A Unified Psychology as Part of a General Social Science

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Abstract

Through the original and unique Algorithmic Thinking Theory, the Algorithmic reasoning, and the resultant Algorithmic Principles, the author finds out that running of a thinking system leads, rationally, to consequences of even all psychological phenomena, thus a theoretical wholeness is formed up, and integrated into the general social science proposed by the author.

Keywords: Subjectivity; Algorithm; Hard-Software; Consciousness; Ego.

Introduction

Psychology, like economics, is an interesting but awkward discipline, as it is not easy to clarify its themes, and it is not satisfactorily theoretical. Psychology is vaguely related to the thinking system, the minds. However, an original and new thinking theory, inspired by computer principles, surprisingly resolves various theoretical puzzles in both social sciences and psychology, thereby deductively connecting them together, toward a unified general social science where all major psychological branches and schools can play their roles. As one of the series introductions (Li, 2022a-d) of the theory, this essay outlines its psychological applications.

This theory was originated independently by the author to solve many theoretical conflicts[1] in economics, then was found as a creative combination of some existing thoughts[2]. However, this theoretical approach is so unique, wholesome, simple, and fluent that the readers need only to enter it first, then can properly relate it to literature in very broad and interdisciplinary relevant scopes.

Algorithmic Thinking Theory

The theory, named the “Algorithmic Thinking Theory” (ATT) or “Algorithm Framework Theory” (AFT; Li, 2009-2022), a modified model of computationalism, says that human uses multiple and finite “Instructions”[3], the assumed innate universal tools in a human brain, resembling the instructions in a computer, to process information to compute or “think”,

serially, selectively, roundaboutly[4], and economically. An Instruction, e.g. “Add”, “Multiply”, “And”, “Move”, “Search”, “Randomize”, “Halt”, was originally a category of task that a user “instructed” a computer to do, then became the category of a basic job that a computer could do. An Instruction works on no more than two data (information), getting no more than one result, which illustrates how tiny a unit of “thinking” is. A permutation of Instructions in certain order or style constitutes a “program” or an “algorithm” to solve a theoretical or practical problem. Algorithms, the methods to form a program in computers, can be re-interpreted as the methods used in our daily thinking, objective or subjective, such as “Induction”, “Assumption”, “Approximation”, “Experimentation”, “Contracting”, “Enforcement”, which amount infinitely, in contrast with finite Instructions.

Since human thinking or “computations” are now assumed to proceed at limited speed (i.e. limited number of operations in a unit time), in order to close computations in time to make decisions, besides deduction, various other Instructions or Algorithms (as mentioned above) are frequently and alternately used, contingent on their different functions in different contexts, to speed up the operations at the sacrifice of some accuracy, thus leading to the synthesis of objectivity with arbitrariness and diverse subjectivities (the “Subjective Turn” or “Mental Distortion”); and, with the combinatorial explosions happening between Instructions and data, a mixed and infinitely expansive thoughtful scenario is unfolded.

The computational or thoughtful structure of “Instruction + data (or information)” as a new dualism represents the interactions between human minds and the environment. However, as Instructions are thoughtful entities rather than any physical or biological ones (e.g. genes), clearer linguistically, easier to manipulate, the psychological, then social and humanistic studies can use ATT to “Algorithmically”[5] perform only within the domain of thoughts or “software”, deflecting from the “hardware” approach, the natural science method.

Distortive Thinking

Psychology pertains mainly to issues such as subjectivity, irrationality, arbitrariness, biases, and anomaly (Samson, 2014) that have been deemed distinct from thinking, or “rational” thinking. This dualism prevails in psychology. For example, Sigmund Freud explained how psychological irrationality happened in contrast with rational thinking, whereby he apparently regarded the thinking system as an ideal even perfect body (Freud 1922) that could stem from zero thinking time or infinite thinking speed. However, according to the above Subjective Turn, the thinking system runs like psychological performances, not essentially different from them.

Since a computational operation is feeble in information processing, plenty of knowledge stocks need to be prepared roundaboutly in advance, to support current computations. However, possibilities of knowledge development are infinite, hence any extant pieces of knowledge must in principle be imperfect or flawed patterns, modules (Fodor, 1983) or makeshifts, they must have been made rashly, inevitably arbitrarily, and subjectively, more or less. And, current computations cannot examine or modify them entirely in time, but only marginally, and then straightforwardly adopt them. These mean that stocked knowledge must have intervened human thinking or computations “rudely”, or abruptly. Hence, “rational thinking”, comprised of the Instructional system and various knowledge stocks, must have never been so

“rational” as expected, but “distortive” or “warped” like the space-time described by Einstein.

There are multiple ways to Algorithmical justification of Mental Distortions, as readers might conjecture.

The Hard-Software

Beliefs, attitudes, and other philosophical ideas, general, fundamental but vague, exemplify the subjective knowledge. Emotions (Scarantino, 2021) resemble beliefs or attitudes, which are patterned to give fixed responses to certain stimuli or input, neglecting other factors. Emotions focus on what the stimuli or input mean straightly for one’s purposes or demands, reminding the actor not obsessed in computational procedures but concerned more with his/her “final ends”, as if a greedy boy eagerly and frequently asks his parents: “Is this or that yummy?” “Can you buy it for me?” As the “boy” is simple-minded, there are only several kinds of emotions discretely, occasionally, and economically regulating one’s behaviors. Emotional output as parameters or action advice are then synthesized into further computations. Hence, one could keep calm in appearances while excited internally.

However, different from beliefs or attitudes as pure software, apparently, emotions are embodied into “hardware” that is “installed” in the brain (and body) innately and universally, besides the Instructional system, and start to work as soon as one is born. Thus, emotions can be called “hard-software”, like the software installed in computers before they leave factory for their users. This hard-software cannot be modified by users themselves -- despite it can by “manufacturers”; therefore, emotions keep constant during one’s whole lifetime, and keep alienating the thinking system that evolves quickly, hence sometimes they are deemed “irrational”.

Instincts, impulses, feelings, and desires can all be deemed some kinds of hard-software. Instincts enable newborns conducting basic actions (e.g. sucking breasts) to survive before they develop or learn knowledge enough to make living. This logic evidences the necessity of innateness beyond postnatal knowledge development. Impulses and feelings urge actors to compute or act quickly and efficiently, at sacrifice of some accuracy or perfection. Desires, the thoughtful variables, represent physiological demands in the mind, but roughly, simply, and fundamentally, like those subjective and arbitrary ideas. One could satiate one’s own desires first to imperfectly keep healthy, then, s/he adopts the acquired knowledge to improve again.

In this way we can compare psychologies with thoughts: they are technically different, but fundamentally similar. Understandably, to a certain extent, the similarity could allow interpersonal innate differences, and even the inheritance of acquired knowledge, while the innate and inherited interpersonal differences can be complemented or adjusted again by the subsequent acquired knowledge. On the other hand, since thoughts change easily and volatilely, some critical psychological or physiological functions (e.g. heartbeat) that pertain to the safety and stability of one’s life have been “designed” to fulfill with hard-software, automatically and/or unconsciously, which one’s mind can do nothing or little with directly.

Consciousness and Ego

Only from the angles of feeble computational operations and their serial connection can we understand what consciousness is, and why it moves, loiters as we feel about it. Consciousness and attention refer to the computational operation that has limited capacity with limited temporary memory. For economic considerations, it must hesitate, jump, or shuttle among various divisive or programmed operations, appearing chaotically but really logically (Li, 2022c). In addition, it must authorize many programs to run automatically upon certain stimuli, within certain scope, without prompt re-examinations of them, until it feels necessary to interrupt them again. This authorization mechanism may mislead observers to allege “too much autonomy or unconsciousness”. From these perspectives, consciousness is just the leader and governor in the brain.

Algorithmically, we are easy to understand these many terms as purpose, motivation, value, ethics, morality, institution, organization, ego, and “social psychology”. Limited consciousness suggests a cart to be pulled or pushed, from which a purpose or motive is identified as the single or finite factor(s) among many, to simplify computations. Final purposes or motives (e.g. desires) can be derived or distorted into the thoughtful and instrumental aims or values, to guide or regulate computations. A computation is unable to compute itself, as the ongoing “itself” has not been finished. However, sequentially, the following operation can compute on the memorized data of the previous finished “itself”, in this way one can roughly think about oneself as a composite of enormous “itselves” except the current ongoing “itself”, thereby forming the approximate concept of “ego”.

Social Psychology

As one is limitedly sized and located at a place, s/he can objectify others elsewhere. Lacking direct neuro connections, people have to use physical symbols, the spoken or written languages, to communicate with each other, where the universal Instructional system causes both interpersonal uniformity and differences. Various antenatal and postnatal subjectivities gather into a person's mind, thereby shaping one’s unique and complicated personality. Internal communication of a person is much easier and quicker than that between persons, which leads to the differences between an individual and a group of people, then arousing various social issues. Individual free wills, stemming from abundant computing subjectivities, entails interpersonal negotiations, stipulations, agreements, enforcements, fights, and so on, then furtherly to the birth of institutions and organizations. Ethics and morality as “informal institutions”, like the internal rules of one’s own, imperfectly regulate social interactions, and evolve slowly but constantly. The other social psychologies can likewise be explained or understood once the individual psychology is Algorithmically established.

Enormous personalities of enormous people will evolve over time, along with knowledge development, since a large part of them is acquired. However, the society has to economically decide on how long a person should be educated in his/her lifetime, or how much knowledge should be filtered, condensed, discarded, or specialized. This computational economic consideration structurally affects one’s nonlinear but endless psychological development (Piaget, 1971).

Conclusion: the Methodology

In brief, ATT as a concise thinking theory, with its abundant inferences, can endogenize a comprehensive thoughtful world where all psychological branches and schools can reasonably, and indispensably, reside or connect with. This unified system entails synthetic and general studies first, then the detailed, applied, and specialized ones, where the discipline of psychology can be confined in the study of hard-software, in accordance with the Algorithmic understanding of disciplinary division and cooperation. It can be conjectured Algorithmically that there must be multiple stereotypes of personality (Jung, 1923) that lead to different styles of behaviors; therefore, the empirical study of them, and of other psychological phenomena, is needed, definitely. Algorithmical theoretical studies can lead themselves logically into empirical studies.

When lacking thinking theories, behaviorism prevailed quite understandably to pursue analytical rigor (Watson, 1924). Computers have provided an accurate and successful model of human thinking for long time; however, cognitive psychologists, in my opinion, disappointingly failed to find the proper and effective route to take use of it. Instructions are really human's assets, only simulated by computers, which lie at the core of ATT, to pair information to constitute a wholesome, linguistic software framework, and then hopefully able to overturn behaviorism. Consequently, ATT would significantly theorize psychology, guide its experiments, clarify its various ontological and methodological issues, and extend it to the general social science, and the unitive humanities – although the hardware approach to psychology, as a psychological branch, still characterizes the method of natural science.

Footnotes

[1] These conflicts occur among the concepts of rationality vs irrationality, statics vs dynamics, micro vs macro, flow vs stock, tangible vs intangible, convergence vs divergence, etc.

[2] For innate thinking tools, see Kant (1996), Chomsky (2002), Fodor (1979); for thinking economics and mental distortions, see Cherniak (1986), Gigerenzer (2008); for knowledge theory and development, see Levi-Strauss (1963).

[3] As it failed to perceive the pivotal importance of Instructions, the current cognitive psychology missed the Algorithmic software approach illustrated hereinafter.

[4] For roundabout method of production, see Böhm-Bawerk (1923), pp.17-23 and Giddens (1984), Chapter 1.

[5] "Algorithmic(al)" means "of ATT", "under ATT", etc.

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