Running head: INTEGRATION

Integration, Information Thresholds, and Arrangement in Mindamic: A Probabilistic Causation Analysis

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Abstract

The objective of the research was to scrutinize probabilistic causalities between integration, information thresholds, and arrangement in mind dynamic. Data obtained from videotaped sessions with structured observation. The participants had to accomplish four tasks. The participants were 39 females, and 83 males. Reliability and validity assessed as probabilities. The frequencies converted into probability matrices, and sampling without replacement was necessary. Thereafter, a causal state space originated, and maintained through Householder matrices. The Bayes formula with joint distributions in a matrix form applied to result in the start matrix for the causal dynamic. The reduced start array matrix powered from 1 to 6. There are the probabilistic causalities between the integration, the thresholds, and the arrangement. Theoretic results show. It is the entire mind of the persons strives to form patterns for the causal functioning, continuously. Furthermore, the whole mind conveys mental contents under the same patterns. The patterns remain but the contents of the processes differ during the mindamic.

KEY WORDS: mindamic, consolidated response, adequate response, causal state space, information threshold, pattern, contents.

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Until now, there has been some constructive scrutiny concerning the mind processes in mindamic. Therefore, some background information is necessary to see how it was arrived at the current problem. The results base on the empirical researches.

The first results indicated an executive process in the mind that was responsible for the mental shape or a vague process formation in the serial information processing with parallel parts. The process called a croupier because the croupier separates, sorts, and collects behind a play desk. Information defined as form bound meanings, in the same way as syntax, and semantics intermingle. The vague nature of the mental shape forced to find a better concept for a unit process of the mind. A direct derivation was available and it called a mindy. It defined as an organized mental shape to be open, discrete, and kinetic. The mindy applied to several researches to find out whether it was suitable for its purposes. The main work took place in the age groups of 13–16.

It proved to be that a serial preparatory process and a parallel making process were responsible for the mindy construction. The processes alternated and ended in the serial state in about 16 years of aged. On the contrary, the croupier process did not develop fully until later. The collector of information had no links between the separator and the sorter of environmental information.

During time, it became obvious. The mindies were to have mediating processes, which convey information and modify it from process to process in the mind. In addition, two states of the mindies were postulated elastic and plastic. In plasticity, the mindies transformed, and thereafter returned to a new elastic state. Three mediating processes verified: diffusion of information in the mind, absorption receiving but not sending information to other mind processes, and assimilation for new mindies to emerge. However, the mindy concept was not convenient enough because former experience filled in it. So, a configuration replaced with the mindy with experiential content. The mental shape, the mindy, and the configuration resulted in for further scrutiny.

There arouse a question: Did the three mind processes have mutual relations? They had but different ones with different background variables such as gender, former experience, and work experience. There still remained the question about the number of the mind processes. Thus, it was necessary to return to the croupier process because the scrutiny indicated that the croupier was capable to explain transmutable changes between the mind processes.

The results showed; there took place transformations between the processes. Besides, in addition to the separator, the sorter, and the collector of information, it was necessary to include a transformer into the croupier process. Consequently, the croupier modified into a transmuter. It contained changes between the mind processes, from an entire change of a process into another one and partial changes, too. The resulted executive system, the transmuter included in the sub processes of the separator, the sorter, the collector, and the transformer in information processing. A shortage remained that was crucial. The concepts did not contain dynamic. Therefore, it was necessary to construct some preliminary concepts that would include dynamic. One way to solve the problem was the direct derivation of the concepts from the mind term. Accordingly, a mindition defined as a process with discrete bursts. A mindic was definable as a relational process between the minditions. Therefore, the information processes processed other information processes. The mindic as a verb indicated process influences between the minditions be they interactive, moving, functional, or structural.

Mindamic was the most extensive of the dynamic concepts because it included other concepts and meant the process including the minditions and their mindices. The concepts were half-formal and they were replaceable with more substantive ones that contained empirical contents. It was somewhat questionable that the minditions (the mental shape, the mindy, the configuration) were enough as the mind processes. The reason was: there might be more diffuse and more organized processes in the information processing of the mind because the number of the degrees of freedom in the mind began to appear greater than assumed. Therefore, the assumption was that different minditions contained different amounts of information and information was organized. Therefore, a process of an initial form developed before the emergence of the mental shape. The initial form was a hazy process of the mind. Furthermore, an empty process, a process without information, was as a necessary antecedent to the initial form.

Thus, there emerged a sequence of the mind processes: the empty process, the hazy initial form, the mental shape, the mindy, and the configuration. It was easy to think the processes to form a sequence. It was not the case. The processes transformed their functions, and tasks. There was no hierarchy or another kind of dynamic order. For example, the processes swapped their processing depending on the background variables. The mind seemed to have more number of the degrees of freedom than overt behavior indicated. Clarification had its place here with the entire process system. In the entire process system, the processes processed other processes. It meant that the minditions mindiced other minditions.

The idea of the processing processes or the process system appeared somewhat strange according to current knowledge and through ransacked literature. The transmuter comprised of the separator, the sorter, the collector, and the transformer in information processing of the mind. The separator differentiated information from environment, the sorter arranged it, the collector connected information, and the transformer turned information into another information that coped with stimulus circumstances.

As an entity, the environmental information transmuted through the transmuter into overt behavior. The empty mindition purposed a process with no bursts of information. The initial mindition meant a hazy process. For example, a person has a faint idea about a thing, a matter, or a person. The shape mindition, the former mental shape purposed a process where some figuring emerged and contour formation began. The organized mindition meant a plain formal process that had not experiential substance. For example, a person knew a face but did not recollect the name.

The experiential mindition purposed the substantive process or the process of reality. The mindices were selective diffuser, absorber, and assimilator. The selective diffuser was a new mediating process that activated the processes because the mind utilized the processes it needed, not the ones running.

Along time, it became obvious that the transmuter proved to be inadequate because the person transformed the mental processes before overt behavior. The behavioral changes became quite different from inside out. Therefore, the executive system called the mental organizer emerged because it had wider intensions and extensions, especially the causal dynamic between both inner and overt behavior. The assumption was that the mental organizer caused action that took place under a mind process. The mental organizer comprised of the following processes: classificator, sorter, grouper, collector, transfigurator, transformer, metamorphoser, and transmuter. A new measure for the mindies emerged, a dyna that was a kinetic loop of behavioral processes applicable to chaining the processes.

According to the researches up to now the mind appears to have the greater number of the degrees of freedom to work than the overt behavior makes believe. The results between the processes are not well-ordered, mainly. The processes are in mutual flux, and their functions change without any clear-cut patterns. It looks like ‘a bonobo ride on a tiger lion’. The only result with stability is the mediating processes. The diffuser or propagator diffuses information to other processes. The absorber that takes up information but does not send it to other processes. The assimilator unifies or merges processes.

The former results refer to the direction that the approach to the mind may have been too analytical. It begins to be probable that the human mind runs as an entity, continuously because of the irregularities among the processes. Therefore, the antecedent results warrant present a premise for the sake of the inconsistencies. *The brain is a process system with sub processes. The mind is a total process system working as a unity all the time.* For example, the mind diffuses information; it absorbs information, and it assimilates it as a unity. Therefore, the analytical results may seem as if there were three separate processes but there is the consolidated mind that works.

The premise has certain consequences mapping the brain functions onto or into the mind. For example, an analyzed result in the brain functions has a partial connection with the mind because the mind works as the unity. Therefore, the separate brain result catches just a part of the total function of the mind. Consistently, the boundary of contacts between the brain functions, and the mind may remain open, mostly.

As to the present research integration is one of the processes the mind implements to produce serial responses such as speech. Accordingly, the whole mind of a person integrates. Therefore, saying the person behaves is the same as saying the entire mind works. Another process the mind produces is an arrangement related to a stimulus configuration in an environment. The integration and the arrangement of the persons do not relate, directly. There are intervening variables which are the information thresholds, which the persons apply before they decide to cope with the environment. For example, your task is to assemble a puzzle. Therefore, you integrate piece by piece but there become pauses to adapt the pieces or a threshold where to put the piece in the right place. The pieces in the right places begin to form an arrangement, until the whole puzzle solves.

There is a gap of information between the integration, the thresholds, and the arrangement. The reason is: No available search engines were able to find any connections in the triplet. There is a lack of probabilistic causalities between the integration, the information thresholds, and the arrangement. In a way, the problem has some extension. The persons are to cope with tasks they have to integrate, evaluate what to do, and try to organize things in a proper order to manage with an environment, in daily life. Consequently, it is essential to acquire knowledge questioning: What kinds of probabilistic causalities prevail when the persons integrate, apply to the information thresholds, and arrange tasks?

In this research context, the integration is definable as a consolidated response of persons the mind results. The overt responses are serial. No overt parallel responses exist; speaking to languages simultaneously. Therefore, the consolidated response is definable. The information threshold defines as a point of decision before persons act. No decision implies inaction. Consistently, the threshold implies an arrangement. As with the arrangement it is an adequate response to some environmental aspect. No orderly behavior implies inadequacy. Therefore, the adequate response results.

Human behavior is not perfect. That is why, the behavioral response divide into three categories. A person integrates right; a person integrates mostly right, and a person integrates wrong. In a similar manner, the information thresholds divided into three classes: low, moderate, and high according to the amount of information that is the base in the decision-making. The arrangement included also three categories: a person arranges right; a person arranges mostly right, and a person arranges wrong. The categories and the classes functioned as the variables.

Method

Participants and Data gathering

There were 39 females, and 83 men as the participants. Data obtained from videotaped sessions through the categories. Each session included four tasks whose structure was the same. The time order in the tasks was the integration, the thresholds, and the arrangement. In the integration, the participants had to answer randomly generated questions verbally, which produced scores according to how much the answers increased information in the arrangement. In the threshold item, the participants could decide voluntarily whether they wanted to solve the arrangement. In the arrangement, the participants had to solve the scarcely informative verbal expression.

An observation minutes constructed for the sessions that included in the row heads: Integrates right, integrates mostly right, and integrates wrong, the threshold score, arranges right, arranges mostly right, and arranges wrong. A behavior that occurred in the category scored one. The exception was the threshold scores that included in as such.

The observation minutes turned into the data matrix adding the scores of the participants in each task, except the threshold scores. The column heads of the data matrix included in the four tasks with the order of the categories: integrates right, integrates mostly right, and integrates wrong, the threshold scores, arranges right, arranges mostly right, and arranges wrong. The participants were in the rows of the data matrix. Consequently, the dimensions of the data matrix were 122 by 28.

Results

Constructing Task Matrices of Observations, and Scores

The data matrix offered a means to construct matrices for the four tasks adding the scores over the rows, and counting the answered observations in each category. The resulted matrices were in a row form but transposing the matrices gave the time order matrices, and of the tasks.

Table 1.

Observation Matrix of Tasks

Task 1	Integrates right	122	Low threshold	19	Arranges right	51
	Integrates mostly right	9	Moderate Threshold	18	Arranges mostly right	3
	Integrates wrong	112	High threshold	19	Arranges wrong	2
Task 2	Integrates right	122	Low threshold	19	Arranges right	53
	Integrates mostly right	18	Moderate Threshold	18	Arranges mostly right	1
	Integrates wrong	116	High threshold	19	Arranges wrong	3
Task 3	Integrates right	119	Low threshold	19	Arranges right	46
	Integrates mostly right	13	Moderate Threshold	19	Arranges mostly right	7
	Integrates wrong	119	High threshold	19	Arranges wrong	5
Task 4	Integrates right	116	Low threshold	20	Arranges right	52
	Integrates mostly right	16	Moderate Threshold	20	Arranges mostly right	4
	Integrates wrong	114	High threshold	19	Arranges wrong	4

Table 2.

Score Matrix of Tasks

Task 1	Integrates right	507	Low threshold	169	Arranges right	255
	Integrates mostly right	9	Moderate Threshold	273	Arranges mostly right	15
	Integrates wrong	310	High threshold	418	Arranges wrong	10
Task 2	Integrates right	464	Low threshold	418	Arranges right	265
	Integrates mostly right	23	Moderate Threshold	545	Arranges mostly right	1
	Integrates wrong	294	High threshold	735	Arranges wrong	20
Task 3	Integrates right	531	Low threshold	910	Arranges right	450
	Integrates mostly right	17	Moderate Threshold	1247	Arranges mostly right	70
	Integrates wrong	332	High threshold	1651	Arranges wrong	50
Task 4	Integrates right	440	Low threshold	1333	Arranges right	510
	Integrates mostly right	19	Moderate Threshold	1924	Arranges mostly right	40
	Integrates wrong	270	High threshold	2411	Arranges wrong	40

The low, moderate, and high information thresholds needed a different operation of implementation. In every task, the threshold scores picked up, and after that sorted. Thereafter, the sorted queues divided into three groups from the lowest score to the highest one. The values in the three groups added which resulted in the low, moderate, and the high information threshold scores. The division followed up with the amount of information before the decision-making.

One session comprised of the four tasks. Hence, the probabilities of the observations and of the score matrices added up to ones. The matrices in Tables 1, and 2 converted into probabilities. There is a certain difference between the observation matrices, and the score matrices. The observations did not cumulate but the scores cumulated during the sessions. Consequentially, from the score matrices calculated the cumulative probability matrices for each task while the observation matrices were the common probability matrices as in Tables 3, and 4.

Table 3.

Probability Matrix of Observations

Task 1	Integrates right	.255	Low threshold	.247	Arranges right	.252
	Integrates mostly right	.161	Moderate Threshold	.240	Arranges mostly right	.200
	Integrates wrong	.243	High threshold	.250	Arranges wrong	.143
Task 2	Integrates right	.255	Low threshold	.247	Arranges right	.262
	Integrates mostly right	.321	Moderate Threshold	.240	Arranges mostly right	.067
	Integrates wrong	.252	High threshold	.250	Arranges wrong	.214
Task 3	Integrates right	.248	Low threshold	.247	Arranges right	.228
	Integrates mostly right	.232	Moderate Threshold	.253	Arranges mostly right	.467
	Integrates wrong	.258	High threshold	.250	Arranges wrong	.357
Task 4	Integrates right	.242	Low threshold	.260	Arranges right	.257
	Integrates mostly right	.286	Moderate Threshold	.267	Arranges mostly right	.267
	Integrates wrong	.247	High threshold	.250	Arranges wrong	.286

Table 4.

Cumulative Probability Matrix of Scores

Task 1	Integrates right	.103	Low threshold	.033	Arranges right	.079
	Integrates mostly right	.057	Moderate Threshold	.038	Arranges mostly right	.062
	Integrates wrong	.101	High threshold	.044	Arranges wrong	.042
Task 2	Integrates right	.197	Low threshold	.115	Arranges right	.161
	Integrates mostly right	.203	Moderate Threshold	.114	Arranges mostly right	.066
	Integrates wrong	.198	High threshold	.120	Arranges wrong	.125
Task 3	Integrates right	.305	Low threshold	.295	Arranges right	.301
	Integrates mostly right	.310	Moderate Threshold	.289	Arranges mostly right	.354
	Integrates wrong	.306	High threshold	.292	Arranges wrong	.333
Task 4	Integrates right	.395	Low threshold	.557	Arranges right	.459
	Integrates mostly right	.430	Moderate Threshold	.558	Arranges mostly right	.519
	Integrates wrong	.395	High threshold	.544	Arranges wrong	.500

Samplings without Replacement

The structure of the tasks was similar in the sessions, which warranted for the construction of a ’joint experiment‘. Besides, the tasks were dependent. Therefore, the probability matrices of the observations and of the cumulative scores sampled without replacement. In the common sampling without replacement, the probabilities approach the same values. In this case, the probabilities of the fourth task would become ones. For that reason, the probabilities of the third task subtracted from the last matrix. It resulted in the probabilities of the fourth task. However, the main purpose of the research was to find out the probabilistic causalities. It meant to put up a causal state space, which is the same as maintaining the sums of the covariances as about nulls.

Causal State Space

The obtained matrices of the samplings without replacement turned into squared Householder matrices. Thereafter, the observation matrices multiplied the score matrices. The reason to use the squared Householder matrices was the fact that the householder operation was sensitive enough to delete weak dependencies. Simultaneously, the matrices produced double stochastic matrices.

In other words, the observations weighted the scores, which meant the persons behave. The responses do not behave. The weighted matrices householdered, and squared. They multiplied to a joint matrix. The joint matrix householdered and squared and the result was a 3 by 3 matrix for the Bayes analysis. Until now, the analysis proceeded in the column form but before the Bayes analysis the joint matrix transposed for the Cartesian products. The transposed joint matrix deconstructed to three vectors: the degrees of the integration, the thresholds, and the degrees of the arrangement.

In this phase, it was necessary to construct five Cartesian product matrices because of the knowledge of the internal causation in the integration, in the thresholds, and in the arrangement. It was also important to scrutinize the between causation in the mind dynamic. In the Bayesian analysis, the Cartesian matrices reduce to the joint distributions. When no dependencies exist but the events occur simultaneously implies causation because the dependencies do not mesh with the causation or the process of causing. A 15 by 15 matrix obtained from the five Bayesian matrices. The matrix was householdered, and squared. Only the row maxima with three decimal places retained for the causal dynamic. The causal matrix is in Table 6.

Table 5.

Joint Probability Matrix from Samplings without Replacement

Integrates Right	0.922698	Low Threshold	0.0000298933	Arranges Right	0.077272
Integrates mostly right	0.0772752	Moderate Threshold	9.29022*10^-8	Arranges mostly Right	.0.922725
Integrates wrong	0.0000267005	High Threshold	0.99997	Arranges Wrong	3.28571*10^-6

Table 6.

Causal Matrix for Dynamic

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.798	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.798	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	0	0	1.	0	0	0	0	0	0	0	0	0
Imr	0	0	0	.999	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	0	0	.999	0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	1.	0	0	0	0	0	0
Mt	0	0	0	0	0	0	.999	0	0	0	0	0	0	0	0
Ht	0	0	0	0	0	0	0	.999	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

Dynamic Causation

Against the expectations, the causation in the mindamic does not begin in Table 6 because the matrix power null produces the identity matrix, which means the causalities are dormant. The dormant causal matrix precedes the anticipatory matrix. The probabilistic causalities have an anticipatory nature when the persons form schemes for the future solutions, Table 6. The matrix power two indicates the causalities of the behavior of the persons in Table 7. The second task matrix is in table 8. The third task matrix is in Table 9. The fourth task matrix is in Table 10. In Table 11, the causal dynamic ends because of the diagonal matrix. The next problem is crucial: What is credibility of reliability of observation, and how valid is validity of observation? Well, more seriously.

Reliability and Validity of Observation

The matrix in Table 2 functioned as the initial matrix for the reliability assessment. The matrices transposed to a 3 by 12 matrix. The rows of the matrix turned into the probabilities, and the row sums were ones. If the probabilities of the observation are the same then reliability is one. Therefore, to obtain the criterion vector with values 0.833, one divided 12. The error variances were calculated, and subtracted from ones.

Table 7.

First Task Matrix

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.637	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.637	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	0	.999	0	0	0	0	0	0	0	0	0	0
Imr	0	0	0	0	0	.999	0	0	0	0	0	0	0	0	0
Iw	0	0	0	.998		0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	.999	0	0	0	0	0	0	0
Mt	0	0	0	0	0	0	0	0	.999	0	0	0	0	0	0
Ht	0	0	0	0	0	0	.998	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

Table 8.

Second Task Matrix

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.508	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.508	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	.998	0	0	0	0	0	0	0	0	0	0	0
Imr	0	0	0	0	.998	0	0	0	0	0	0	0	0	0	0
Iw	0	0	0	0		.998	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	.998	0	0	0	0	0	0	0	0
Mt	0	0	0	0	0	0	0	.998	0	0	0	0	0	0	0
Ht	0	0	0	0	0	0	0	0	.998	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

Table 9.

Third Task Matrix

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.406	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.406	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	0	0	.998	0	0	0	0	0	0	0	0	0
Imr	0	0	0	.997	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	0	0	.997	0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	.998	0	0	0	0	0	0
Mt	0	0	0	0	0	0	.997	0	0	0	0	0	0	0	0
Ht	0	0	0	0	0	0	0	.997	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

Table 10.

Fourth Task Matrix

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.324	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.324	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	0	.997	0	0	0	0	0	0	0	0	0	0
Imr	0	0	0	0	0	.997	0	0	0	0	0	0	0	0	0
Iw	0	0	0	.996		0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	.997	0	0	0	0	0	0	0
Mt	0	0	0	0	0	0	0	0	.997	0	0	0	0	0	0
Ht	0	0	0	0	0	0	.996	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

Table 11.

End of Causal dynamic

	Ir	Imr	Iw	Lt	Mt	Ht	Lt	Mt	Ht	Ar	Amr	Aw	Ar	Amr	Aw
Ir	.258	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imr	0	.258	0	0	0	0	0	0	0	0	0	0	0	0	0
Iw	0	0	1.	0	0	0	0	0	0	0	0	0	0	0	0
Ir	0	0	0	.996	0	0	0	0	0	0	0	0	0	0	0
Imr	0	0	0	0	.996	0	0	0	0	0	0	0	0	0	0
Iw	0	0	0	0	0	.996	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	.996	0	0	0	0	0	0	0	0
Mt	0	0	0	0	0	0	0	.996	0	0	0	0	0	0	0
Ht	0	0	0	0	0	0	0	0	.996	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	1.	0	0	0	0	0
Mt	0	0	0	0	0	0	0	0	0	0	1.	0	0	0	0
Ht	0	0	0	0	0	0	0	0	0	0	0	1.	0	0	0
Ar	0	0	0	0	0	0	0	0	0	0	0	0	1.	0	0
Amr	0	0	0	0	0	0	0	0	0	0	0	0	0	1.	0
Aw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.

Note. The abbreviations in the row and column heads mean. Ir=Integrates right; Imr=Integrates mostly right; Iw=Integrates wrong; Lt=low threshold; Mt=Moderate threshold; Ht=High threshold; Ar=Arranges right; Amr=Arranges mostly right; Aw=Arranges wrong.

The procedure resulted in the coefficient of reliability to the integration over the tasks 0.996, the coefficient for the thresholds was 0.997, and the coefficient for the arrangement was 0.990.

There remained the problem of the reliabilities in the tasks. Therefore, the matrix in Table 2 deconstructed to 12 by 3 matrix but it did not transpose. The matrix converted into the probability matrix, and the criterion value was 0.333 if the observation stays the same all the time. In the same way, as previously the error variances were calculated, and subtracted from ones, which produced the coefficient of reliability to each row of the matrix. The first row coefficient was 0.976, the second was 0.828, the third was 0.945, the fourth was 0.994, the fifth was 0.805, the sixth was 0.921, the seventh was 0.989, the eighth was 0.819, the ninth was 0.882, the tenth was 0.968, the eleventh was 0.797, and the last one was 0.846.

For the sake of the validity, it was necessary to obtain the Cartesian products of the reliability coefficients. The outcome matrix had dimensions 12, 3. Simultaneously, it was possible to calculate the average coefficient of reliability from the Cartesian product matrix, this resulted in the probability value 0.893.

In the validity of observation, the question is about whether the scored frequencies have gone to the right categories. The knowledge of the reliabilities made it possible to multiply the 12 by 3 matrix by the Cartesian reliability matrix. The output would indicate the valid part of the observation because the multiplications by the Cartesian reliability coefficients show non-random localization. The $\sum\sum$-values calculated for the matrices, and the $\sum\sum$-value of the outcome matrix divided the $\sum\sum$-value of the 12 by 3 score matrix. The validity coefficient proved to be 0.896. Well, the observation brought reasonable good results.

Discussion

The main findings indicate that there are the probabilistic causalities between the degrees of the integration, the thresholds, and the degrees of the arrangement. As with the table reading the direction in the dynamic tables is from the upper left corner to the down right one.

In Table 6, the persons and their minds have transferred to the anticipatory causalities from the dormant causalities. The dormant identity matrix is not visible.

The anticipation means that the persons construct schemes how they believe to manage with the future tasks. Therefore, when the persons think they will be able to produce the consolidated responses, chiefly, they expect to gather a high amount of information before they decide to respond adequately to the stimulus configuration. However, they assume to manage with a moderate amount of information before the adequate response. In addition, they expect the moderate decision to lead to the adequate response to the stimulus configuration. Alternatively, the persons anticipate the adequate response to be enough for the most part.

In the case, when the persons suppose they will be able to produce the defectively consolidated responses, they assume to accumulate a lesser amount of information for the decision. During the coming dynamic, they think to raise the amount of information for the decision-making. However, the persons presuppose that the high information decision induces the inadequate response to the stimulus configuration, and the response expects to remain as such.

In the future dynamic, the persons assume they will also produce the disintegrated responses then they will manage with the moderate amount of information of the decision-making. Furthermore, they believe they will manage with less amount of information in the decision-making. Moreover, they think the lesser information-based decision brings about a lacking adequate response, which they presuppose to be the adequate response to the stimulus configuration.

The causal, behavioral dynamic begins in Table 7, and the process of the behavior changes. The persons are not able to produce the consolidated responses and the deficiently consolidated responses as they expected while the disjointed responses are as they were in the expectations. When the persons yield the consolidated responses, they apply to the moderately informative decision, which they turn into the most informative decision during the dynamic. The change to the most informative decision, however, causes the persons to respond inadequately, and the persons remain in the causal loop of the inadequacy. When the persons consolidate deficiently which makes them to apply to the most informative decision. The alternative does not hold, and therefore they have to convert the previous decision into the least informative decision. The least informative decision enables the persons to produce the adequate response to the stimulus configuration. The adequate response will stand. When the persons produce the disintegrated responses, they maintain the least informative decision but raise it to the moderate one in the dynamic. The adoption of the moderate informative decision enables the persons to evoke the deficiently adequate response, which will stand.

In the second task in Table 8, things change further. The weakening of the consolidated and mistakenly consolidated responses continues. The incorrect responses stay in the previous level. As the persons generate the consolidated responses, they choose the least informative decision. This time, the decision remains valid. The alternative makes the persons give rise to the insufficiently adequate response that turns out be the adequate response. In the case, when the persons yield the insufficiently consolidated responses, they proceed to the moderately informative decision-making. In addition, they adhere to it. The selection of the moderately informative decision allows the persons to construct the adequate response. On the contrary, the apprehended adequate response appears to be the imperfectly adequate response. In the dynamic, the persons induce the disintegrated responses. In spite of it they select the most informative decision, and uphold it. The maintenance of the most informative decision brings about the persons to create the inadequate response that will stand.

Table 9 tells that the consolidated and insufficiently consolidated responses weaken further. The disintegrated responses stay. In the case, when the persons are able to create the consolidated responses they adopt the most informative decision but they have to lower it to the moderately informative decision. The persons use the moderately informative decision but it leads to an approximately adequate response that will stand as the outcome. In those cases, when the persons are able to produce the not enough consolidated responses, they adapt for the least informative decision. In the course of the causal dynamic, they lift up the decision to the most informative one. The procedure makes the persons to occasion the inadequate response to the stimulus configuration. The false response stays. When the persons construct the disintegrated responses, they utilize the moderately informative decision. Thereafter, they drop the moderately informative decision to the least informative one. The course of action of the persons turns out to be correct because with the help of the least informative decision, the persons are able to create the adequate response.

In the fourth task in Table 10, the persons are able to produce the consolidated and mostly consolidated responses more rarely than before. The disintegration stays stable. When the persons yield the consolidated responses, they adopt the moderately informative decision. During the processing, they elevate the moderately informative decision to the most informative one but the persons are able to create the inadequate response from the basis of the most informative decision. Consequentially, the persons remain in the auto causal loop of the inadequate response. In those cases, when the persons produce the not enough consolidated responses, they choose the most informative decision-making. However, the persons see it best to change the most informative decision to the least informative decision. The application of the least informative decision makes the persons to induce the nearly adequate response that turns out to be the adequate response. In the case, when the persons construct the disintegrated responses, they utilize the least informative decision but during the process, they raise it to the moderately informative decision. The use of the moderately informative decision of the persons makes the persons to create the adequate response but the outcome is just an approximation.

In Table 11, the behavior settles down to the diagonal, which means the causal behavior returns to the dormant causation, except there remains some perseveration that fades away along time.

Theoretically, examination across the causations probably indicates that the entire mind of the persons strives to form patterns for the causal functioning. For example, the causalities between the integrations and the thresholds mirror each other. Then there follows up with a stable state of linearity. Thereafter, the integrations, and the thresholds mirror, again. The change of the thresholds goes by the same patterns as the previous one. The causal patterns between the thresholds, and the arrangements repeat themselves by turns. First, there is the dynamic then comes the stability, and the same order, again. The causation of the arrangements follows the previous sequence. In this context, the observation is the whole mind forms patterns. The entire mind mirrors, stabilizes, and maintains the sequences. It means the whole mind transforms, transmutes, and modifies mental contents as oneness.

Another inference is that the whole mind conveys mental contents under the same patterns. The patterns remain but the contents of the processes differ during the mindamic. In other words, the mind is the timing pattern with contents. It may be a little bit unconventional to think the whole mind to mould itself from a pattern to another patter but the plasticity of the mind concerns the entire mind. Consistently, the whole mind changes as the whole mind. It would be somewhat peculiar to ask a person: How is your partial mood?

Recently there have been constructions to solve the mind, its structure, and function, for example as a network (Kurakin, 2005), (Armstrong-Taylor, 2007). On the other hand, there have been attempts to construct integrated mind theories based on the module structure (Anderson, Bothell, Byrne, Douglas, Lebiere, and Qin, 2004). In a basic sense, the module structure means such an arrangement where the modules are replaceable with similar modules. Logically, how do you replace Broca’s area with a spare Broca’s area?

Doyle, Ford, Radzicki, and Trees approach the mind problem dealing with the mental models of dynamic systems (2003). The process of the mental model is a first-rate way to tackle the mind. The obtained results refer to the fact that in the mental modeling, it might be resourceful to find patterns, and thereafter scrutinize how the whole mind conveys causal meanings in, and between the patters as an entity. Overall, it appears evident the whole mind applies similar patterns to different contents, especially as a unity. If the mind does not work as a unity then the following questions are justifiable. Do you feel fine with your frontal mind? Why am I not able to construct three-dimensional space in the space less ’cortex‘ of my mind? Why is my parietal mind empty? Well, new challenges wait, and next it will be seen how the mind builds up hypotheses from us.

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