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Neuroexistentialism, Eudaimonics, and Positive Illusions

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Authors:

Timothy Lane (1, 2, 3) & Owen Flanagan (4, 5)

Affiliations:

(1) Taipei Medical University, Graduate Institute of Humanities in Medicine, Taipei, Taiwan

(2) Taipei Medical University-Shuang Ho Hospital, Brain and Consciousness Research Center, New Taipei City, Taiwan

(3) Academia Sinica, Institute of European and American Studies, Taipei, Taiwan

(4) Duke University, Department of Philosophy, Durham, North Carolina, USA

(5) Duke University, Neurobiology Graduate Program, North Carolina, USA

I Introduction: The Neuroexistential Predicament

Writing about the physiology of love, Melvin Konner (2002, p. 322) quotes the poet Sappho:

> To me that man equals a god
> as he sits before you and listens
> closely to your sweet voice
>
> and lovely laughter—which troubles
> the heart in my ribs. For now
> as I look at you my voice fails,
>
> my tongue is broken and thin fire
> runs like a thief through my body.
> My eyes are dead to light, my ears
>
> pound, and sweat pours down over me.
> I shudder, I am paler than grass,
> and am intimate with dying…

Of this poem written 2,500 years ago, Konner observes, 'barbaric as it must seem to say it, these are signs of autonomic nervous-system turmoil'. Konner describes his observation as 'barbaric' because, we believe, it pointedly reminds that even the profound experience of lost love can serve to remind of our *neuro*existential predicament.

Existentialisms are responses to a felt diminishing of our self image. Previous existentialisms resulted from anxiety wrought by entertaining the thought that there is no god to give our lives meaning and purpose or to sanction our moral codes, as well as by confrontation with the iniquitous acts of violence that we and our fellows inflict upon one another (Flanagan and Barack 2010). The first wave made it seem that in matters of meaning, purpose and morality, we are left to our own devices; the second, that we are not up to the task, at least not if we are to hold ourselves to what seem like minimal standards of decency.

Neuroexistentialism is like prior existentialisms in that it is a response to a

specific threat to our self-image. The threat elicits anxiety and, when that anxiety does not devastate us, attempts to respond constructively. But, unlike prior existentialisms, here the anxiety is not directly precipitated by doubts about supernatural foundations or dire failures of polity. Here the threat derives from the way in which contemporary neuroscience provides copious amounts of evidence to underscore the Darwinian message—we are animals, nothing more.

Although some mid-20th century commentators on Darwin, like Teilhard de Chardin, and some Nobel Laureate precursors of 21st century neuroscience, like Eccles, Penfield or Sperry, embraced metaphysical views that might leave room for a version of dualism which includes a soul, those views are made to seem increasingly quaint by the ever more sophisticated brain probes and mind analyses developed by contemporary neuroscientists and philosophers. Even if it does not turn out to be the case that the mind is, literally, the brain, plausible alternative views of the mind-brain relationship—such as 'mind is a function of the brain' or 'mind supervenes on the brain'—are no more likely to give comfort to those who wish to cling to a supernatural metaphysics. For even these serious, alternative views evoke Laplace's pithy response to those who wondered what role might be left for god to play in his theory about the formation of the solar system—'I have no need for that hypothesis'.

Applied to the matter at hand, if the intent is to explain human behavior without including extraneous variables, there is no need for a soul hypothesis. Indeed, although there is much that distinguishes received views of scientific explanation from contemporary views, both take excluding the extraneous as fundamental. Hempel (1965, pp. 432-433), referring to collective subconscious and entelechies, emphasizes that 'immunity to disconfirmation is…a fatal defect'. Craver (2007, pp. 36-37) developing a view of explanation suited to the mind-brain sciences, makes a similar point in speaking of the production of action potentials: if neurons are blessed by an ordained person and then stimulated with a 10-nanoampere current for one second, an action potential is generated. The current is determined relevant and the blessing not, because the current-action potential relationship is one that can be situated within the causal structure of the world.

Of course the intent is not to deny that there are different ways of viewing the world. In terms formulated by Sellars (1963), the 'manifest' image is distinct from the 'scientific' image: in other words, how things appear to us is not the same as how things really are. Tables do not appear to be comprised of mostly empty space but, as a matter of fact, they are fields in Hilbert space—a quantum mechanical way of

saying that they are largely made up of empty space.

Sellars was concerned with the scientific image in general, but neuroexistentialism is not a reaction to the quantum mechanical description of tables. Rather it is a reaction to being told such things as, although it appears to me that my heart is broken, what I am actually experiencing is tumult in my autonomic nervous system. Neuroexistentialism is best thought of as a response to that part of the manifest image that concerns the nature of persons, what Flanagan (2002, pp. 27-56) calls the 'humanistic image'.

The humanistic image then is a subset of the manifest image. Although it derives from folk theories that have been formulated to explain how human beings appear to themselves, from the first-person perspective, it can be quite intricate and refined, due in part to having absorbed theological, philosophical, and some scientific notions. Indeed, the relationship between humanistic and scientific images can sometimes be quite equitable for in the sciences, especially the human sciences, it is commonplace to assume much that derives directly from the humanistic image. The social and psychological sciences, for example, do not presuppose that we are automata; they presuppose that we are, somehow understood, agents capable of initiating actions.

Since in some respects they draw upon one another, why is it not the case that they co-exist, harmoniously? At least one clear reason for conflict is that scientific and humanistic images are not just abstractions that have no bearing on how we live our lives. They are conceptual schemes that guide our choice of action in the world. What makes matters worse is that each wants to endorse its image as real, as true, as the right way to see things. If research into the central nervous system and its interaction with endocrine, immune and other biological systems eventually reveals that nothing corresponds to a folk psychological or a philosophical description of, say, free will, then so much the worse for free will and its advocates. But rare is the manifest image that retreats gently into the good night; most, instead, rage, rage against the dying of the light.

Still, one might persist, why should the manifest image yield its ground? If neuroscience discovers nothing that corresponds to free will, then perhaps instead of requiring that the manifest image give way, perhaps we should suspect that the methods of science simply are not up to the task of giving the manifest image its due. Although much could be said as regards this matter, we will confine ourselves to two

points.

First, as discussed above, if the intent is to explain, the best models of explanation yet devised all take excluding the extraneous to be a desideratum. At least where non-observables are concerned, if we have no need for a hypothesis that makes mention of them (free will, or god, or souls, or entelechies, or what-have-you), then they are better left unmentioned. Second, allowing that manifest and scientific images are intimately related, as we have indicated above, does not necessarily work to the advantage of the manifest image. Quine (1976, pp. 233-234), who also advocates a version of this idea—'science is itself a continuation of common sense'—is instructive in this regard. Both scientist and layperson begin with the same 'primitive sense of evidence', but science is more careful, more systematic, and more inclined to put nature to 'embarrassing tests'. In a word, by promoting high epistemic standards, it positions itself to 'overrule' the evidence adduced by those engaged in less rigorous reflection or inquiry into various aspects of the manifest image. And, consistent with the consensus among those who have developed sophisticated models of explanation, Quine (1976, p. 234) too banishes the extraneous: scientists tend to look upon the simpler of two hypotheses 'as not merely the more likeable, but the more likely'.

Where does this leave us then? Because historically questions of value and meaning have tended to be answered by appeals to theology or extravagant metaphysics, and because the scientific image leaves little or no room for either, conflict is inevitable. Retreat to the answers of the past would be epistemologically irresponsible and indicate disrespect for the truth. But if retreat is not an option, what sort of response might be compatible with the neuroexistential understanding of our predicament? Flanagan (2007) has proposed 'eudaimonics', that is a type of empirical-normative inquiry into the nature, causes, and conditions of human flourishing or fulfillment.

II. Eudaimonics

Eudaimonics is consistent with ontological naturalisms that reject belief in supernatural forces and such dualisms as the bifurcation of humans and non-humans or the mind and body, but its main concern is not ontology (Flanagan et al. 2008, pp. 5-9). It is a type of ethical naturalism that is primarily concerned with the proper way of approaching moral inquiry. Its principal, substantive, methodological commitment is that moral philosophy should not employ a distinctive a priori method

of yielding substantive, self-evident and foundational truths from pure conceptual analysis. Among other things, this methodological commitment includes a rejection of Kant's distinction between phenomena, which can be investigated by science, and noumena (self, will, laws of freedom etc.) which cannot. Instead, it is committed to promoting fruitful interaction among ethical inquiry and certain other disciplines, in particular naturalized epistemology, psychology, and neuroscience. In short, ethics should be studied in a way that is continuous with science and none of its claims should be shielded from empirical investigation.

Given the goal of understanding human flourishing, which is taken to be partly constituted by a non-transcendental sense of meaning and purpose, how should one proceed? Developing an idea of Quine's, Flanagan (2002, pp. 265-319) has proposed that we proceed in a way analogous to investigations conducted in the applied sciences like engineering or ecology. When building skyscrapers in earthquake-prone regions we are careful to specify the types of structure that *should* inform our designs and the types of materials that *should* be employed, if we keep in mind the goal of avoiding serious damage when earthquakes do occur. When growing soybean, one *should* plant during seasons when nighttime temperatures seldom drop below 18 degrees centigrade and in regions that are rich with well-aerated, alluvial soils, if the goal is to produce healthy plants and maximum yields. When raising children, promoting social change, or designing political-economic policies, the question then, for a student of eudaimonics, is what *should* be done, if the goal is to promote human flourishing in ways that do not appeal to supernatural or transcendental senses of meaning and purpose.

Although both authors take the analogy to applied science seriously, eudaimonics (or, Eudaimonistic Scientia) would not fit Kuhn's description of normal science. But as with any science, eudaimonic inquiry often begins with hypotheses about what constitutes a healthy or a good person. Key concepts can then be operationalized and experiments can be designed, thereby enabling the investigator to seek confirmation. If hypotheses are disconfirmed, and methodology appears not to be at fault, the hypotheses may then be revised. To reiterate a central tenet: ethics should never be shielded from systematic, empirical inquiry.

But clearly there is less of a consensus as regards how best to study human flourishing than there is for the objects of study in civil engineering or botany. Eudaimonics is perhaps best thought of as scientific—with a normative component—in the sense that William James' writings on mind are thought of as

scientific. Another way of saying this is that it is as a form of philosophical theorizing that is strongly continuous with science. Because the concept 'flourishing' remains rather inchoate—not unlike the concept 'mind' during the final decades of the 19th century—and because the tools most appropriate to its formal analyses and experimental investigations have not been identified with a sufficiently high degree of confidence, it is best thought of as a field that is methodologically pluralistic, in the way that fields which command the attention of both scientists and philosophers typically are.

To say that the methodology is pluralistic and to allow that many tools of inquiry are borrowed is not to say that the methods or tools will not require modification and refinement as the field develops. For example, consider Rawls' method of 'reflective equilibrium' (Flanagan 2007, pp. 111-145): as applied to eudaimonics, first, one observes and reflects on lives that seem to go well, as well as those that do not, in order to produce a provisional idea of what counts as flourishing, eudaimonia. Second, keeping in mind the provisional idea, one investigates conditions in the world and characteristics of people that seem to contribute to or detract from flourishing. Third, in the process of investigating those conditions and characteristics, it is highly likely that the provisional idea of the object under investigation—eudaimonia—will be revised. If reflective equilibrium is effective, the result should be a more mature conception of eudaimonia as well as an enhanced ability to discern the conditions and characteristics in virtue of which it is constituted.

But the analogy to applied science and the appeal to a pluralistic methodology that includes practices like reflective equilibrium may lead one to worry that, at best, eudaimonics can lead only to a parochial ethics or worse, a form of pernicious relativism. Consider what Flanagan (2007, 118-125) has called the 'internalist objection': eudaimonics is an empirical-normative inquiry that tends to be carried out locally, from within a particular community and tradition. Questions raised are importantly unlike purely empirical forms of inquiry, since there tend not to be obvious, universal facts of the matter that can be appealed to when seeking to adjudicate disputes. If the question is whether planetary orbits are circular or elliptical, despite *in principle* worries motivated by the Duhem-Quine Thesis, *in practice* the scientific community is able to achieve a consensus as regards what is the case, without succumbing to parochialism or relativism.

Things are not quite the same with eudaimonics. Currently the only measure of what constitutes flourishing is in fact what norms are avowed and considered best,

from within a community. The internalist objection is that once a group has settled on a certain conception of eudaimonia, practices and traditions which append to that conception are nearly guaranteed to structure the social environment in such a way that virtues and norms said to enable or constitute eudaimonia will be endorsed. Because those are the virtues and norms that are endorsed and because flourishing can only occur in particular times and places—so very much unlike, say, entropy, which seems to hold universally—the local consensus will make it true that to flourish one must abide by community practices and traditions. But the manner in which local custom can prejudice the development of paths that promote flourishing is the problem—historically it has been the case that cultivation of the intellect, aesthetics, and civility have been restricted to a minority whose eudaimonia is made possible by the servitude of others, for whom eudaimonia is either denied or greatly restricted. And even among philosophers, who should be well practiced at the pursuit of reflective equilibrium, wickedness is not uncommon: some have owned slaves, some have promoted racist ideologies, and some joined the Nazi Party.

The internalist objection is well-founded, but it does not cripple eudaimonics. A partial response, one which Flanagan (2007, pp. 122-148) has elsewhere developed in detail, is that one can 'go external': that is, we should not rest content with reflective equilibrium (RE), we should aspire to 'wide reflective equilibrium' (WRE). When misgivings about eudaimonia emerge, whether these derive from personal, intuitive discomfort, from conflicts within a community, or from conflicts between distinct communities, WRE enjoins us to reflect widely, to seriously consider credible alternatives. WRE implies that we distinguish 'subjective' from 'objective' flourishing. For the former it is enough that one's virtues and norms pass local tests for RE; one need only be deemed good vis-à-vis the norms of a given community. But the norms regulating objective flourishing include an all-things-considered clause. In other words, to be found *genuinely* virtuous, one must pass tests for WRE, which is always a work-in-progress, but at least a work that makes possible ethical progress, by promoting reflection on all credible options, whenever there are misgivings about norms, values, or virtues, and when internal scrutiny fails to yield satisfactory solutions.

What do we stand to learn from the empirical-normative inquiry that is eudaimonics? As for the empirical, first, we know that evolutionary dispositions (e.g. those related to compassion, resentment, anger, and disgust) cum socialization can cause us to feel strong moral convictions, some of which are genuinely virtuous, and some of which, not. Second, we know that attribution biases often lead people

to believe false things, e.g. perseverance biases will lead people to think they are proficient or deficient at tasks, even after they are told that data which motivated initial judgments were fabrications. Combining (1) and (2) we know, inter alia, that once people are set in their ways, even if those ways are wicked, change will not come easily. In short, achieving moral insight and channeling it so that it motivates changes in attitude and behavior.

As for the normative, the truism that an 'ought' cannot be deduced from an 'is' notwithstanding, given that moral conflicts arise and given that we sometimes feel ill-at-ease with the implications of our moral intuitions, (1) and (2) suggest that we should avow and inculcate certain meta-norms. One among these, the *key meta-norm* (KMN), states that when conflicts arise we should engage in the process of WRE. Another, the *intuition-checking meta-norm* (ICMN), states that when we feel ill-at-ease we should reflect carefully on those intuitions and assess the degree of confidence we have in them.

We realize that this sketch of eudaimonics raises at least as many questions as it answers. It does no more than provide a loose, very general framework for how to think about ethical matters. But rather than attempting to fill in the details here, we will instead seek to address a more fundamental problem. Just what sort of universal orientation are we presupposing that might be sufficient to cause people to embrace meta-norms like KMN and ICMN as components of any attempt to live meaningfully and to flourish, and how might that be studied empirically.

III. Platonism and its empirical implications

Fitness is a prerequisite for the achievement of eudaimnonia. Our cognitive and affective capacities must at least be sufficient to 'satisfice', as Herbert Simon would say. We need not maximize material comfort, but we need to satisfy certain minimal standards for water, nutrition, and protection against the elements. What's more, if our species is to survive, we need opportunities to procreate.

The additional claim advanced here, motivated by philosophical reflection on human nature and social life as both reveal themselves universally and over time, is that while working to be and remain biologically fit, humans tend to seek meaning in a way that conforms to a pattern recognized by Plato. Wherever human beings seek to flourish, wherever and whenever they do so, they evince deep structural features as well shared criteria for measuring success. The normative claim advanced here is

properly construed as a hypothetical imperative (Flanagan 2007, pp. 38-61): If human beings are able to satisfice and if we begin to seek ways of living meaningfully, then (a) we *should* seek what Plato called 'the good', 'the true', and 'the beautiful' and (b) we *should* measure success by the degree to which these are achieved, (c) in a maximally harmonious way.

Since we are advocates of naturalism, invoking Plato here might strike some readers as inconsistent, for he construed the good, the true, and the beautiful as 'Eidos', forms existing as immaterial phenomena. Concerning this though, we part company with Plato, for there is a perfectly naturalistic way of discussing the Platonic triumvirate. Even mathematicians who, more so than other members of the scientific community, have sometimes seemed to describe the objects of their study in terms consistent with Plato's view of the forms, now tend more toward a naturalistic view of their endeavors. Although it is true that mathematicians often develop fields of study that apparently refer only to a world of abstractions, this capability is explainable as a tendency to invent concepts by abstracting away from elements of the natural world, elements to which we have perceptual access (Livio 2010). Even the geometry that was familiar to Plato is explainable as having been derived from our perfectly natural expertise at perceiving edges, at distinguishing between straight and curved lines, and at recognizing certain shapes, like circles and ellipses.

To grasp how this Platonic triumvirate can be compatible with naturalism, imagine it in Darwinian terms. Mother Nature has selected for parents who care about their young, who reliably detect the location of food and water, who choose partners with symmetrical faces (as a guide to producing good babies), and who are sensitive to natural cycles (so to better prepare for changes in illumination and the seasons). Eventually, expansive containers of multifarious things—so including much more than just caring for the young, detecting consumables, and identifying suitable mates or significant temporal changes—that are thought to be good, true, and beautiful come to exist in the social world. Then, just as was the case with creating geometry in ways that were grounded in and compatible with our natural perceptual capacities, human communities expanded upon and articulated the platonic triumvirate. To a first approximation, ethics and politics can be thought of as tracking the good, art and music as tracking the beautiful, and science and mathematics, the true.

We are not intending to deny that, as a matter of fact, hedonists, egoists, amoralists, or immoralists may never seek to flourish in the way we describe. But we are claiming that, as life's end approaches, if they express misgivings about how

they have lived, it will be because the platonic orientation matters to them and they are realizing too late just how much it matters. A eudaimon, one who lives in accord with the platonic, hypothetical imperative, will not engage in second-guessing at the approach of death.

Obviously we are not able to claim to have adduced adequate empirical support for our position. But we do believe there is adequate evidence to propose the platonic orientation as (a) a phenomenon in need of explanation, (b) as a framework capable of explaining why certain intra- and inter-personal tensions obtain, and (c) as the basis for a normative stance concerning how one should live. As regards (a), if we are correct that human beings have a platonic orientation, then psychology, evolutionary psychology, cognitive and affective neuroscience, and social neuroscience need to begin seeking to explain how and why we are constituted in this way. As regards (b), if we are correct that certain all-too-human anxieties and conflicts derive from failures to achieve a properly integrated platonic triumvirate, then what we learn from (a) will enable us to better explain these anxieties and conflicts. And, as regards (c), if (b) achieves explanatory adequacy, then we would have good reason to make recommendations—in the spirit of ethics as human ecology—concerning how individuals and communities should lead their lives, if they want to flourish.

To suggest how psychology, evolutionary psychology, cognitive and affective neuroscience and social neuroscience might begin to engage these issues, we draw upon a body of experimental work that has been motivated by Terror Management Theory (Hayes, et al. 2010). Terror Management Theory (TMT) begins with the observation that like all animals we are designed to preserve our existence, but that unlike other animals we can project the future and be consciously aware that death is inevitable. TMT then conjectures that the desire to preserve life coupled with the awareness of inevitable mortality creates an existential dilemma that can induce paralyzing anxiety, or 'terror'. TMT further conjectures that we do not seem to be morosely obsessed with anticipations of death, a phenomenon that it explains with reference to our commitment to worldviews, broad systems of belief regarding the nature of reality, which are able to quell anxiety in several ways. In particular, according to Hayes et al. (2010, p. 700), a worldview 'manages death anxiety by providing meaning and purpose to life by delineating how life should be lived…it provides a basis for the feeling that one has personal significance and value (i.e. self-esteem)'. And when thoughts of death are unavoidable, religious or secular worldviews imbue us with a sense that either we will literally endure in an afterlife or

that something of which we are an integral part, e.g. a nation-state or ethnic group, will endure.

Self-esteem then is achieved through commitment to a humanly constructed worldview and 'meeting or exceeding the standards of value associated with the social role one plays within that worldview' (Pyszczynski et al. 2004). Experimental work that is motivated by TMT often manipulates thoughts of death in accord with the Mortality Salience (MS) hypothesis. Succinctly, the MS hypothesis predicts that reminding participants in an experiment of their mortality will increase their need for self-esteem, hence commitment to their worldview. 'Worldview defense' is a common reaction in such circumstances: participants tend to indicate more negative reactions to those who disparage their worldview and more positive reactions to those who uphold their worldview.

In formal tests of the MS hypothesis, participants are induced to think of death by being asked either open-ended questions—e.g. 'jot down, as specifically as you can, what you think will happen to *you* as you physically die' ((Pyszczynski et al. 2004, p. 439)—or questions that require a yes-no response—e.g. 'I am afraid of a painful death' (Quirin et al. 2011). Typically reactions to MS questions are compared to reactions induced by questions concerning other types of unpleasant events, say, thoughts about pain, in order to verify that results are not just reflecting a general response to anxiety, but that they are specifically related to reminders of death. Recent fMRI studies evince a pattern of activity that is distinct from generalized anxiety: for example (Quirin et al. 2011), thoughts about mortality, when contrasted with thoughts about pain, correlate with significantly greater activation in the right amygdala, the left anterior cingulate, and the caudate nucleus. Activation in the amydala and the anterior cingulate may be indicators of anxiety in response to the threat of mortality. Activation in the caudate nucleus may be an indicator of seeking refuge in habitual behaviors or automatic thoughts, in other words behaviors and thoughts that require no innovation; they can be derived from or based upon a pre-existing, prevailing worldview. Resorting to the habitual and the automatic is a common response to anxiety. Proponents of TMT argue that these patterns of activation support the MS hypothesis in that (a) this anxiety seems to be specific to thoughts of death and, (b) thought and behavioral reactions to anxiety are consistent with claim that mortality salience inclines us to 'defend' our worldview.

A separate fMRI study of existential anxiety probes the neurocognitive mechanisms involved in the processing of death-related linguistic cues (Han et al.

2010). One among their hypotheses is that processing of these cues correlates with modulation of activity in the insula, which has recently been heralded as the neural substrate of the 'sentient self'—a coherent representation of all one's feelings in the nonce (Craig 2010). Evidence for this role that has been attributed to the insula derives from many studies, among them being studies which reveal increased activation in the anterior insula when subjects' emotions are engaged by stimuli that are highly self-relevant. But death, though engaging the emotions, is exceptional. Activation in the insula decreases.

How might these tentative experimental probes of existential anxiety relate to our claim that eudaimons, people who live in accord with the platonic, hypothetical imperative, will not engage in second-guessing at the approach of death? First, since they have no misgivings, death or the suggestion of death might well induce less anxiety, hence less activation in the amygdala and the anterior cingulate. Second, since eudaimons, by definition, care deeply about what is true, they will be less likely to see refuge in habitual behaviors or automatic thoughts; hence, the caudate nucleus is less likely to exhibit high levels of activation. Third, when processing death-related linguistic cues, there should be less need to avoid thinking of these cues as related to self; hence, the anterior insula is more likely to maintain normal levels of activation.

Obviously we are aware that neither is our formulation of the hypothetical imperative clear enough nor are these experimental probes sophisticated enough for us to claim anything more than that neuroexistentialism is, perhaps, ready to begin taking its first steps as a type of applied science. It goes without saying that obstacles are many: to begin with, TMT, which has been scouting some of this terrain, with an experimental methodology, for twenty-five years, faces serious challenges from its critics (Kirkpatrick and Navarrete 2006). But even if we are unable to persuade the reader of our claims as regards the Platonic orientation, we hope at least to have shown that philosophical reflection over and scientific investigation into matters existential can inter-animate one another.

As for the Platonic orientation though, one way of stating our view is that we are giving a qualified endorsement of Nietzsche's position—'he who has a why to live can bear with any how'. We say that our endorsement is 'qualified', because it is not literally the case that just 'any how' is sufficient for life, for fitness. Here Nietzsche is just speaking hyperbolically. Our second and more significant qualification is that we claim that it is not that case that any 'why' can promote

flourishing. Instead, it is 'why' understood as successful pursuit of and integration of the good, the true and the beautiful that best promotes human flourishing.

Some might believe that eudaimonics, conceived in this way, is destined to either failure or to compromise of a pernicious sort. Among other things, Plato did not foresee that commitment to what is true would yield modern science and technology. This would not be so bad, but for the fact that science and technology sometimes conflict with the good and the beautiful. Copernican and Darwinian revolutions, along with modern neuroscience, have undermined certain aesthetically-pleasing, invocations to be good. Plato's story of the creation of the cosmos in the Timaeus, though beautifully written, simply is not true; the 'divine quest' to live ethically and meaningfully in a way that approximates the way that is 'worthy of the gods' has been shown to be just a fatuous wish.

The Platonic orientation that we recommend is one that privileges truth. If conceptions of the good, the true and the beautiful are not compatible, then one must choose. And the path to flourishing, we recommend, is a path that chooses truth before all else. Thinking about our natures and our lives in ways that incorporate superstition and wishful thinking is childish and unbecoming to rational social animals like us. Beyond being childish though, it would diminish us in many other ways as well, depriving us of self-respect, integrity and authenticity; in a word, it would be corrupting (Lynch 2004, p. 143 and Wood 2008, p. 13). But some empirical investigations of human psychology seem to suggest that we are better off if we allow for believing things that are not true. In the next section, we address this worry to see whether or not it constitutes an obstacle to our view of ethical inquiry and to our vision of eudaimonics.

IV. Positive Illusions and Tertullian Beliefs

Stich (2006, pp. 392-393) has recently written that 'in some very significant situations, having false beliefs leads to better outcomes than having true beliefs…if you have false beliefs you live longer and have a higher quality of life.' It surely seems as though he is speaking of 'outcomes' that are importantly relevant to flourishing. Indeed, this issue has previously been addressed by Flanagan (2007, pp. 168-182). It is undeniable that, in aggregate, people tend to harbor many false beliefs. The question though is whether human beings could live without them and compensate for any belief formation mechanisms that contribute to false belief proliferation, without undermining eudaimonia. Our response is both yes and no:

human beings do have a tendency to form and harbor false 'beliefs' but, strictly speaking, 'beliefs' of this type that contribute to human flourishing are not beliefs, as such.

We should first make it clear that we are not, here, taking a position on the nature of beliefs, per se. A majority of analytic philosophers who concern themselves with belief advocate some version of the idea that beliefs 'aim at the truth' (Williams 1973, pp. 137-138). Davidson (2003, pp. 366-367) emphasizes their 'veridical nature'; Searle (2001, pp. 37-38) claims it is their 'job to represent how things are'; Railton (2003, p. 297) holds that a belief 'not only represents its propositional content as true', it 'cannot represent itself as unresponsive to…truth'; Crane (2001, p. 103) says that 'holding true' is a synonym for belief; Wedgwood (2002, p. 273) observes that 'for every proposition p that one consciously considers, the best outcome is to believe p when p is true'; and, Shah and Velleman (2005, pp. 498-500) contend that beliefs are 'truth-regulated acceptance'. We think these views are problematic (Lane 2010) but, as far as eudaimonics is concerned, what matters is not whether beliefs generally tend to aim at the truth. What matters is whether, as a matter of fact, false beliefs and belief regulation that aims away from the truth contribute to human flourishing.

Let us begin by considering a life-threatening, existential predicament: imagine a medical doctor (or scientist, or scholar) who is quite convinced, on extremely good evidence, that neither alternative medicines nor prayer can cure mesothelioma cancer. Indeed let us suppose he believes prayer to be nothing more than a superstitious practice, suitable only for those who are afraid of the dark, as Stephen Hawking is wont to say. We think most readers will not find it far-fetched to claim that if the doctor receives the results of *his own* biopsy and that these indicate he has contracted an especially aggressive form of the disease for which median survival is less than six months, he might avail himself of various alternative medicines and turn to prayer.

How should we explain such behavior? Were we to employ propositional attitude, belief-desire, psychology toward explaining the consultations with CAM (complementary and alternative medicine) and religious specialists, there would be no trouble with identifying the relevant desire—prolongation of life. But then what is the specific content of the belief? To say that he believes these consultations will help cure his cancer, ex hypothesi, would be inaccurate. And it is not clear just what attitude could, both accurately and without loss of explanatory adequacy, be substituted for belief.

What seems to be problematic about the role of belief in this explanatory sketch is that holding beliefs about the relationship between mesothelioma cancer and CAMS or prayer is not especially difficult, *unless it is oneself who is afflicted*. Belief attribution is often asymmetrical; propositions that we think others should believe are not necessarily those that we believe, at least not if the implications for self are grave. Maintaining a dubious attitude toward a proposition—e.g. neither CAMS nor prayer are salubrious—requires energy (Gilbert 1993), which can be sapped when a person is dealing with existential anxiety. Research also indicates that stress and uncertainty incline people to resort to superstition (Keinan 2002), perhaps due in part to stress-induced lowering of blood glucose levels (Galliot et al. 2007). In short, people tend to enjoy a number of false beliefs about self, many of which have been studied under the rubric, 'positive illusions' (Flanagan 2007, pp. 168-182 and Lane 2010, pp. 602-613).

Positive illusions have been variously described and classified but, according to one of the better known sets of studies, one of particular importance to eudaimonics, they include self-aggrandizing perceptions, illusions of control, and unrealistic optimism (Taylor and Brown 1988, 1994). Concerning self-aggrandizement, the 'better-than-most' effect, Taylor and Brown observe that is nearly impossible for any one to be warranted in holding such beliefs. As regards illusions of control, the claim is not that people believe themselves capable of exercising control over that which clearly exceeds their reach; rather, they tend to evince a moderate distortion concerning things over which they are in fact able to exert some control. And, as regards unrealistic optimism, they point to the voluminous body of literature, including studies of self-deception (Mele 1997 and 2001), which indicates that most people are unrealistically optimistic in believing their future will be better than can be justified on statistical grounds.

Even when people are provided with accurate, relevant base rate information, they tend to cling to unwarranted beliefs. Pronin (2008) has discovered that these beliefs tend to be refractory to correction, especially when those beliefs concern self, in the present moment. Subjects can be presented with an explicit description of a bias, a description that indicates the bias is a common human tendency—immediately after acting in accord with that bias—and yet still fail to see themselves as liable.

Being refractory though is not necessarily a bad thing. Positive illusions can lead to higher motivation, greater persistence, and increased likelihood of success (Armor and Taylor 2003), effects which seem to be universal (Acker and Duck 2008, Church

et al. 2006). Such illusions also appear to promote use of efficient problem-solving strategies. People with conviction are more likely to succeed than are those who lack conviction—albeit not nearly so likely as they believe, after all these are illusions. Sometimes it might even take an illusion, just to predispose a person to taking action, doing something rather than nothing: Tiger argues (1999, pp. 615-619) that positive illusions are essential to overcoming our cognitive ability 'to generate endlessly discouraging predictions of the pitfalls of any action'. He avers that we are endowed with a 'cognitive override…a moderate design defect of pure reason', something that overrides 'cognitive literalness', thereby biasing 'the odds in favor of action'.

But more is involved than just action priming and performance enhancement. Some evidence suggests that positive illusions are adaptive for both mental and physical health (Alloy and Abramson 2007, Taylor and Brown 1988, 1994). Some people seem not to have positive illusions: they remember both good and bad self-relevant information with equal frequency; their evaluations of self and others are congruent; and, their self-appraisals generally coincide with appraisals produced by impartial observers. These people without positive illusions tend to be low in self-esteem, moderately depressed, or both. It is sometimes said of them that their beliefs bespeak a 'depressive realism'. Where 'well-adjusted' people, for example, are not expert at judging their control over events, depressive realists are.

As for physical health, first, studies of AIDS patients reveal that those who believe they can control the disease and prevent its recurrence, those who do not 'realistically' accept or appraise their condition, both exhibit a longer asymptomatic period and live longer (by an average of nine months) than those who do realistically accept or appraise their condition (Taylor et al. 2000). Among other things, it seems to be the case that those who foster positive illusions are able to maintain a higher level of CD4 T helper cells. Second, these studies of AIDS patients, along with studies of breast cancer patients, show that eventual disconfirmation of erroneous beliefs does not have harmful consequences. Third, what is true of the sick, is also true of the healthy (Taylor et al. 2003): while undergoing stress tests in a laboratory setting, people with positive illusions exhibit milder cardiovascular responses, quicker recovery, and lower baseline cortisol levels.

These studies dovetail with research on the placebo effect, salubrious effects that follow administration of pharmacologically inert substances or physiologically inactive treatments. Although awareness of placebo effectiveness is not new, PET and other technologies have made it possible to begin identifying its neural substrates,

which are distinct from the substrates implicated when active substances or treatments are administered (Mayberg et al. 2002). Indeed there are even hierarchies of effectiveness: e.g. injections are more effective than pills, and incisions more effective than injections (Evans 2004). Placebos have been demonstrated to be effective in the treatment of many conditions, including: pain, swelling, addiction, cardiovascular and respiratory problems, peptic ulcers, depression, anxiety, cancer, and Parkinson's disease (Benedetti 2008). Some of the mechanisms whereby these false beliefs—that one has been given a pill or a treatment that can itself precipitate healing—wield their effectiveness include the release of endogenous opioids or dopamine, the inhibition of serotonin uptake, the reduction of β-adrenergic heart activity, as well as the conditioning of immune receptors like lymphocytes and hormones like cortisol.

Collectively these data seem to indicate that our advocacy of platonic eudaimonia that privileges truth is ill-advised. Positive illusions and placebos, in other words, false beliefs, seem to promote enhanced performance, well-being, healing, health maintenance, even the favoring of action over inaction. Perhaps then we should allow that certain types of false belief are an exception. But we think the data do not suggest that beliefs, properly understood, have these effects.

First, recall that what is special about these 'beliefs' is that they are about self, not the external world, per se. Even for the case of placebo effectiveness beliefs are self-related—X will assist *my* recovery. Second, to invoke the 'beliefs aim at the truth' formulation, note that these 'beliefs' are not aimed erratically. They aim away, but strategically so. False 'beliefs' that have been demonstrated to have positive effects are, without exception, about a corner of the world with which they are in direct causal contact. That is, assuming that these beliefs are realized in virtue of particular types of neural activity—which is what our naturalism assumes—they are *about* a part of the world with which they can be in direct causal contact, say, the neural mechanisms in virtue of which we regulate hormones like cortisol.

Humphrey (2004; see also Beauregard, p. 233) has speculated that the mechanisms which are activated by placebos are activated by means of a mind-body 'lingua franca'. At the current stage of understanding, this lingua franca is just a theoretical posit, one whose function is fairly well understood, but one whose neural substrate is largely unknown. What we are proposing is an expansion of the lingua franca's scope such that it includes not only placebo 'beliefs' but also 'beliefs' that cluster under the rubric of positive illusions.

Consider that most effective medical treatments, including those motivated by the pathogenic theory of medicine, are little more than a century old. In lieu of demonstrably effective treatments, to avail oneself of shamanic incantations and rituals would be reasonable. But at least for those shamanic treatments which did no obvious harm, it would not have been worthwhile to conduct systematic evaluations, including careful consideration of instances of failure. If Plato could not foresee the advent of modern science, one could hardly expect such prescience from humans of the Pleistocene Era. Epigenetic rules that favored credulity over skepticism—with regard to self-related beliefs—may well have evolved as an effective adaptive strategy.

Quine (1994, p. 66) once wrote: 'Creatures inveterately wrong in their inductions have a pathetic but praise-worthy tendency to die before reproducing their kind'. We are saying that Quine is wrong, with respect that is to a certain set of self-related 'beliefs'. Quine's error is commonplace, even among evolutionary biologists, who pay more attention to 'ecological' than to 'co-adaptations' (Arthur 2004, pp. 117-127). The former are adaptations to the external environment; the latter, to the internal.

An ecological adaptation is exemplified by forest fly adaptation to increases in ambient temperature. Flies must struggle to stave off desiccation: the hotter it gets, the faster they lose water. Because the larger a creature, the smaller is its surface area relative to volume and because water loss occurs at the body's surface, in a hot, dry environment, bigger is better. Selective pressure then leads to an increase in the average body size of the fly population. Because the fitness enhancement is precipitated by something in the creature's environment—temperature change—this counts as an external adaptation. But suppose that in addition to differing by body size, these flies also differ in how wings are connected to thorax. Further suppose that the wing-thorax joint affects flying ability. Under such circumstances the population will evolve toward enhanced joint integration. Here though selection is mostly an internal matter: flying does occur in environments but the main impetus for this specific change is the need for adjustment between parts internal to the organism.

Creatures must adapt to the external world, but they must also adapt to the internal world. Among other things, creatures like us must deal with the existential problem that Atran (2003) has termed the 'tragedy of cognition': we can meta-represent self

and others, project the future, and envision the demise of all we care about. This capacity for meta-representation is—along with temperature change—part of the environment to which we must adapt. It appears to be the case that part of our adaptation to this internal, existential problem has been our mind-body lingua franca.

We believe that the lingua franca comprises self-related 'beliefs' that are best understood not as beliefs per se; instead, they are an amalgam of belief and desire (Lane 2010). To a first approximation the metaphor 'direction-of-fit' can be employed to capture the distinction between this amalgam and ordinary beliefs (Searle 2001, pp. 37-38). Most beliefs exhibit a mind-to-world direction of fit; in other words, these beliefs are shaped so to represent the world, as it is. Desires, on the other hand, exhibit a world-to-mind direction of fit; they represent not how things are in the world, but how we would like them to be. The amalgam of which we speak is a distinct attitude in that its purpose is to represent the world, but it simultaneously represents how we would like the world to be. So, as with the case of positive illusions, I 'believe' that I am more capable than I really am, but in virtue of holding such a belief, I position myself to enhance actual performance, which can be done because self-related 'beliefs' are confined to a corner of the world with which they are in causal contact.

We dub these 'beliefs' Tertullian beliefs, or t-beliefs. 'Tertullian' seems to be a proper eponym because it is said, apocryphally, that he proclaimed 'I believe it because it is absurd' (Ayers 1979, pp. 7-8). What he actually wrote, in the context of discussing Christian faith in Christ's resurrection is, 'it is by all means to be believed, because it is absurd…the fact is certain, because it is impossible'. The idea of believing because it is 'absurd' or 'impossible', though hyperbolic, evinces the deliberateness of aiming away from the truth. What matters is not that t-beliefs are false; what matters is that they seem calibrated to be false about a select set of phenomena, and only in certain ways and to a certain degree. The deliberateness is suggestive of design.

Others have written of possible belief-desire amalgams (Blackburn 1998, pp. 97-100) or beliefs that exhibit 'discordant behavior' (Gendler 2008). But what they have missed is this distinctive capacity exhibited by t-beliefs—the capacity to change the way the world is. And some might question whether there is a need to introduce t-belief as a distinct attitude, for perhaps it is just what we typically mean when speaking of hope. But hope seems to be ambiguous between belief and desire (Bresnitz 1999, p. 629), not an amalgam. Hope in the sense of 'hopeful' is nothing

more than belief in a better future, while 'I hope' seems synonymous with 'I desire' or 'I want'.

Provisionally, we think it appropriate to regard t-belief as an adaptation. We are very much aware that what we are able to say about t-beliefs is far from an ideal adaptation explanation (Brandon 1990, Polger and Flanagan 2002). We are, however, (1) able to give an ecological account of relative adaptedness, to explain how t-beliefs enhance fitness. (2) There is evidence from the study of positive illusions to suggest that t-believing is a universal trait. (3) It is also possible to say something about the mechanisms involved, by adducing evidence that shows placebo-induced changes markedly differ from changes induced by pharmacologically or physiologically active treatments. And, (4) it is not a trivial point to observe that t-beliefs can only enhance fitness, and not diminish fitness, if they are carefully calibrated. Erratic aiming of beliefs would result in the 'praise-worthy tendency to die before reproducing' our kind. In short, the degree of care taken in calibration also suggests that t-beliefs might be the result of design by natural selection.

But whether t-beliefs are better thought of as adaptations or as by-products (cf. McKay and Kennett 2009), does not significantly affect our defense of a eudaimonics that prioritizes truth. In either case, they show that apparent counter-examples to our position, e.g. positive illusions, are not, properly speaking, beliefs. They are t-beliefs, an amalgam of belief and desire that can promote both fitness and flourishing because they strategically aim at a corner of the world wherein they are able to be causally efficacious, despite the fact that they represent the world in a way that is not veracious.

None of what we record here is intended to deny that systems of false belief seem to proliferate at an alarming rate. What Lane (2010) has elsewhere referred to as the Conservation of Credulity Principle seems to hold everywhere: as soon as one system of false beliefs begins to loose its hold, another emerges to take its place. France, for example, has experienced an ever dwindling supply of Roman Catholic clergy. According to tax authorities the number is down to 36,000 (Kahane and Cavender 2002, p. 137), while the number of professional astrologers has steadily increased, such that there are now 40,000.

What stance should an empirical-normative inquiry like eudaimonics take toward this phenomenon? One possible response is to treat systems of false belief as reservoirs that can be drawn upon for the expression of certain aesthetic or moral

virtues. Recall that the Platonic orientation, while privileging truth, is also committed to pursuit of the beautiful and the good. Some systems of belief are expressed in ways that they can serve as models worthy of aesthetic appreciation and moral cultivation. Others are less worthy. We should be selective among these systems and foster those that are worthy, viz. compatible with the Platonic orientation. If given a choice between the King James Bible and Mein Kampf, a eudaimon would favor King James.

Furthermore, note that attending to and cultivating our aesthetic and moral inclinations need not come at the cost of sacrificing truth. As Flanagan (2007, pp. 183-197) has emphasized, to express is one thing, to assert, another. Creation stories, for example, can be appreciated for their beauty, admired for their depiction of ideals, and embraced as a way of making the universe *seem* meaningful, not simply as an inexplicable given. What eudaimonics does not allow is the treatment of such stories as assertions: that is, as propositions, as statements evaluable in terms of the 'true' and the 'false'. But even when stories are not taken to be true, they can be found, as a matter of fact, to be inspiring or uplifting; they can help us to transcend a narrow, local, occluded view of the world. Stories about carpenters from Nazareth or young boys from Hannibal who take flight down the Mississippi River, can promote a platonic orientation without being taken as literally true.

There is a philosophical curio known as Moore's Paradox. The idea is that the assertion of p seems to imply the belief that p. Accordingly, it would be self-contradictory to proclaim 'p but I don't believe that p', *if* the proclamation of p is regarded as an assertion. Since self-contradiction is not truth-conducive, we do not advocate it. But we do advocate, in some circumstances, that people should *express* p, while not believing that p.

As applied to positive illusions and placebos, one might say 'expressing p' can be interpreted as a way of saying I believe that a certain belief is beneficial, even though I do not actually believe it (cf. Flanagan 2007, p. 193). In other words, we can form second-order beliefs about beliefs to the effect that even when we clearly know the first-order belief to be false, we can believe that taking it to be true would be good for us. Can such a notion as this be operationalized and linked to the claims made on behalf of t-belief's causal efficacy? There is some evidence to suggest so.

It is almost universally assumed that for a placebo to be effective, the patient must actually believe in its efficacy. But a recent study of the use of placebos in treatment

of irritable bowl syndrome challenges this presumption. Kaptchuk et al. (2010, p. 6) provide data to support the claim that placebo effectiveness can be harnessed 'without deception', if the following conditions are satisfied: subjects (1) are provided with an accurate description of what is known about placebo effectiveness, (2) are encouraged to suspend disbelief, (3) are instructed to foster a positive, albeit realistic, expectancy, and (4) are directed to adhere to the medical ritual of pill taking. In effect, Kaptchuk et al. seem to be trying to find a way to engage our expressive capacities and substitute them for belief.

Eudaimonics of the kind we advocate is platonic. Here we have tried to show that this view is plausible, that it is compatible with neuroscience, that parts of it can already be operationalized, and that it can be pursued without compromising on the pursuit of truth. In advocating a privileged status for truth though, we do not intend to deny the actual role that false beliefs play in our world. Confronted by this fact, what eudaimonics recommends is thus: whereof one cannot assert, thereof one is still free to express.

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