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A novel, metaphor-based description of the structural and functional aspects of cognitions for the clinical setting

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In view of the continuous theoretical and clinical expansion of cognitive therapy, the traditional, information processing-based description of cognitions into products, processes and schemata displays certain, mainly clinical, limitations. The authors try to refine and expand this “tripartite” conceptualization by employing a new, clinically relevant metaphor to describe cognitions and offer new ideas of potential theoretical and practical utility. Indeed, the dispositional (structural) and functional (state-dependent) aspects of cognitions may be seen as reflecting an underlying theme that could be labeled “the mind as a parliament”. Conceptualized as such, the various types of cognitions may then be metaphorically described as members of a parliament, who when confronted by environmental constraints, confer, discourse and decide to give meaning to one’s experience and direction to one’s behavior. This paper provides a general overview of this metaphor-driven model and a detailed description of its various components. The potential applications of this model as a clinical and educational tool and its limitations are also discussed.

Key words: Mind-parliament, cognitions, structural aspects, functional aspects.

Introduction

“Metaphors ...should be derived from what is beautiful either in sound, or in signification, or to sight, or to some other sense”

Aristotle,
The art of Rhetoric, 3.2.12¹

“Easy learning is naturally pleasant to all, and words mean something, so that words which make us learn something are most pleasant.”

Aristotle,
The art of Rhetoric, 3.10.2

In clinical practice, one broadly adapted system of cognitive taxonomy identifies three types of interdependent cognitive constructs.² The first content-related construct, cognitive products, refers to ongoing, transient, state-dependent, cognitions such as thoughts and images. The second component, cognitive processes, refers to the style or the mode of processing that characterizes cognitive products. Finally, the last component, cognitive schemata, refers to the most enduring organized structures of prior experience that select, integrate and direct the processing of personal information.

This so called “tripartite model”,³ however, heavily relies on the information processing metaphor⁴ and has been criticized as not adequately addressing clinical needs.^{3,5,6} Furthermore, the ongoing expansion of the cognitive approach has furnished it with several newer concepts,^{7,8} that have yet to be registered into a comprehensive taxonomic system; hence clinicians may be unprepared to integrate these newly-developed concepts into their routine practice. Such a development would be unfortunate, as psychosocial approaches with multiple potential clinical applications such as cognitive therapy⁹ can be a valuable tool in the treatment of mental illness.¹⁰ Therefore, a clinically-focused rather than experimentally-driven conceptualization of the mind could be more attractive to clinicians.

In this paper, we present a new approach to conceptualized cognitions driven by a “mind as a parliament” metaphor, followed by a discussion about its possible advantages and limitations. We suggest that this approach, while preserving established knowledge reflected in the tripartite model, is nevertheless flexible enough to incorporate newly introduced concepts, especially those more suited to the clinical setting.

The Mind-Parliament metaphor

The concept of the “mind”, as collectively the sum of mental or cognitive activities (or cognitions), may be conceived as reflecting an underlying theme that could be labeled “the mind as a parliament”. We further envision this parliament in action with the assembled “cognitions-representatives” operating together, debating on issues of significance, voting upon decisions and planning action. Thus outlined, this “mind-parliament” (MP) metaphor can be described from a structural (dispositional) prospective and from a functional (state-dependent) prospective. By “structural” we mean cognitive activity so habitual in nature that it is fairly constant across situations,¹¹ while as “functional” we define changes in the ongoing cognitive activity over time and across situations.¹²

a. Structural (disposition) aspects of the MP

The structural elements of the “mind-parliament” consist of several domain-specific cognitions specialized for constructing different aspects of one’s experience.

Factual domain: Beliefs and attitudes. There is a wide range of cognitions loaded merely with factual knowledge regarding the various domains of one’s experience. Whether personal, familial, cultural, religious, gender-related, or occupational, these cognitions represent the “solid part”, “material” or the “bricks” of mental construction. Through them, people are able to construe reality with a certain degree of objectivity (evidence-based knowledge), in a less certain manner (beliefs), in a tentative manner (opinions), or in a “like-dislike manner” (attitudes).¹³ A common metaphor for attitudes compares to the view from a “color-tinted window”.

Axiological* domain: values and goals. There is a certain class of cognitions empowered with the ability to weigh things and set objectives, either immediate or distant, thus providing direction, intensity and persistence to one's action.⁷ These types of cognitions are akin to "motives", and for the sake of our metaphor may be conceived as occupying a higher level (upward position) in the MP construction. More specifically, through these mental activities, people are in a position to assess the specific weight of things (values),¹⁴ to express their desires or commitments to certain things (preferences), and to pursue or accomplish some of them through planned action (goals).⁷

"Scientific" domain: Post-dictions and pre-dictions. The discovery of the cause, effects as well as the prediction of future events lies not only in the formal agenda of science, but also, according to Frith Heider¹⁵ and George Kelly,¹⁶ in the heart of every layman. This task is undertaken by at least two classes of major cognitions that operate in a time-oriented framework, namely post-dictions and pre-dictions, respectively.

Certain cognitive activities are engaged in the reconstruction of the cause and meaning of past experiences, a task implying a retrospective view within the mental assembly. Since they influence present behavior by drawing knowledge from past experiences, they belong to the realm of post-dictions. Through post-dictions, people can categorize their experience (labeling), or determine the meaning or significance of those experiences (interpretations), including their internal, implicit, hidden or secret meaning (hermeneutics). Through post-dictions, people can also compare a particular experience against their moral standards (moral attributions), or, by drawing information from various sources (pre-attributions), determine the factors responsible for their experience (causal attributions).⁷

In contrast to post-dictions, there are certain cognitive activities preoccupied with the prediction of future events, a task implying a prospective, fu-

ture-oriented view. Since such activities influence present behavior by forecasting future events, they belong to the realm of pre-dictions. Pre-dictions occupy a central position in cognitive accounts of motivation, emotion and behavior,¹⁶⁻¹⁸ in contrast to some theories, like psychoanalysis, where this role is assigned to post-dictions.¹⁹ Through predictions, people are able to tell in advance what is going to happen (anticipations, expectations), estimate the degree of their own influence upon these future events (locus of control),¹⁷ or their ability to execute certain behaviors (self-efficacy),¹⁸ foresee the effect of these behaviors (outcome expectations),¹⁸ or express their merely intellectual (optimism/pessimism), as well as desired estimations (hope/hopelessness) regarding future events.²⁰

Constitutional domain: Assumptions, schemata and modes. Finally, there are cognitive structures that account for the more abstract, general and enduring characteristics of the mind. These structures can be conceived as the "constitution", or the "foundations" of the mind, and represent the most invisible "parts" (tacit knowledge) of the mind. These attributes imply not merely another type of cognition, but "tools" through which people organize and understand reality (super-ordinate or core cognitions).¹⁶ They share some similarities with the concept of traits (the building blocks of personality), but unlike traits it is not clear if these structures are persistently or periodically active.²¹ The content of their information is manifested in a constellation of interrelated beliefs and attitudes (propositional aspects) while their procedural aspects dominate and shape the individual's information processing style.²¹ Through them people are able to construe their experience of themselves and the world in various levels of abstraction: From an elementary level and in a conditioned-type manner (rules and assumptions), to an intermediate level presented in an unquestionable form, mainly around issues related to the definition and the experience of the "self" (schemata), and finally to an even more integrated level of representation including bio-psycho-social aspects of experience (modes).²²

* From gr. *axios*, worthy; and -logy: The branch of philosophy dealing with the nature of value and the types of value as in morals, aesthetics, religion, and metaphysics-Webster's Dictionary, 1977.

b. Functional (procedural) aspects of the MP

Having outlined the structural (disposition) perspective, the mind's faculties are ready to function within the individual's temporal and contextual frame. Several "representatives" gathered in the "main conference room" exchange views about the incoming and outgoing events, through which the "parliament" interacts with the physical world. From a clinical point of view, the most significant functional aspects of the mind are described below.

Content-related aspects: Thoughts and images. From a content-related point of view, the ongoing, transient, state dependent or situation-specific cognitions, the so-called "stream of thought", consist of thoughts and images. They are considered to be the end result of the thinking process (manipulation of symbols), corresponding roughly to cognitive products of the tripartite model. "Self statements" or "internalized verbalizations",²³ "automatic thoughts",²⁴ or "internal or private dialogue",²⁵ are but a few of the various terms used to describe certain aspects of such cognitions, that are especially important in cognitive psychotherapy. Beck²⁴ describes "automatic thoughts" as a series of idiosyncratic cognitions, differed from the commonly reported ideation, as being automatic, rapid and barely noticed during emotional encounters.

Process-related aspects: Appraisals and heuristics. Besides their content-related aspects, automatic thoughts are characterized by a specific processing style as well.¹⁹ These functional aspects, which "underly" automatic cognitions and are loaded with evaluative and coping properties, are related to the concept of appraisals, which also possess these properties.²⁵ Appraisals are a series of related cognitions, which are unfolded when a person evaluates the significance of a specific transaction and its implications for personal wellbeing.²⁶ Specifically, through appraisals, people are able to determine whether a situation is problematic (primary appraisals), assess available resources to manage the situation (secondary appraisals), and reflect on the effectiveness of these evaluations and coping resources (re-appraisals).²⁶ As evaluative mechanisms, appraisals may reveal the underlying strategies

from which they are drawn. When confronted with a stressful situation, people employ simple rules or strategies called heuristics, which reduce complex judgmental tasks to a set of simpler operations.²⁷ Although these are "fast-track defensive algorithms that are sensitive to threat", hence serving an evolutionary adaptive function, they nevertheless oftentimes lead to systematic and predictable errors, already described by cognitive therapists.²⁸ Thus, the distortions of information processing in depression described clinically by Beck, are the same events that are labeled "heuristics" by Tversky and Kahneman.²⁹

Emotion-related aspects: "Cold" and "hot" cognitions. Each appraisal is a function of two broad classes of variables, situational and dispositional.²⁶ Regarding stressful appraisals, the situational variables consist of such events as harm or loss (damage already done), threat (potential for harm/loss), and challenge (opportunity for mastery, growth or gain).³⁰ The dispositional class can be any element of the MP, such as attitudes,³¹ commitments,³⁰ values,¹⁴ beliefs and expectations³² and attributions.³³ These cognitions, as long as they remain descriptive, fact-oriented, and non-evaluative, are only indirectly implicated in the generation of emotion (cold-cognitions). It has been suggested that in the synthetic process, appraisals provide the emotional "heat" in an encounter ("hot cognitions").³³

Comments

It is the main thesis of this paper that the introduced model of conceptualizing cognitions may offer distinct advances as a framework especially for clinical and educational purposes.

Several authors have argued that important clinical aspects of the mind,^{5,6} whether developmental,³⁴ emotional,³⁵ or interpersonal,³⁶ are not adequately addressed in the traditional information processing metaphor. In contrast, by endorsing the systematic registration of clinically relevant concepts such as appraisals or "hot cognitions", attitudes, goals, modes that surpass the informational stand, the MP

conceptualization can be more attractive and applicable.

The information-processing paradigm has also been criticized as inefficient in guiding clinicians as to which are the most important cognitions amenable to intervention.³ In contrast, the MP approach endorses a more psychopathology-specific registration of cognitions, thus leading to interventional specification, as well. For example, the dysfunctional attributions about past-losses, displayed by “past-oriented” depressed patients, stand in sharp contrast with the dysfunctional expectations about future threats, displayed by anxious “future-oriented” patients.³⁷ Both attributions and anticipations are prominent and distinct components of the MP paradigm, thus amenable to separate evaluation and specific intervention, according to the present-ed clinical entity.

Furthermore, by endorsing a multi-dimensional evaluation, the MP approach allows for the possible combination of several psychopathology-specific cognitions in understanding behavior (conjunctive explanations). For example, attributions shape expectations, yet there is no one-to-one correspondence between the two in understanding and predicting behavior, necessitating the assessment and treatment of both.^{38,39}

By transcribing the various abstract components of the mind (cognitions) to the more distinct aspects of the “parliament” (representatives), the former concepts will hopefully emerge more clearly. Moreover, for mnemonic purposes, the mind’s parliament might be represented by several distinguishable components or “loci”: The factual cognitions (beliefs and attitudes) may be conceived as forming the “walls and windows”, while the scientific cognitions (prost- and pre-dictions) as being represented by the “rear and the front”. The axiological cognitions (values and goals) consist of the “top,” while the constitutional cognitions (assumptions, schemata, modes) may be linked to the “ground.” The main “conference room” of the MP defined by a “back door” (input) and “front door” (output) is occupied by several “representatives” that confer, discourse and decide (functional aspects of cognitions).

By using this method of loci, the proposed model is easily conceptualized and remembered. Hence the extenuation offered by MP does not seem to impose a burden on the unfamiliar clinician’s learning resources in accordance to Aristotle’s plea for “easy” and “pleasant” learning.¹

This metaphor-driven conceptualization of cognitions may draw criticism and raise objections on several issues.

As in the case of every metaphor, MP may be misleading if taken literally, i.e. equating the “mind” with a “parliament”, and not merely as a useful tool for transcribing meaning from one domain to another or generating new testable ideas and hypotheses. In a similar vein, the aforementioned, mainly clinical disadvantages may have their origin in the misuse of the mind-computer metaphor, a model implicitly endorsed by the information processing approach. Nevertheless, appropriate metaphors, when employed judiciously, do have a place in science,⁴⁰ in psychotherapy,⁴¹ or in cognitive therapy.⁴

By assigning some attributes to cognitions i.e. emotionality to appraisals, scientific status to time-oriented cognitions, or motivational properties to goals- it should not be assumed that the former are specifically linked to the latter. Instead, it is conceivable that these attributes are probably distributed –albeit unequally– to all cognitions.

Our preference for endorsing and elaborating on certain cognitive terms over others can be questioned, even though we tried to select the most frequently employed terms in the literature. Our intention is to illustrate the diversity of clinically relevant cognitions in a simple and didactic manner, rather than present an exhaustive catalogue of the various types of cognitions, a task unattainable at present. Besides, future renovations are possible and welcome, as this model appears to fulfill the criteria of generality, extendibility and sufficiency.⁴²

In conclusion, our effort in this article is to promote a new conceptualization of cognitions that will encompass the most important, newly introduced but unclassified, clinically relevant concepts, and define them in a clear and teachable way and perhaps pose some testable hypotheses.

Μια νέα μεταφορική προσέγγιση των δομικών και λειτουργικών πλευρών των γνωσιών για κλινικές εφαρμογές

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Υπό το πρίσμα της συνεχούς θεωρητικής και κλινικής ανάπτυξης της γνωσιακής θεραπείας, η –βασισμένη στο παράδειγμα της επεξεργασίας των πληροφοριών– παραδοσιακή περιγραφή των γνωσιών (cognitions) σε παράγωγα, διεργασίες και σχήματα, εμφανίζει ορισμένους, κλινικούς κυρίως, περιορισμούς. Οι συγγραφείς προσπαθούν να εκλεπτύνουν και να επεκτείνουν αυτή την «τριμερή» διαίρεση, με τη χρήση μιας νέας κλινικά σημαντικής, μεταφορικής προσέγγισης για να περιγράψουν τις γνωσίες και να προσφέρουν νέες ιδέες δυνητικά θεωρητικής και πρακτικής χρησιμότητας. Πράγματι, οι δομικές και λειτουργικές πλευρές των γνωσιών είναι δυνατόν, να θεωρηθούν ότι απηχούν ένα βαθύτερο θέμα, που θα μπορούσε να αποκληθεί «ο νους ως κοινοβούλιο». Κάτω από την θεώρηση αυτή, οι διάφορες πλευρές των γνωσιών θα μπορούσαν μεταφορικά να περιγραφούν ως μέλη του κοινοβουλίου, που ερχόμενα αντιμέτωπα με τις περιβαλλοντικές προκλήσεις, συνέρχονται, συζητούν και αποφασίζουν, δίνοντας νόημα στην εμπειρία του ατόμου και κατεύθυνση στις πράξεις του. Το άρθρο αυτό δίνει μια γενική άποψη του μεταφορικού αυτού μοντέλου και μια λεπτομερή περιγραφή των διαφόρων συστατικών του. Επίσης συζητούνται οι πιθανές εφαρμογές του μοντέλου αυτού ως κλινικού και εκπαιδευτικού εργαλείου, καθώς και οι περιορισμοί του.

Λέξεις ευρετηρίου: Νους-κοινοβούλιο, γνωσίες, δομικές πλευρές, λειτουργικές πλευρές.

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