Epistemic Preliminaries: Normative Priorities and Neuropsychological Kinds

Jennifer Mundale[*]
jmundale@pegasus.cc.ucf.edu

ABSTRACT

As noted in the introduction to this volume, "many foundational assumptions continue to be unexpressed", and many foundational issues remain unresolved, if not neglected, in the epistemology of psychology. I focus on two such sets of issues. Briefly, they are: (1) the resolution of conflicting norms (epistemological, clinical, ethical, others), and (2) taxonomic issues, broadly construed. It is not my purpose to suggest resolutions of these issues, but rather, to highlight their importance to a variety of topics that arise in the epistemology of psychology. Though it is difficult to say with certainty, given the unsettled nature of various areas of concern, I suspect that progress on these issues may be necessary, or conceptually prior to the satisfactory treatment of various issues in the epistemology of psychology and related fields.

Many metaphysical and epistemological issues at the intersection of philosophy, psychology and neuroscience remain unresolved. Addressing these issues, I argue, may be preliminary to any resolution or progress in these fields. In what follows, I focus on two such unresolved areas of concern. It is not my intent that I will resolve these issues; rather, I aim to justify a case for more attention to these problems by showing how central they are to a variety of areas, particularly the epistemology of psychology. The problems I highlight are: (1) hierarchies and conflicts among norms, including epistemological, clinical, ethical, sociological and other norms, and (2) taxonomic issues, broadly construed, particularly those involving psychological and neuroscientific taxonomy.

With respect to the first issue, it is useful to give an example of a normative conflict. One example arises in the wake of some studies (e.g., Alloy and Abramson 1979, 1988) which suggest that depressives are "sadder but wiser", or that depressives make more accurate, realistic predictions than non-depressives. Similarly, work by Taylor and Brown (1988), suggests that those who maintain an unrealistically positive self-image are happier and more productive than those who don't. As I and others have noted elsewhere (Flanagan, 1991; Kinney, 2000; Mundale, 2004) such work reveals a potential conflict between epistemic norms, or norms of rationality, and clinical norms. As Kinney (2000) comments, for example, such results prompt us to ask whether epistemologically realistic worldviews are desirable for emotionally distraught patients, and whether some kinds of cognitive errors may serve some kind of palliative or adaptive purpose. This potential conflict puts the standards of mental health and the productivity and satisfaction associated with it at odds with epistemic norms of justified belief.

While this example shows a potential conflict between epistemic and clinical norms, there is also the possibility of a conflict between epistemic and other psychological norms. The latter is highlighted by the recent moves in cognitive science toward approaches that emphasize the situated, embodied and embedded condition of knowers, on the one hand, and naturalized

---

[*] University of Central Florida

epistemology, on the other. Both approaches emphasize the role of heuristics and biases in our thinking, and, similarly, both underscore the non-optimal or "satisficing" strategy that is now thought to be typical of human thinking (see, for example, Herbert Simon, 1957, 1978; Cherniak, 1990). In this way, epistemic standards of rationality that describe how humans ought to think and reason may ultimately conflict with psychological norms that describe how humans actually think and reason, including common cognitive errors, biases and processing limitations. This potential conflict poses difficulties for establishing criteria for rationality; is one to judge according to a theoretical, largely armchair, "maximizing" standard of traditional epistemology, or by an empirically derived, "satisficing" standard that falls within the guidelines describing how human beings actually think? Philosophers continue to educate themselves and their students about common reasoning errors, ever watchful for the attribution error, informal fallacy, availability and representativeness biases, stereotyping, and other breakdowns in reason. At the same time, the naturalistically-oriented philosopher informs students not only of their apparent inevitability, but of their psychological explanation and possible heuristic utility, as well (see, for example, Scott Plous, 1993, or Gary Kirby and Jeffery Goodpaster, 2006, for this combined approach to critical thinking).

Similarly, naturalized ethics (ethics guided by psychological realism) has heightened the potential for conflicts between ethical norms and both epistemic and clinical norms[1]. What if being ethical does not coincide either with being rational or happy? What if the standards for ethical decision making require unrealistic expectations of our cognitive capacity? Flanagan discusses the potential for such conflicts, citing act utilitarianism as an example of an ethical theory that is psychologically unrealistic in that it requires constant evaluation of all possible actions along with their possible consequences in an attempt to maximize the greatest net happiness (Flanagan 1991, pp. 32-34). The unwieldiness of the hedonic calculus is a longstanding criticism of act utilitarianism that Flanagan puts into the broader context of a naturalized ethics that requires normative theories to fulfill the conditions of minimal psychological realism. Optimal rational norms are not consistently, if ever achievable to the extent required by the ethical norms of utilitarianism. The normative requirements of Kantianism are also notoriously unrealistic in presuming a kind of perfect rationality; one must, for example be able consistently to determine which maxims it would be reasonable for *everyone* to follow, and one's self-knowledge must be infallible enough to discern which maxims are guiding one's actions. Also importantly, for the present purposes, Kant famously drove a wedge between happiness, on the one hand, and ethics, on the other, opening the possibility of a conflict between the standards of ethics and those of psychological health and happiness.

Of course, there are some worldviews in which the potential for such normative conflict is greatly diminished, or at least not inevitable. In the Aristotelian system, for example, epistemic and ethical norms go together, and both coincide with the good life, or a happy, flourishing life. Being virtuous is tantamount to functioning well (that is, reasoning well), which is tantamount to employing one's practical wisdom in choosing the mean, relative to one's self. A life lived consistently within the mean conduces toward happiness, or eudaimonia, the end of

[1] Obviously, I reject the argument that naturalized theories, particularly naturalized epistemology, cannot be normative. Arguments for and against naturalized theories themselves go beyond the concern of this paper, but in short, I accept a cooperative version of these naturalized theories such that empirical discoveries about psychological and neurological limitations and capabilities are relevant to the study of human ethics and epistemology.

human life. The standard criticism of Aristotelian virtue ethics is the commitment to essentialism; in order for the elements of Aristotle's ethics to cohere as they do, one must think of humans beings as having a defining human nature or essence, or as being possessed of certain fixed traits, such that the life of moral goodness stems from the exercise and development of our distinctive human essence.

While I am not concerned to defend or criticize any particular ethical theory, there is surely the likelihood, if not inevitability, that normative conflicts will arise, and it is puzzling to know how to resolve them. Somewhat gloomily, Flanagan writes that, «This is not the best of all possible worlds. Happiness, goodness, and psychological health are not inexorably linked.» (Flanagan 1991, p. 332) It is noteworthy that Flanagan reaches this conclusion at the end of a lengthy, detailed work that develops and defends a naturalized (psychologically realistic) approach to ethics. How are we to adjudicate such conflict?

The conflict is one that Flanagan appears prepared to live with, even if grudgingly. Yet, it is worth considering the available options. First, should we accept normative conflict, or should we regard it as a sign that we have at least one normative account wrong? Recalling the above example, Graham disputes the claim that depression must necessarily be an indication of irrational thinking. In fact, he argues that, «…were a person immune to depression in justifiably depressed circumstances, I think we should be inclined to think of him as psychologically deficient.» (1994, p. 419) As he further explains

> If you became severely paralyzed in an accident, the fact that you are paralyzed might be a melancholic truth, an important even if depressing reality, which you must appreciate if you are to make intelligent decisions about the future. How sympathetic could we be to your plight if we described your reasoning as illogical? Should we dissuade you from believing you are paralyzed? Should we deny your future is bleak? (Graham 1994, p. 412).

Faced with a justifiably depressed person, then, should we add further insult by describing him or her as irrational, as well? One could, of course, claim that this is not an example of any hard choices between the norms of psychological health and those of epistemic virtue, in that facing a depressingly bleak future honestly and rationally is a necessary condition for eventually overcoming that depression. This kind of accommodation, for example, might result from adopting a different model or standard of rationality, but not all cases of apparent conflict can be argued away.

To return to the available options, suppose we decide that conflict among norms is an example of what philosopher Nicholas Rescher termed an «aporetic structure»; a set of individually plausible assertions that, taken together, are mutually inconsistent. If one cannot resolve the inconsistency through re-interpretation of the assertions, then, one or more assertions must go, and, furthermore,

> any particular way out of an aporetic conflict is bound to be simply one way among others…. there will always be a variety of distinct ways of averting the inconsistency into which is plunges us. And in this light, the problem for the philosopher is not one of inductive ampliation but of systemic reduction – of a restoration of consistency through choices of priority. (Rescher 2001, p. 100).

Rescher's preference for resolving inconsistencies among philosophical doctrines is clearly to choose and eliminate, rather than to accommodate, as «competition and controversy» governs mutually exclusive doctrines, not «mutual supportiveness» (Rescher 2001, p. 101). If this is how we approach normative conflict, does this interpretation not commit us, at the outset, to the precedence of traditional, epistemological norms? Perhaps even to recognize

potential normative conflict as a subject worthy of attention is to privilege epistemic norms. In other words, what meta-normative position does one take in even approaching the question of how to resolve normative conflict? It's not quite that it leaves us on Neurath's boat so much as it leaves us wondering how to get it out to sea in the first place.

If we decide to take the traditional approach and put consistency ahead of all else, that does not, of course, tell us which norms to privilege or which trade-offs to make. In contrast to Rescher's recommendations, Flanagan's solution suggests a "satisficing" strategy of seeking the very sort of mutual supportiveness Rescher warns against. Flanagan claims that while we cannot have the best of all possible worlds, «There do exist, however, some relations among the three concepts [happiness, goodness, and psychological health], some patterns of co-occurrence, which we can seek to amplify…», and that «Gaining as much coordination as is possible among things is a project requiring human effort suited to its particular time and place and with no guarantees of success» (Rescher 2001, 332). At the moment, we do not even seem to have a clear idea of what would count as a successful coordination among these three, let alone their successful coordination with a fourth element of epistemic virtue.

Apart from the puzzle itself, the clash between standards often forms the basis of a criticism, if not rejection, of a given theory. Condemning one normative theory because it conflicts with another normative theory (or theories) really only pushes the question back a stage further into one's overall normative scheme. It prompts us to ask if one's overall system is one in which normative conflict can be avoided, as in some species of virtue ethics, or if some kind of approximate cooperation can be achieved (as Flanagan describes), and if neither of these, what hierarchies can be defended to support the rejection or accommodation of one norm in the face of conflict with another? It may not be enough, for example, simply to condemn one theory (a clinical theory, for example) simply because it established norms that conflicted with another (an ethical theory, for example), without stating one's larger normative assumptions. If conflict is inevitable among those assumptions, the criticism is more telling if placed within the defense of one's larger, normative hierarchies or coordination.

The second set of issues I consider also has to do with unstated or perhaps unfounded assumptions at the basis of many common criticisms. These have to do with taxonomic issues, broadly construed. Of the pair, perhaps this area has been the most productive source of difficulties, because various methodological gambits have been placed that have depended, in one way or another, on a resolution that has yet to happen. Moreover, these difficulties have been lurking behind the scenes since natural scientists first began to localize psychological function in the brain.

For example, the feasibility of various strengths of identity theory and reductionism, as well as related arguments concerning localization and realization, rely on taxonomic assumptions about the psychological and neuroscientific domains that are usually left unstated, if not altogether unexamined. In the absence of some preliminary classificatory considerations, arguments that depend upon them are nothing more than programmatic guesses. Consider, for example, the unfortunately cast distinction between type vs. token identity theory which has framed the debate about theoretical reduction since the latter half of the twentieth century.

In the now-familiar type vs. token language, types are typically taken to refer to kinds, types or classes, and tokens are held to be specific members of the kind or type of class. (The choice of this terminology, borrowed from its original linguistic context - where it is clear, unlike the application in question - is part of the trouble, as discussed below). For the type identity theories, all instances of a particular type of psychological type (such as having a pain) are identified with instances of a correlated type of neural event (such as an activation pattern in a

particular area or set of areas). Historically, type identity theory was most famously advanced by such philosophers as Smart, Place and Armstrong, though, with some evolution and sophistication of the theory, it has many contemporary stalwarts as well; chiefly, Patricia and Paul Churchland.

In brief, type identity theory is a much stronger claim than that made by token identity theorists, who claim that, while every token of a mental state is a token of a neural state, there is no identity between types of mental states and types of neural states. In other words, for the token identity theorist, whenever one is in a given mental state, that mental state is associated with some brain state or other, but on other occasions, when one is in the same mental state, one might well be in a different brain state. Alternatively, the token identity theorist might also claim that one and the same brain state may, on separate occasions, correspond to different mental states. Since the token identity theorists agree that a given mental event is identical with some physical state *or other*, another way of looking at their position is to say they identify the very broad type - mental events - with the very broad type – neurological events. Thus, an identification (or correlation) for them amounts to nothing more than an identification of a token of the type mental event with some token of the type physical event; this is, after all, a minimalist form of physicalism.[2] This form of identity theory has most notably been held by functionalists such as Fodor and Putnam.[3]

Functionalists of this stripe argue against the type-to-type, or one-to-one mapping relation of type physicalism. If this mapping relation can be successfully refuted, they argue, then type physicalism must be false and functionalism (token physicalism), which doesn't suffer from this problem, wins. One version of this attack claims that different physical kinds may manifest or realize the same psychological state; this argument is known as multiple realizability. The other version claims that different psychological states may be manifested by the same physical type (multiple functionality), though this version is less common. Fodor and Block summarize the first kind of argument as follows:

> The argument against [type] physicalism rests upon the empirical likelihood that creatures of different composition and structure, which are in no interesting sense in identical physical states, can nevertheless be in identical psychological states; hence that types of psychological states are not in correspondence with types of physical states. (Block & Fodor 1980, pp. 237-238)

[2] Though Fodor, perhaps in an unguarded moment, claims that "Token physicalism does not rule out the logical possibility of machines and disembodied spirits having mental properties" (Fodor 1981, p. 127), thus obscuring his claim to *physicalism*.

[3] For the purposes of this essay, I have treated token physicalists as functionalists, since they tend to run together as one finds them. Technically, of course, one doesn't necessitate the other. Functionalists require that mental states be categorized by function, or according to specified input/output relations, rather than by their physical correlates. In principle, this is consistent with a variety of theoretical relations between neuroscience and psychology. Similarly, nothing about being a token identity theorist requires that one assent to a strictly functional categorization, even though token physicalism denies that there is a productive means of physical categorization. Most functionalists, such as Fodor and Putnam, believe that a physical categorization of mental states is either unobtainable or, at best, non-fruitful. Type physicalism, by contrast, is compatible with either reductionistic or eliminativistic materialism, whereas token physicalism is not, since it denies the correlation of mental types with distinct neurological types.

The problem, of course, is that the truth of the claim becomes a matter of careful example picking (see also Mundale, 1997, Mundale and Bechtel, 1999). I will elaborate upon this further, momentarily.

Consider first, the terminological indefiniteness that is let in with the very characterization of these two different forms of identity theory. To take Fodor as a representative example, he writes:

> The identity theory can be held either as a doctrine about mental particulars (John's current pain or Bill's fear of animals) or as a doctrine about mental universals, or properties (having a pain or being afraid of animals). The two doctrines, called respectively token physicalism and type physicalism, differ in strength and plausibility. (Fodor 1981, p. 127)

As mentioned in the beginning of this section, language such as this is unhelpful unless accompanied by some sense of what the mental particulars and universals *are*. Apart from such a context, how are we to take, for example, "Bill's fear of animals"? Fodor lists this as an example of a mental particular or token. If this is just one of many of Bill's fears (of clowns, of heights, of elevators, etc.), then it looks like a particular. Yet, if Bill fears several animals, such as lions and tigers and bears, then isn't Bill's fear of animals better regarded as a kind? The taxonomic difficulties, of course, extend beyond a given case such as this, to considerations of the entire psychological and neuroscientific domains themselves.

To return to the matter of careful example picking, above, Putnam's famous octopus case of multiple realization, apparently, still attracts support. In its original form, it reads:

> the brain state theorist [type-identity theorist] is not just saying that *pain* is a brain state; he is, of course, concerned to maintain that *every* psychological state is a brain state. Thus if we can find even one psychological predicate which can clearly be applied to both a mammal and an octopus (say 'hungry'), but whose physical-chemical 'correlate' is different in the two cases, the brain state theory has collapsed. (Putnam 1967, p. 44).

As a matter of careful example picking, this is a prime example. As Bechtel and I argued ten years ago (Bechtel and Mundale, 1999), the apparent success of the multiple realizability argument depends, in part, on choosing examples so as to mismatch "grain size", or levels of analysis. Psychological states are chosen at a coarse grain, or gross level of analysis (e.g., "hunger"), and coupled with brain states chosen at a fine grain, or micro-level analysis.

The lack of context in which such mismatches occur gives license to any number of artificially concocted examples of multiple realization and/or multiple functionality. It is useful to see another example of this line of thought. It would normally be unfair to cite someone's views from 1974 about the usefulness of neuroscientific research to psychology, but (1) the author's views remain consistent on this point, (2) they remain influential for many philosophers of mind and (3) my focus is on the language and underlying assumptions of the debate, rather than on this particular conclusion, and those also remain part of the contemporary discussion:

There are departments of psychobiology or psychology and brain science in universities throughout the world whose very existence is an institutionalized gamble that such lawful coextensions [between psychological and neurological kinds] can be found. Yet, as has been frequently remarked in recent discussions of materialism, there are good grounds for hedging these bets. There are no firm data for any but the grossest correspondence between types of psychological states and types of neurological states, and it is entirely possible that the nervous system of higher organisms characteristically achieves a given psychological end by a

wide variety of neurological means. It is also possible that given neurological structures subserve many different psychological functions at different times, depending upon the character of the activities in which the organism is engaged. In either event, the attempt to pair neurological structures with psychological functions could expect only limited success. (Fodor, 1974, p.125)

Though Fodor's and Putnam's examples have been rehashed numerous times in the philosophical literature, references to psychological types, tokens, kinds, predicates, particulars (the terminology varies considerably) remain a blank check for nearly any claim one would wish to make about the relation between psychology and neuroscience. Fortunately, despite the injunction of multiple realizability against any such usefulness, neuroscientific research is forging ahead with correlations between neural activations and psychological function, fleshing out the nomological bridges between the two disciplines.

In addition to the problems generated by the nascent state of psychological and neuroscientific taxonomy, there are related problems concerning the identity conditions of mental states and the manner of their individuation. As the foregoing discussion reminds us, philosophers commonly refer to the condition of being in the same mental state or the same brain state, either from one occasion to the next in the same being, or between two different beings. As discussed above, the strength of various identity claims, for example, turns on such considerations as whether one and the same brain state could subserve more than one psychological state, or whether one and the same mental state could be subserved by different brain states. As with the the notion of types, discussion about being in the same state, whether mental or physical, assumes that we can supply some account of the identity conditions for mental events and brain events, though this is not the case. Supposedly, the famous hungry octopus and I can be in the same mental state (or, as it was originally put, share the same psychological predicate of "hungry") while being in different physico-chemical conditions at the same time. Of course, Putnam does not give us any specific criteria for what would count as the same (or same *enough*) *physical* state. He doesn't, and neither does anyone else to my knowledge. It is as if Putnam were assuming that neuroscientific taxonomy was complete, with all its different kinds and instances already sorted out for us. Yet we know differently.

A related problem, of the individuation of states, also floats untethered to any underlying explanation. Where does the mental state of hungry actually begin? In the intervening hours after one meal, do we gradually come to be in the single state of hungry that lasts until our next meal, or do we pass through several distinct mental states, ranging from mildly hungry to famished?

There is nothing predetermined about the level of abstraction at which the type physicalist is required to work, in order to be a "type physicalist". It is reasonable to conclude that the levels of the correlations and the correlations themselves are empirical matters, best left to psychology and neuroscience. Also, as I have emphasized throughout this section, *there is no a priori determination of which psychological and neurological entities are to count as types (universals), nor of the tokens which are to be subsumed under them*. Since the success of the general argument against type physicalism depends on how one construes types and tokens, it is obvious that one must give some preliminary taxonomic basis for how to construe them. Depending on one's other theoretical commitments as well as the state of the art, one might arrive at several different taxonomies; nothing necessitates that there be just one (Mundale, 1997).

Brain mapping and its associated developments in neuroscientific taxonomy is an actively evolving project. Among the possible grounds for division are: evolutionary/phylogenetic typologies, developmental ones, clinical, psychological, cognitive, physiological, sensory, motor and others. There is also a range of levels at which one might classify, ranging from the level of

the individual neuron (or even lower, as with neurotransmitters, for example), to ganglia, lamina, systems, and central nervous system. There are also multiple methods and technologies for individuating brain areas. In some cases, these different systems may fail to neatly coincide with each other. In short, at least at this stage, there is no definitive taxonomy of neurological "types" and "tokens".

In psychology, taxonomy appears to be even messier. We lack both vertical classification (the categories under which psychological states are organized) as well as horizontal classification (an account of the members of a given psychological category). Clearly, if a type-type correlation fails, the problem may not be type physicalism at all, but rather with the typological system(s) at either end. It is easy to find psychological types which *do* map neatly onto a their neuroscientific correlates, and it is also easy to find cases of those that don't. In sum: as it has historically been stated, the case of the functionalists against the type physicalists is entirely founded upon picking the right examples. In order to have a more principled discussion, it is necessary to have an at least preliminary taxonomy of the mental and the neurological. The argument could then proceed to issues such as: Whose taxonomy is more successful (predictive, theoretically fecund, robustly confirmed, etc.)?, and whose claims about the level of identification between the mental and neurological domains are better, given the human behavior, cognitive processes, etc., we are trying to explain? If all we can do now is place our bets, then based on early showings, I'm putting my money on the neuroscientists.

BIBLIOGRAPHY

Alloy, L. B., and Lyn, Y. A. (1979). Judgment of Contin¬gency in Depressed and Nondepressed Students: Sadder but Wiser? *Journal of Experimental Psychology: General* 108: 441–85.

Alloy, L. B. (1988). Depressive Realism: Four Theoretical Perspectives In Lauren B. Alloy (ed.). *Cognitive Processes in Depression*,New York: Guilford, 223–65.

Bechtel, W. and Mundale, J.(1999). Multiple realizability revisited: linking cognitive and neural states*, Philosophy of Science*, 66, 175-207.

Block, N. and Fodor J. A. (1980). What Psychological States Are Not, in N. Block (ed.) *Readings in the Philosophy of Psychology, Vol. 1.,* Cambridge: Harvard University Press, pp. 237-250.

Cherniak, C. (1990). *Minimal Rationality*, Cambridge: MIT Press (Bradford Books).

Flanagan, O. (1991). *Varieties of Moral Personality: Ethics and Psychological Realism*, Cambridge: Harvard University Press.

Fodor, J. A. (1974). Special Sciences, or: Disunity of Science as a Working Hypothesis, *Synthese*, 28, 97-115. Reprinted in N. Block (ed.), 1980, *Readings in Philosophy of Psychology, Vol. 1,* Harvard University Press, Cambridge, MA, pp. 120-133 (page numbers of in-text references are to reprint edition).

Fodor, J. A. (1981). The Mind-Body Problem, *Scientific American* 244, 124-132.

Garrett, R. (1994). The Problem of Despair In *Philosophical Psychopathology* Graham George and G., Lynn Stephens (eds.), Cambridge, Mass.: MIT Press/Bradford, 73–89.

Graham, G. (1990). Melancholic Epistemology, *Synthese*, 82, 399–422.

Kinney, A. (2000). Positive Illusions of Well-Being and Irrationality: Implications for Rational-Emotive Behavior Therapy, *Journal of Contemporary Psychotherapy* 30, 4, 401–15.

Kirby, G. R. and Goodpaster, J. R. (2006). *Thinking*, Upper Saddle River, NJ, Prentice Hall.

Mundale, J. (1997). *How do you Know a Brain Area When you 'See' One?: A Philosophical Approach to the Problem of Mapping the Brain and its Implications for the Philosophy of Mind and Cognitive Science*. St. Louis, MO: Washington University Press. (Dissertation).

Mundale, J.(2004). That Way Madness Lies: At The Intersection Of

Philosophy And Clinical Psychology, *Metaphilosophy* 35, 5, 661-674.

Putnam, H. (1967). Psychological Predicates, in W. H. Capitan and D. D. Merrill (eds.), *Art, Mind, and Religion*, Pittsburgh, University of Pittsburgh Press, 37-48. Reprinted as The Nature of Mental States, in N. Block (ed.) *Readings in the Philosophy of Psychology, Vol. 1*, Cambridge: Harvard University Press, 1980, pp. 223-231 (page numbers of in-text references are to reprint edition).

Rescher, N. (2001). *Philosophical Reasoning: A Study in the Methodology of Philosophizing. Malden*, Mass: Blackwell.

Simon, H. A. (1957). *Models of man: Social and rational*, New York, Wiley.

Simon, H. A. (1978). Rationality as a Process and Product of Thought, *American Economic Review*, 68, 1-16.

Taylor, S. E. and Jonathan, D. Brown (1988). Illusion and Well Being: A Social Psychological Perspective on Mental Health, *Psychological Bulletin* , 103: 193-210.