

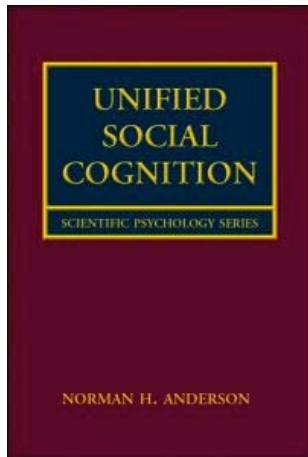
## Book Review

# Unified Social Cognition

Norman H. Anderson  
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This book is the fifth one of a series dedicated to Information Integration Theory (IIT); a theory about the way living organisms and humans in particular, integrate the information from the environment for the purpose of adapting to its changing character. In 1981, Norman Anderson published *Foundations of Information Integration Theory* in which he established the basis of IIT, and synthesized the empirical findings gathered since the early 60s that led him to suggest that information integration in the human mind (but not only in the human mind) obeys three fundamental laws: averaging, adding, and multiplication. He considered these laws as a foundation for a functional theory of purposive perception, thought, and action. In 1982, Anderson published *Methods of Information Integration Theory* in which he offered a set of well-designed tools allowing for the characterization of information integration in any setting. In *Contributions to Information Integration Theory*, published in 1991, Anderson discussed and synthesized the many contributions by members of his team in the fields of cognitive, developmental and social psychology. Finally, in *A Functional Theory of Cognition*, published in 1996, Anderson strongly restated the everyday life character of his theory.

In the present book, Anderson presents an ultimate synthesis of his theory, and offers his personal views on what he believes should be the scientific psychology of the current century. Psychological science rests on two axioms: the Axiom of Purposiveness and the Axiom of Integration. The Axiom of Purposiveness states that any perception, thought or action is goal-oriented; «Life is purpose, purpose is life» (p. 399). It follows that psychological theories that don't consider purposiveness as a central concept are bound to miss the essence of the phenomena they aim to describe and explain. The Axiom of Integration states that perception, thought, and action depend on the integrated action of multiple informers. It follows that psychological theories that don't consider integration as a central concept or that don't have adequate tools for characterizing integration processes are bound not to understand thought and action, because understanding them primarily supposes understanding how informers have been combined. Most psychological theories have, until now, not fully recognized the centrality of purposiveness and integration in human conduct. As a result, present day psychological science appears as a very fragmented field, a field that is populated by mini theories, each one explaining a very narrow segment of the psychological reality, each one having often been developed in complete ignorance of the others. Unification appears largely elusive, and as a consequence, progress is (at best) very slow: Mini theories reign for a time in their respective fields until they are replaced by more fashionable others.

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The book is aimed at demonstrating how cumulative progress has been made within IIT owing to the efforts of many investigators whose work has established the three integration laws on strong empirical ground in many areas of everyday life psychology. This includes person cognition, functional theory of attitudes, moral algebra, group dynamics, developmental integration theory, consciousness analysis, person science, integration learning theory, functional memory, cognitive judgment-decision, language integration, integration psychophysics, psychological measurement, and analytic gestalt theory.

Chapter I (Unified Theory of Cognition) fully develops the two axioms. It presents what is called “the information diagram”, a chain of three operators: Valuation, Integration, and Action. Physical stimuli that impinge on the organism are transmuted into psychological representations by the valuation operator. The valuation operation depends on the content of the stimuli and on the goal that is pursued at the time of the operation. In other words, physical stimuli don’t have any fixed psychological value. Then, the psychological representations (not the physical stimuli) are integrated by the integration operator to produce an internal response. The integration process depends on the psychological representations, and also on the goal that is pursued at the time of the operation. The three integration laws mentioned before refer to the integration process. Two identical psychological representations may be integrated in an additive way under some circumstances and in a multiplicative way under other circumstances. Finally, the internal response is externalized by the action operator to become the observable response. This externalization also depends on the goal assigned at the time of the operation. Psychological representations, internal responses and actions are constructed during the process; they are in no way predetermined. IIT is, unambiguously, a constructionist theory.

Chapter II (Psychological Laws) shows the way to solve the problem of estimating, from the physical values of the stimuli impinging on the organism (inputs) and the observed responses of this organism (outputs), the three unknowns in the integration diagram. In other words, this chapter demonstrates the way for measuring the psychological representations, determining the internal responses, and characterizing the integration rule. The basic idea consists in relying on factorial designs, observing patterns of external responses (not just single responses), and deriving from them the three sets of unknowns. This is made possible owing to the existence and ubiquity of the psychological laws of information integration. These mathematical laws predict different patterns of responses. From the patterns observed, it is possible to determine which law has been implemented and, as a result, estimating all the psychological values involved becomes possible. This is why these laws are considered as the foundation of unified psychological science. «They are Nature’s solution to the Axioms of Purposiveness and Integration» (p. 48). Demonstrations of the Parallelism Theorem (the pattern predicted by the adding law), and of the Linear Fan Theorem (the pattern predicted by the multiplication law), are also presented, and the averaging law is discussed at length.

Chapter III (Foundations of person cognition) concretely illustrates the way in which the principles developed in Chapter II can help disentangle most of the unresolved issues in person cognition. It argues that person cognition is the basic area of social-personality psychology, although it is fragmented across many sub-domains: attitudes, close relationships, moral cognition, emotion, and personality, to name a few. Once unified, the area of personal cognition should be the basis of social-personality psychology.

Chapter IV (Functional Theory of Attitudes), V (Attitude integration theory), and VI (Comparison of attitudes theories) illustrate how the same principles can allow for a radical shift in attitude research. Although most social attitudes are strongly endorsed (attitudes towards religion, government, gender roles), the attitude field has been largely focused on



“nonattitudes”; that is, on attitudes towards issues on which people have no strong involvement. This is because the field was centered on persuasion, and only weakly endorsed “attitudes” can be changed during a laboratory session. This exclusive focus on “nonattitudes” has been responsible for the extreme fragmentation of the attitude field (no less than eight different theories are compared in chapter V). How well long term attitudes work in everyday cognition – that is, how they regulate the valuation operator – how they are integrated with current, short term information, and how they impact on the action operator should be interesting future research objectives.

Chapter VII (Moral Algebra) shows that moral cognition obeys algebraic laws (e.g., Hommers’ Culpa theory). This finding may appear as puzzling (or simplistic) to modern moral psychologists’ eyes, but it would not have been a surprise to ancient philosophers (e.g., Aristotle’s unfairness model). The psychology of morality has for a long time been confined to peripheral issues owing to inappropriate methodology (e.g., Goldberg’s dilemma technique). The chapter shows how IIT can enrich the field by driving the researcher’s attention to the wealth of moral phenomena in everyday life:

helping and not helping, kindness and unkindness, fairness and unfairness, deserving, praise and blame, obligation and duty, resentment, getting even, envy, lying, cheating, honesty, extenuation, apology, mitigation, atonement, and forgiveness. (p. 199)

Chapter VIII (Group Dynamics) focuses on marriage and spouse relationships, group discussion, group affiliation, and group decision. In particular, the Social Averaging Theorem, and the evidence that supports it is discussed at length.

Chapter IX (Cognitive theory of judgment-decision) synthesizes studies on judgment and decision that totally deviate from the normative framework of optimal decision that has reigned in the field since the mid-70s. The criticisms that address studies conducted in the normative framework are especially interesting. First, most judgments of everyday life lack normative standards. As a result, confining psychological research to situations in which standards exist amounts to turning our backs on most everyday life situations. Second, psychological values are essential to really understand people’s judgments and decisions. However, values are, unfortunately, outside normative frameworks. Third, what is examined and “explained” in these studies are not the persons’ responses but the deviations between these responses and the standard response. These deviations are called bias. Biases are unlikely to reveal true cognitive processes. In addition, the invalidity of these prescriptive models for the description of cognitive processes is evident on a priori grounds for the simple reason that these models (e.g., Bayes’ theorem), as with any human-made material or intellectual tool (e.g., the flint biface, the computer), have been created throughout human history for complementing the human innate capacities in areas in which they have already been shown to be insufficient for solving specific problems (e.g., cutting meat, combining uncertainties, running simulations).

Chapter X (General Theory) insists on the duality of the two worlds: the external, physical world and the internal, psychological world. The three laws of information integration are laws describing the functioning of the internal world. In other terms, this world exhibits mathematical laws, which allows study it on its own terms, without appealing to the structure of the physical world. Examples taken from studies on language, hedonic theory, intuitive physics, social stereotypes, to name a few, show how these laws allow for the measurement of non-conscious sensations. These laws are probably at the origin of the development of mathematics.



Chapter XI (Experimental Methods) shows how the development of methodology has gone hand in hand with the uncovering of the basic psychological laws. Special importance is given in this chapter to single person designs and to personal designs (single person design embedded into the person's environment): as «cognition occurs in individual organisms; that is where it can be most effectively studied» (p. 374). Finally Chapter XII, the concluding chapter, suggests new avenues for intrepid researchers.

Norman Anderson's book is not suitable for the faint of heart and timid researchers. It is full of original (sometimes extreme) views on practically every field in psychology. Moreover, the book is unique in that its main objective is not to merely criticize existing theories and methods, but rather to present the reader with a unified framework (IIT) that is able to respond to all the criticisms that have been raised. In particular, this framework, which has already been applied in virtually every domain that deals with human judgment, provides an alternative for micro-theories. This is what makes this book a good recommendation for psychologists who are not irresistibly attracted to current fashions and reigning consensus.

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