.

Well, the feeder mindics itself, the shifter, and the transmuter less intensely. The fact means that the feeder behaves according to low mindition that has rather high contagious effects on the shifter and the transmuter. The feeder raises the self-mindices of the shifter and the transmuter. So the mindices are accelerative; between the feeder and the transmuter, too. The restrain of gender remains less intense with the feeder, the shifter, and the transmuter. That is why it is comprehensible that the self-mindices and the mindic-loop between the shifter and the transmuter are at the medium level of intensity. The entire mindamic is explainable with the new concepts as follows. The feeder mindics the shifter in a regulating way and the feeder mindics the transmuter offering 'substance of the former mind processes' less intensely. The shifter mindics the transmuter medium intensely giving turn to responding and keeping the transmuters of the dyads in mindition with medium intensification. The transmuter mindics the organized burst of the mindy. In addition, the transmuter produces the burst of the configuration

including the characteristic constituents of the adoptive processes, formerly. Both bursts absorb into each other less intensely to transform into a new organized burst that again the transmuter absorbs less intensely. The forming mindy processes least intensely. However, the absorption mindics less intensely but dropping in the shifter mindics with medium intensity. The shifter mindics back to the transmuter that self-mindics at the medium level of intensity.

The transmuter works up the absorbed mindy and mindics the configuration medium intensely. The transmutation of the configuration (the self-mindic) takes place less intensely. So does its transmuted version back to the transmuter. Again, the loop between the transmuter and the shifter occurs. Next, the transmuter mindics the configuration more intensely than before. The necessary transformations follow-up with the previous self-mindic and the back mindic also maintains the previous level of intensity. The transmuter again modifies the transformed configuration. There occurs an exception this time. The transmuter produces the mere organized burst of the mindy. No modifications take place and the organization boomerangs into the transmuter. The transmuter takes the organized burst

under transforming and mindics the reformed configuration with medium intensity.

However, the transforming of the configuration processes least intensely. The transmuted configuration absorbs back into the transmuter in a less intense way. Finally, the transmutation of the burst of the configuration produces the needed configuration with perseveration. The reason for that is the self-mindic of the configuration is at a more intense level than any of the self-mindics, previously.

Returning to the original question of trust in the mindamic, the answer is. Trust is the shifter, especially the social shifter that keeps the transmuters of the dyads in going. Furthermore, trust is the intervening relational process between gender, and former experience and the transmuter that produces and works up the mind processes. Thus the shifter much regulates what kinds of mindamics grow and develop when persons are in the minimum social group, at least, under these research circumstances.

During last two decades a complexity theory has raised its head taking into account of interaction between variables. Interaction of the variables as such is not a new concept for example, Blalock (1968, p. 178). The additive models in behavior are easier

to deal with. There is no certainty about; if rough approximations with real behavior are useful for further development of behavioral theories. One possibility is to try to model connections about in the same way as Corter (1996) but with the exception of replacing connections with processes and the variables with the processes. However, there is no denial of the mind processes and social relations associate but finding out something regular may take time. The use of the probability calculus may be a suitable device for behavior as a complex system. As to the further research, the next step might be a study of the mind processes with immediate social environment or face-to-face situations.

References

- Anton, H. & Kolman, B. (1978). Applied finite mathematics (2nd ed.) New York: Academic Press.
- Bahm, A. J. (1985-86). Holons: Three conceptions. In R. K. Ragade (Ed.), General Systems: Vol. XXIX (pp. 75-80). Louisville, KY: Society for General Systems Research.
- Blalock, H. M., Jr., (1968). Theory Building and causal inferences. In Blalock H. M., Jr., & Balock A. B. (Eds.) Methodology in social research (pp. 155-198). New York: McGraw-Hill Book Company.
- Corter, J. E. (1996). Tree models of similarity and association. Thousand Oaks: Sage Publications.
- Laasonen, R. J. (1996). An Empirical Test of a Postulate of a Mediating Process between Mind Processes. Unpublished manuscript.
- Nunnally, J. C. (1967). Psychometric theory. New York: McGraw-Hill Book Company.
- Rempel, J. K., Holmes, J. G., Zanna, M. P. (1985). Trust in close relationships: Journal of Personality and Social Psychology, 49, 95-112.

Taber, C. S. & Timpone, R. J. (1996).

Computational modeling Thousand Oaks: Sage
Publications.