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FROM PHYSIOLOGY TO MEANING:
FINDING THE SENTIENT BODY WITHIN THE PLACEBO EFFECT

by

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by

Oron Frenkel

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I. INTRODUCTION: EXPLAINING THE PLACEBO EFFECT

W.J. McGuire (1969) defines three stages for an artifact: first it is ignored; then it is controlled for its contaminating effects; finally it becomes regarded as an important phenomenon in its own right. Over the past decade or so, an emerging body of literature has focused upon a set of phenomena collectively referred to as the “placebo effect”, signifying the transition of this phenomenon into the elder stage of an artifact’s existence. This title has proven quite problematic, not only because it is imprecise, but also due to the baggage of the concept’s historical development. The problem reveals itself in a brief survey of the literature: there are about as many definitions and explanations of placebo effects as there are people who like to write about them!

We are faced with a phenomenon that is difficult to define, subdued under a title that is difficult to manage and elaborate upon, and thereby appears doomed to further obscurity. To the student of the history of intellectual ideas, this presents fertile grounds for a re-evaluation of the basic assumptions that frame the discussion. But this old age for an artifact may actually provide a source of youth for modern medicine for the “artifact” uncovers Cartesian problems with attempting to separate the social life and social, sentient body from a mechanistic physiological body. As we will see, attempts to understand the placebo effect, in fact, its very existence alone, challenges some of the fundamental assumptions underlying modern medicine.

As with most topics of mind/body persuasion, the dialogue is somewhat muddled and leaves a reader feeling unfulfilled in the absence of consensus. My intention in this paper is to reexamine current understandings of the placebo effect, arguing that a

groundlevel story of the phenomenon will require a radically different philosophical approach. I will begin by tracing the historical development of the concept. Then I will explore the most prevalent theories on the matter and present some phenomenological arguments that contest these theories, presenting an alternative conception of how to understand this effect. Finally I will discuss the implications of this alternative conception, which I believe point us towards important shifts in biomedical thinking.

II. HISTORY: PRE-MODERN

By tracing their evolution through time, we can come to know how the development of modern medicine shaped the concept of placebos themselves, and similarly how placebos have helped shaped modern medicine. The historical story of the placebo effect presented herein is simultaneously a story of how the modern medical tradition has historically shaped concepts such as holism and psychosomatic medicine.

We will begin with a brief discussion about historical perspectives on mental, psychological, and emotional factors in prevalent medical paradigms within the Euro-American tradition. Then as what we call modern medicine begins its ascent to power, we will see the three artifactual stages clearly, beginning with the complete disapproval and ignorance of placebos. As placebos become defined, we will explore how relevant changes in medical thinking further defined the placebo through attempts to control for it. Later we will return to the argument that the placebo effect actually forms the epistemic cornerstone for modern medical thinking and that it is a metonym for the ways that modern medicine has shaped its views of the body and psyche.

The terms “placebo” and “placebo effect” are just the latest symbols for an evolving concept of psychosomatic or holistic health within biomedicine. The placebo effect, regardless of how we may specifically define it later, clearly involves some manner of connection between the entities we nowadays label “mind” and “body” and some relationship to the human entity as a “whole.”

Many changes in European traditions of medicine over time have involved significant shifts in the ways that its practitioners have viewed human existence with regards to the nature of health and disease. Over time, medicine’s explanatory models have been broken up into separate domains, within which we can find trends of moving from dealing with the “whole person” to increasing emphasis on the body as an object as it is knowable by another person through the perspective of biomedical science.

Prior to the entrance of the word “placebo” into medical language, a similar concept existed but was regarded as the “whole” human being. This concept of the whole suggests that a healer appreciates all aspects of a patient’s experience beyond just the somatic. Perhaps the most appropriate historical epoch in which to begin this discussion is the time of Plato in the Ancient Hellenic tradition. One can find arguments from Plato, which while not the predominant view of his time, suggest the importance of holistic health such that one should not “...disregard the whole...for the part can never be well unless the whole is well.” (Plato, as cited in Lipowski 1984) Lipowski (1984) maintains that many medical writers since Plato’s day have supported this sort of integral view of wholeness, discussing at length the bidirectional connections between somatic and emotional changes.

Medical historians tend to cite the origin of modern medicine in Greek and Roman traditions precisely because they emphasized the somatic basis of disease and attempted to establish a study of medicine separate from supernatural belief systems, much like the prevailing system today. Hippocrates, for instance, who practiced around the 4th century BC, initiated an observational system of medicine and believed that illness had a physical and a rational explanation (WWW1). Yet despite this fact, he still recognized the importance of emotional factors in illness, describing somatic involvement in emotional states, like sweats and palpitations, as responses of the body to such things as fear, shame, and passion (Hippocrates, 1886). Thus we find that from even early on in medicine's life as rational science, that emotions could cause somatic responses was not disputed. We will later see that it is the role the emotional states play in perception that often casts doubt.

Galen's medicine of six centuries later reinterpreted Hellenic traditions through the lens of humors, basic elements of constitution and temperament within the human body and psyche that corresponded with four elements of nature. The humors were seen to exist within someone as a harmonious balance, and when unbalanced, led to disease (Shapiro & Shapiro, 1997). Galen's humors do not clearly separate into mental and bodily domains.

It was in the form of Galen's teachings that Greek medicine was transmitted to the Renaissance scholars (WWW1). In the 15th century, Paracelsus showed a continuing appreciation for the connections between belief and bodily health and the importance of faith itself. He appreciated that regardless of whether one believes in something "true" or

“false”, a strong belief can evoke dramatic responses from a patient (Shapiro & Shapiro, 1997).

In the 18th century we can find the Dutch physician Gaub continues the tradition of highlighting the importance of mental and emotional factors in healing such that, “should the physician devote all of his efforts to the body alone, and take no account of the mind, his curative endeavors will pretty often be less than happy and his purpose either wholly missed or part of what pertains to it be neglected” (Gaub, as cited in Lipowski 1984). As further evidence for the perpetuation of these opinions consider Benjamin Rush, the father of American psychiatry, who maintained the tenacity of the belief that mind and body are unified entities, at least as far as the physician is concerned. To Rush, in the eye of the physician, a human is “a single and indivisible being, for so intimately united are his soul and body, that one cannot be moved, without the other” (Rush, 1811).

By the beginning of the 19th century, the tradition of holistic medicine remained strongly present within the world of medical perception. As scientific methods became more widespread and began to enter into medical thinking, so-called Cartesianism begins to manifest itself within medical practice. These scientific methods focused largely upon reproducibility and empirical measures, depending largely upon the notion of an unbiased perspective, as determined by the reproducibility of results. Such methods helped fuel an evolving perspective that perceived distinctions between a private inner world, as could only be known by a subject, and an outer public world, that was accessible to the techniques of scientific experimentation. Herein we find the origins of the placebo.

III. THE “PLACEBO” ENTERS THE PICTURE

The word “placebo” originates from the Hebrew Bible. Psalm 116:9 begins with the word *ethalekb* which translates to English as “I will walk before.” When the Hebrew bible was translated into Latin, *ethalekb* became *placebo*. In an old Catholic rite performed after loved ones passed away, one would state the phrase, “*Placebo Domino in regione vivorum*,” which translates to “I will please the lord in the land of the living” or “I will walk before the lord in the land of the living” (Shapiro & Shapiro, 1997). The word entered the English language defined as “to please, give pleasure, be approved, be pleasing, agreeable, acceptable; to suit or satisfy” (WWW3).

Over time, the meaning of the term “placebo” began to take on derogatory connotations, probably because these ceremonial rites were increasingly performed by professional mourners for pay; it was said that they would “sing placebos” (Shapiro & Shapiro, 1997). It is not difficult to appreciate that to “sing placebos” for others over their deceased loved ones perhaps was not the most respectable of professions. Evidence for this early derogatory nature comes from Chaucer, who named a character Placebo, thereby endowing him with the qualities of flattery, sycophancy, and social parasitism (WWW3).

The late Arthur Shapiro, who seems to have done more extensive historical work on placebos than anyone else, found the earliest medical mention of placebo in Quincy’s *Lexicon Physico-Medicum*, a medical dictionary published in 1787, defined there as “a commonplace method or medicine.” It later appears in Fox’s *New Medical Dictionary* in 1803 with the modified definition of “an epithet given to any medicine adopted more to

please than to benefit the patient.” This same definition later appears in Hooper’s *Quincy’s Lexicon-Medicum* in 1811, which is often, though incorrectly, credited with the original publication of the word in medical texts (Shapiro & Shapiro, 1997).

By the end of the 19th century, definitions of placebo moved from this earlier “aiming to please” to a more modern medical definition. The placebo was first defined as inactive or inert when Foster’s 1894 dictionary defined it as “a makebelieve medication”. Other dictionaries around the same time sometimes used the specific words “inactive” or “inert”. Despite its appearance nearly two hundred years ago, Shapiro has been unable to find the word mentioned in medical literature prior to 1887 outside of these dictionaries (Shapiro & Shapiro, 1997).

IV. HISTORY: MODERN

The history of modern medicine has been framed as the “quest for exclusive professional authority” for its scientific methods over other forms of medical practice (Sullivan, 1993). Medical practices that did not subscribe to such principles were increasingly deemed illegitimate, the domain of quacks and charlatans. Herein we will find the placebo maturing to its second stage as an artifact: the quest for control for its contamination of medical evidence and knowledge. In the emerging biomedicine, we will see that the placebo demanded to be sorted out from efficacious treatments with specifiable mechanisms of efficacy.

In its rise to power, the biomedical paradigm transferred measures of legitimacy from outcomes into the methodology. Placebos were still capable of producing

outcomes. This is, after all, the source of our confusing effects! Yet through this history, placebos became the “un-medicine” against which “real” medical knowledge was developed. What follows is a cursory overview of the most recent historical era of modern medicine. Clearly, the history is far more complicated than how I will present it here, but I have chosen to focus on particular themes that elucidate particular threads of thought in the developing biomedical project.

Medicine’s rise to power started slowly. In the 17th century, physicians primarily relied upon a priori reasoning, leaving most medical hypotheses speculative and untested. In the 18th century, physicians began to implement meticulous observation and a more sophisticated diagnostic lexicon of disease, but there was still little to no experimentation. The 19th century saw the arising reliance upon and belief in strict methods for evaluation, hallmarked by the advent of statistics and experimentation in medicine. By the mid-20th century, biomedicine had gained technical superiority by way of its claims to a narrow scientific methodology. This technical superiority, while necessary, was not alone sufficient to establish legitimacy (Starr, 1982).

Medicine got its political and economic breakthrough due to philanthropic support, and this support was dispensed on behalf of its claim to an unbiased scientific method (Sullivan, 1993). Scientific medicine took full advantage of the fashion of these positivist times. If the emerging medicine was “unbiased”, then everything else must be “biased”. Such an artificial division serves not only to decide where resources get allocated, but in a deeper way, the rate of subscription to different worldviews. This demarcation of bias served to sharply divide the legitimate forms of medical practice from those which were illegitimate.

By the end of the 19th century, physicians had increasingly become skeptical and nihilistic about the various drug treatments of their day (Modell, 1976). The push to eliminate quackery and thereby legitimize the discipline of scientific medicine set the stage for the phenomenon of clinical trials. The first recorded experiment which used an inert control substance on humans was recorded in 1908. The word “placebo” first appeared in reference to an experimental control in 1930, giving birth to the “blind test” (Shapiro & Shapiro, 1997).

Benjamin Gold, a pharmacologist trained in animal experimentation, is credited with first inventing the method of a double-blind randomized placebo-controlled trial (RCT) in 1937 (Shapiro & Shapiro, 1997). Gold was the main creative force behind the new field of “clinical pharmacology”. In so doing, he sought to import the experimental protocols from pharmacological animal tests to studies performed on humans (Shapiro & Shapiro, 1997). Such a move required the elimination of any uniquely human bias. Gold and others argued that that this is easily accomplished by the use of inert experimental controls and randomized blinding. Gold championed the importance of utilizing this study methodology and it quickly caught on. Inert treatments, from thereupon officially referred to as “placebos” in the literature, became married to randomized controlled trials upon their invention, until death do them part. The randomized-controlled trial methodology stakes its claim to authority on this marriage.

It is interesting to note here that these new treatments did not have to compete with already known efficacious drugs. That is, their efficacy did not, at the time, need any demonstration against a critical competitor. Rather, the focus remained on comparing the drug to a “false” inert substance. This juxtaposition suggests a central, deep need amongst

biomedical scientists and practitioners to define the “real”. This was not just a quest for therapeutic results. If it were simply that, then we might expect comparative analysis between competitive treatments (as has since been argued to be the only ethical option). Thus what was at stake here was more than the champions of biomedicine advocating for their methods, which would be accomplished just as successfully with critical competitor testing. The rise to power of biomedicine was a struggle for truth, whereby biomedicine laid its claim to have access to the “real” description of health and thereby “real” solutions, in contrast to the charlatans. In this light, scientific methods appear to provide a political means of discounting the medicines of charlatans in comparison to the remedies of physicians, rather than being utilized solely for the purpose of evaluating efficacy and measuring outcomes.

Upon their arrival in the medical world, double blind studies were heavily criticized. People cautioned against misinterpretation of results, the inhumanity fostered by the study designs, problems in moving data collection from the laboratory to the clinic, and depriving doctors of power to make informed judgments (Shapiro & Shapiro, 1997). This persistence of the physicians of the day generates interesting questions as to their motivations. To what were these physicians holding on? Did they believe that clinical judgment was more informed than the emerging reliance upon diagnostic technologies and the nascent beast of evidence-based medicine?

By 1975, the vehement debate around placebo-controlled studies began to abate. Today, RCT's are required by the National Institute of Health for grant approval, by the Food and Drug Administration for policy approval, by journals for publication, by hospitals for use in the formulary, and by doctors for acceptance. RCT's have become

modern medicine's "gold standard". In using this phrase, physicians reveal how much they are willing to invest in this worldview and its methods.

"RCT's *define* modern medical practice and help set it off from mystery. This move confers ultimate authority on medicine as a science and separates it from other forms of healing" (Sullivan, 1993).

It is perhaps the final step in medicine's long push to power through control of "truth".

The purpose of a placebo up to the development of RCT's was usually either to substitute an inert treatment for a real but dangerous drug or perhaps to reassure when no "real" intervention yet existed. The use of placebos was not malicious but rather embedded in the medical practice at the time. But soon, the placebo moved from the clinical domain, where doctors dispense inactive medicine, to a new, experimental one, where placebos became indispensable research tools. Employed here, they ensured the basis for a discipline that can only be defined insofar as what it is not. In fact, placebos represent the antithesis of modern medicine, "the form of healing success against which contemporary scientific therapeutics is defined" (Sullivan, 1993). Placebos from therein provided the reference point for legitimacy and what constituted "real" medicine. By defining what legitimate medicine is not, they define what legitimate medicine is: truth defined in negative terms. Thus it is not a stretch to state that scientific medicine stakes its claim to legitimacy upon the back of the placebo effect to the extent that it claims RCT as the essential evidence or "gold standard" for treatment recommendations and legitimacy. As a practice, it could now be easily separated from that of the charlatan and, more importantly, could now be regulated. Practitioners of biomedicine staked their claim to this political and economic legitimacy in their scientific methodology. Thus it is crucial as we continue to keep in mind that medicine is *both* a set of practices and a mode of

inquiry to guide those practices. A new split-personality of the placebo had arrived. It can be dispensed as a practice by physicians in a clinical frame and also instrumental in the generation of medical knowledge.

V. PLACEBOS TODAY AND THE EMERGENCE OF THE “PLACEBO EFFECT”

The concept of a “placebo effect” coincides with the advent of controlled clinical trials (Shapiro & Shapiro, 1997). Presumably this concept developed since patients still got better by receiving a treatment presumed to have no efficacy more often than by receiving no treatment at all. Placebo effects, then, became the noise, against which the signal of a drug’s efficacy needed to be measured (Lakoff, 2002).

As clinical trials evolved in design and acceptance, so did awareness of the placebo effects against which efficacy was tested. Placebo effects had become interesting in their own right, the third and final stage for an artifact. This rising interest is perhaps best exemplified in the seminal paper published by Beecher in a 1955 issue of the *Journal of the American Medical Association*. After a lengthy review, he states that placebos have substantial therapeutic efficacy for a wide range of ailments. He goes on to suggest that they should be investigated for their powers (Beecher, 1955).

Since Beecher’s time, there has been a trend of rising interest in studying placebo effects. The interest has spanned many disciplines, bringing physicians, neurobiologists, psychologists, and anthropologists to the table. Each perspective has brought a different methodology to the question of how placebo effects work and seeks to understand them through a different lens.

As we proceed, it is important to take with us the lessons from the historical development of the placebo effect. We must recognize that the phenomenon now has a double personality. It has applications both within a clinical setting as well as being a critical research tool. This is no trivial artifact, but is intrinsically linked to the methods and tenets of biomedicine. This implies that our discussion is necessarily political, as any discussion about placebo effects encroaches upon fundamental principles of biomedicine. We will return to these implications later. First, let us look at how to better understand the effect itself.

VI. WHAT IS THE “PLACEBO EFFECT”?

In order to proceed with our discussion, it is imperative to create a working understanding of placebo effects. Unfortunately, definitions of the placebo effect are as diverse as the people who like to think about it and can be endlessly confusing. Consider this widely accepted definition, coined by placebo effect scholar Arthur Shapiro. When used in a clinical setting, a “placebo” is:

“any therapy that is intentionally or knowingly used for its nonspecific, psychological, or psychophysiological therapeutic effect, or that is used for a presumed specific therapeutic effect on a patient, symptom, or illness, but is without specific activity for the condition being treated” (Shapiro & Shapiro, 1997).

Shapiro intends to cover two points with this definition. Either a physician may knowingly prescribe a drug which she knows is ineffective, according to controlled trials, for the specific condition she has diagnosed; or she believes that the treatment is active even though subsequent controlled trials may show that statistically this is not the case. It

is the second half of his definition which is more applicable to our discussion, worth restating as something like:

“any therapy which provides therapeutic effects on a patient, symptom, or illness, but is without specific activity for the condition being treated”

Shapiro goes on to define the “placebo effect” as:

“the nonspecific [psychological or psychophysiological] therapeutic effects produced by a placebo, or the effect of a spontaneous improvement attributed to a placebo” (Shapiro & Shapiro, 1997), pg. 12).

Most definitions share certain essential features in common with Shapiro’s, the most important one being the reference to a substance’s specificity and/or efficacy (or lack thereof in the case of a placebo). The two terms are essentially synonymous when one considers that they are both products of the RCT methodology. When Shapiro, as well as most others, use these terms, they are referring to a presumed “objective” measure of a treatment’s efficacy. For a treatment to be effective it must be shown in a clinical trial to provide some improvement in an objectively measured symptom or disease process, one against which it is presumed to have a correspondingly objective measure of efficacy.

An obvious but rarely mentioned definitional problem here is the concept of a “placebo effect”. Placebos are generally believed to be inert substances; that is, in fact, a common definition. Yet almost every definition of a “placebo effect” claims it to be the effect *caused* by a placebo. If we take Shapiro’s definition and reformulate it, we get something like:

“The placebo effect is defined as the nonspecific changes produced by things objectively without specific activity for the condition being treated.”

This is certainly confusing and probably nonsensical. The issue here is that placebos do not *cause* the placebo effect. Placebos are inert. They cannot *cause* anything in the usual sense (aside from perhaps adding a calorie or two to one's daily energy intake!)

Rather than getting bogged down in arguing with other authors about definitions, I prefer to define the placebo effect through examples. While it may be difficult to say exactly what the “placebo effect” is, like many other phenomena, its students can certainly recognize it when they see it. I wish to first present two illustrative examples that will be carried through the remainder of the paper.

EXAMPLE 1: PEPTIC ULCER DISEASE

A patient goes to his doctor concerned with pains in his abdomen. The definitive diagnosis of peptic ulcer disease comes after the physician observes an ulcer through a small video camera inserted down the patient's esophagus. The physician suggests entering a controlled trial for a new drug to treat peptic ulcers. In the trial, the patient is told that he is to take one pill twice a day for four weeks. He is told that the pills he received may be a new drug being tested, an older drug known to be effective at treating ulcers, or inert pills with no pharmacological activity at all, being randomly assigned to one group or another. Neither he nor the physicians running the study know to which group he has been assigned. He takes all the pills on schedule and returns four weeks later for a follow-up visit. The same scope procedure now shows that his ulcer has disappeared. The trial is “unblinded” and both the doctor and patient discover that the patient was one of a group of patients who received inert medications. The rate of ulcer improvement among this group was moderate—about 50% of patients' ulcers healed—compared to higher rates of 65-90% among those receiving the “active” drugs

(Lanza *et al.*, 1994). For reasons we will return to later, it is virtually impossible to compare the rates of placebo healing to the non-studied population or to individuals who received no intervention at all.

EXAMPLE 2: PARKINSON'S DISEASE

Consider the other example to which I often refer back for clarity. A highly publicized study by de la Fuente-Fernandez *et al.* (2001) examined patients with Parkinson's disease by imaging their brains with a PET scan. All the participants in one arm of the study received three treatments: a placebo and two different doses of a drug used to treat Parkinson's called apomorphine. The catch was that while all the participants knew that they were going to receive each of the three treatments, none of them knew *when* they were receiving which treatment. All the participants showed changes in their brains under the administration of placebo drug, and the response was comparable to that of therapeutic doses of drugs which are known to increase activity in this particular brain region. Additionally, it was found that the increase in dopamine release was correlated with the clinical improvement reported by the patients. For our purposes later, it is also important to recognize that all the patients studied had plenty of prior experience taking medications for their condition prior to the study.

VII. ACKNOWLEDGING THAT THERE ARE PLACEBO EFFECTS

First and foremost we must address the common doubt of whether placebo effects are actually "real". The most common argument against placebo effects is the rightful assertion that most diseases wax and wane by themselves. This argument, based

upon the natural course of disease, suggests that a certain number of ulcers spontaneously disappear over some certain time course of observation. The placebo effect is then explained as a statistical artifact due to the fact that people tend to go see their physicians when they are most sick. These folks, then, are the ones most likely to be enrolled in a clinical trial, and when they begin their placebo treatment, their condition is likely to start improving on its own. This comprehensive argument is known as the principle of “regression to the mean” (Moerman, 2002).

The claim here is that somehow the prevalence of a disease is approximately constant in a population. Say out of a group of one hundred people, forty suffer from peptic ulcer disease, but the disease is not constant. Ulcers come and go on their own and at any given time maybe twenty of these forty folks actually has an ulcer. If you enroll only those twenty in your study, who were more likely at the time to go ask for the doctor’s help because their bellies were actually hurting at the time of the study, many of their ulcers will simply disappear without any treatment due to the nature of the disease, and the data will show what looks like a placebo effect. Meanwhile, folks who weren’t in the study, who may not have been experiencing any acute symptoms might have had a flare-up, but they will not appear in the statistics since they weren’t enrolled in the study. Theoretically, though, the number of cases of active disease remains constant at any given time. It is claimed that a certain bias towards studying the active disease distorts the results.

Now, most students of the placebo effect ought to be willing to concede that the self-limiting nature of disease and the principle of regression to the mean probably does, in fact, account for some fraction of any set of healing rates (placebo and active, as well).

But, first, the regression to the mean argument remains unproven (Moerman, 2002). Second, there are many study designs which would avoid simple regressions to the mean that still show evidence for placebo effects, not to mention the vast body of evidence which suggests that there is much more going on than simple statistical blips.

VIII. DISCUSSING PLACEBO EFFECTS WITHIN THE RUBRIC OF BIOMEDICINE

Placebo effects are generally considered as routes towards achieving healing. That is, in order to acknowledge that a placebo effect took place some element of healing must have occurred. In order to understand the implications of this, we ought to first briefly explore what we mean by “healing”.

First, we can clearly say that healing is not an end in itself, but rather a process. As Gadamer suggests, health is, “the rhythm of life, a permanent process in which equilibrium re-establishes itself” (Gadamer as cited in (Svenaeus, 2001)). Health cannot be statically defined, but is more accurately captured by calling it “a way of being”, a normalcy which we all know. Attempting to define health and healing constitutes an opus of work in itself, and the details do not concern us right now. Rather, it is important to capture some minimal conditions of healing to be sure that we might recognize it when we encounter it later in our discussion.

Much discourse has emerged in the past several decades around distinctions between dimensions of health and disease. The most common of these has been an oft-cited line drawn between “disease” and “illness”, where disease is taken to be that set of elements which are observable by a third person, and illness is taken to be the experience

associated with the measurable disease. For our example of the ulcer patient, the disease can be diagnosed based upon visualization of the ulcer and abnormal laboratory tests; the illness might encompass such things as discomfort experienced with certain foods, aversions to certain activities, and other “psychological” changes.

The disease/illness distinction highlights that there do, at least, exist separate dimensions of the phenomena of health and healing which we might label as first person elements and third person elements. At two extremes, the patient can experience improvement but the doctor’s measurements may not have changed. Similarly, the doctor’s measurements may have changed but the person is not feeling any better. Thus, while we recognize that they are often connected, these two poles of healing are independent of each other.

Appreciating the third person dimension of healing should come easily to anyone socialized to Western thought processes. The observation and description of bodies from an objective perspective is the hallmark of modern biomedicine. There is a large resistance by biomedical practitioners to engage in a discussion about the placebo effect because it is often perceived as something which can be fully accounted for within a first person description, putting it “all in someone’s head”. In order to avoid this escapist approach, I hope to focus mainly upon phenomena which rear their head in both dimensions. Thus the examples I presented earlier capture this third person dimension. They are *measurable*. This means that these phenomena do not solely exist “in someone’s head” but force themselves upon the perception of another agent who can acknowledge that something has indeed changed in an empirically verifiable fashion.

As a brief example, we can consider chronic pain, the poster-child of what are generally written off as all-in-the-head-type subjective phenomena. A physician generally believes that she has no direct access to pain and can only learn about it through patient reporting. This necessarily limits it to the realm of the subjective. Yet today we know that certain measurable things like chemicals made by injured cells are involved in mediating the experience of pain. Before these discoveries, chronic pain was frequently relegated to the world of pure subject. Though the physician had medications she could prescribe, the patients' disorders were frequently interpreted as a psychosomatic disorder, a euphemism for "all in their head". The discovery of pain physiology has catapulted such phenomena into the more "real" world of objective, third person biomedicine. This, of course, is simply a reiteration of the alleged difference between disease and illness, exemplified by the possible construction that someone maybe ill but not have no detectable pathology, or have a disease but not be ill.

Physicians have created a distinction to encompass this: "organic" versus "functional" disease. Organic disease can have a subjective element (an illness component) but is highlighted by some sort of clinical or laboratory data with which a physician can make a diagnosis. This is the target of treatment. In contrast, a functional disease is one which a patient reports changes but the physician can find no corroborating evidence. This results essentially in a failure of the physician's third person account to grasp the story of the patient. Thus in order to properly engage the biomedical audience, we will primarily consider processes that have both organic and functional elements, like our preliminary examples, and hopefully later we will be able to extrapolate to the two seemingly independent poles of health.

IX. EXPLAINING THE PLACEBO EFFECT: CLASSICAL CONDITIONING

Much work has been generated in the psychology literature that attempts to explain placebo effects. I will first discuss the evolution of this field, leading us towards the predominant current hypotheses about placebo effects. We will begin our discussion with a brief review of classical views of conditioning. Then I'll discuss the developments that have changed psychologists' views of conditioning. Finally, we'll discuss what current day psychologists have to say about placebo effects.

Let's start with the classical view of conditioning. This view began with Pavlov's experiments and depicts conditioning as an automatic process, something very mechanical, definable purely in terms of stimulus and output. The idea was that you could take a stimulus which had a certain effect, like presenting delicious-smelling food, and call this an unconditioned stimulus (US). The reaction to this stimulus, say, excessive drooling, would then be called the unconditioned response (UR). Pavlov's genius was to see that you could pair another stimulus with the US, such as ringing a bell, and call this a conditioned stimulus (CS). This pairing of US with CS is repeated multiple times in a processes referred to as conditioning trials. Then, one might find after a certain number of trials that you no longer need the US anymore to elicit the response, but the CS somehow gains the ability to produce a similar response to the UR. This response can come about in the absence of the US, earning it the title of a conditioned response (CR). I can now ring a bell and my dogs salivate as if I had just taunted them with a T-bone steak. According to Pavlov's original "stimulus substitution model", this conditioning

effect was simply an automatic substitution of one stimulus, the ringing bell, for another stimulus, which was already instinctually or physiologically related to some effect. An automatic response already present, in this case the salivation in response to yummy smells, appears to simply get rerouted to a new stimulus.

Some placebo theorists attempt to understand the physiological role of meaning in terms of this stimulus substitution model. In the stimulus substitution model of placebo effects, two particularly good examples of this sort of reasoning come to mind. The first is the common sense understanding of the placebo effect. What I refer to is the pairing of a treatment's effect with its vehicle. Repeated exposure to the stimulus of a pill or injection can act like conditioning trials. The argument is that something with which the administration of a treatment is associated can somehow become a substituted stimulus, much like the bell for the yummy smelling food.

The most convincing research to support this argument comes from animal studies and the birth of the field of psychoneuroimmunology. Ader (1997) performed these experiments on rats using an immunosuppressive drug called cyclophosphamide. By chance, the drug solution was artificially sweetened with saccharin to encourage the rats to drink it. The researchers discovered that when they re-administered a control solution of just saccharin after an initial trial that included the immunosuppressant, the rats demonstrated a similar immune response even in the absence of the drug. Thus, the authors concluded that the rats' immune systems had been conditioned to physiologically respond to a perceptual stimulus, a striking example of stimulus substitution that involved a body system beyond the neurological.

This sort of reasoning is probably the principal reasoning that many people use to explain what happened in our examples discussed earlier. Each had some sort of experience with taking pills, acting as conditioning trials, maybe even specific pills which they had been led to acknowledge were particularly helpful for their respective conditions. This, then, set up the stimulus substitution that took place when the person then took pills that had no pharmacological activity. The “placebo effects” seen and reported were simply conditioned responses to the stimulus of the treatment vehicle.

X. EXPLAINING THE PLACEBO EFFECT: EXPECTANCY THEORY

So far, the classical conditioning story is seductively simple for beginning to understand placebo effects. Many psychologists have adjusted the concept of classical conditioning to account for advancements in our understanding of some more sophisticated features of how conditioning actually operates. Contemporary psychologists generally hold that conditioning is the process of learning relations between events, known as *expectancies* (Kirsch, 1997). Expectancy theory argues that conditioning trials leads to the acquisition of expectancies that certain events will follow other events. An expectancy depends on the information that the conditioned stimulus provides about the unconditioned stimulus (Rescorla, 1988). For example, consider Pavlov’s dogs once again. The results might be radically different if I only rang the bell every other time I showed them food. In this case, the dogs may not have ever become conditioned because, in the language of expectancy theorists, the bell stimulus would not have any predictive value

about the presence of yummy food since they were only correlated 50% of the time. In this expectancy view, the unconditioned response, salivation over the yummy food, can be viewed as an anticipatory response that prepares the organism for the occurrence of the anticipated US (Siegel, 1983). An organism learns predictive values of stimuli and responds accordingly.

The purported benefits of the expectancy story versus the classical conditioning are many-fold. First, we are freed from relying upon conditioning trials to elicit placebo effects. Conditioning trials remain just one way to set up these expectancies, but not the only way. This allows us to make sense of studies where different verbal cues can elicit different placebo responses without any apparent conditioning trials. Proponents of the conditioning theory resist the distinction between verbal cues and conditioning, instead, often choosing to claim that we must look to broader social contexts for the conditioning trials. That is, every social interaction acts as a conditioning trial. Certain cues and stimuli are constantly delivered to social individuals who react in certain ways towards them via various stimulus substitutions. Thus by the time someone enrolls in a trial or visits their doctor, certain verbal cues have gained the ability to trigger some automatic, conditioned response.

While it does seem that something like this is at play here, the process appears far from automatic and is certainly complex enough to look further than simple mechanical models. While nothing in principle may prevent classical conditioning for completely accounting for such verbally-mediated placebo effects, the argument is certainly far from being so convincing as to stop us in our tracks.

A more important distinction that expectancy theorists make is that sometimes the effect can go in the *opposite* direction or even a qualitatively different direction entirely from the conditioned effects. Consider, for example, that in certain conditioning studies, a CS paired with morphine actually caused increased pain sensation when given alone (Siegel, 1983). A similar effect happened when a CS was paired with chlorpromazine, a tranquilizer (Siegel, 1983). Classical stimulus substitution models suggest that a CS should mimic the effect of the UCS with which it is paired, the way that our classic example of salivating dogs. These studies show that sometimes the opposite is possible; this would be like the dogs being presented with a CS while the bell was rung, and then the CS was presented to them without the bell and suddenly their mouths dried up completely! Even more interesting are studies when there is no single axis for these effects to take place. Specific cognitive-motor deficits due to alcohol are not often induced by administering placebo alcohol, and similarly responses elicited by administering placebo alcohol are not produced by actual alcohol (Hull & Bond, 1986). Thus effects induced by placebo alcohol are of a completely different quality than the effects that one experiences when imbibing true alcohol, indicating that the expected effects can differ radically from ones that could be attributed to conditioning alone. This could be something like a dog barking if it expected food versus the salivation response when it smelled it.

Expectancy theory seems to hold up better to direct testing where studies have been conducted which compare conditioning trials and expectations together. While there are not many such studies, most investigations clearly show that both types of interventions can effect placebo responses (see, for example, (Voudouris *et al.*, 1985, 1990); Kirsch, 1997). Interestingly, (Montgomery & Kirsch, 1997) show that conditioning

trials produce stronger analgesic effects than verbal cues, but that the verbal cues can modify the effects of the conditioning. This suggests that indeed, the effects of conditioning are mediated via something that is modifiable by verbal cues. In this case, the authors believe these to be expectancies. As an interesting additional support for their hypothesis, they found that repeated trials do not extinguish the placebo response. In a stimulus substitution model, extinction is the rule. If you repeatedly ring the bell for the hungry dogs without giving them food, each time you ring the bell they will salivate less and less. The expectancy theorist might say that they anticipate the food less and less each time and so respond accordingly less.

These are certainly solid evidentiary reasons to prefer the expectancy story over stimulus substitution models of conditioning with regards to placebo effects. From a philosophical perspective, the evidence provides a sigh of relief. The big win for expectancy theory comes in its ability to free placebo responses from the realm of the purely automatic and deterministic. In the world according to a stimulus substitution model, virtually everything becomes automatic and we become automatons. Every social interaction, maybe even every moment of our lives, is interpreted as a set of mechanical events, our exposure to stimuli and our responses based upon how we have been conditioned to respond. This way, the idea of cultural and social differences, the different meanings we have all learned about the world around us, the context in which we exist and to which we respond, is reduced to variations in conditioning trials.

XI. HOW EXPECTANCIES WORK

It is important to appreciate that in this contemporary theory, conditioning is no longer an automatic process. In the classical view, repeated exposures to two stimuli, the yummy food and a ringing bell, can cause one of these stimuli to substitute for the other, turning salivation from an unconditioned response into a conditioned one. In expectancy theory, however, the causal sequence seems to develop in the opposite direction, the response occurs *in anticipation of the stimulus*. After hearing the bell ring, expectancy theorists argue that the dogs somehow will begin to salivate in expectation of the stimulus of the yummy food instead, in contrast to an automatic effect triggered by the bell ringing.

The crucial development of expectancy theory with regards to our discussion is that conditioning trials work because they create these expectancies. Thus the trials themselves are not as important as the expectations they create and leave behind. Furthermore, conditioning trials are just one way to establish expectancies, but there are other ways to do this, such as simple verbal cues or cultural socialization.

Let's follow this through using the example of our PD patient. It begins with repeated administration of active Parkinson's medications. In this sense, the activity of the active medications is perceived, and in the act of its perception, this acts as the unconditioned stimulus. The people had to perceive some effect with a certain regularity in order to develop an expectancy of such an effect in the future. Expectancy theory would state that the pills themselves act as the conditioned stimulus, they are the vehicles with which someone comes to associate the effects. In this case, the conditioned stimulus probably holds a high predictive value for the co-existence of the unconditioned stimulus, since, if the medication is working at all, it probably does so most of the time. Thus the

patient comes to learn that the conditioned stimulus of the pill portends the imminent improvement in symptoms and this learned relation establishes itself in the form of an expectancy of this effect. This way, when such a person participated in the study described earlier, the pill provoked a response expectancy for the effect of the active medications which that patient normally took.

So far our story about expectancy-mediated placebo effects sounds very much like one written in terms of classical conditioning. At least in terms of our PD patient, there is not much difference. It seems that a stimulus substitution story would be perfectly capable of accounting for our PD placebo effects. The only difference we see between the two is the order of causality. In the stimulus substitution model, the treatment vehicle, which in this case is the pill, acts as the conditioned stimulus and initiates the measurable effect in the brain in a fully automatic way. According to the expectancy theory, the response is re-interpreted as the manifestation of the agent's expectancy, already in place, an anticipation of the drug's effects that are not present.

When we look more closely at how expectancies work, we find that there are actually two distinct phases of action. The first is the set of psychological mechanics described earlier, going from a perceived stimulus, in our case, the vehicle for the medication, to the elicitation of an expectancy. While the process by which expectancies are elicited by these stimuli may remain a matter of speculation, such correlations are certainly fair game within the domain of experimental psychology. Understanding the connection is reduced to discovering what elements of a stimulus or exposure predict the strength and types of expectancies formed. Presumably this can be worked out resulting in a complex but fairly straightforward theory about how to create and elicit expectancies.

To a physician or philosopher, the problematic element of expectancy theory exists in going from an expectancy to the response associated with it. The problem emerges if we try to account for both the objective and subjective elements of the response. We conceded that when we remain within the realm of the subjective, expectancy theory provides a legitimate project of mapping the predictive value of stimuli.

If we try and go further, we discover an enormous conceptual leap required of us to go from expectancies to measurable physiologic responses. Within the placebo debate, expectancies are defined as “explicit, consciously accessible” constructs (Stewart-Williams & Podd, 2004). The reasoning behind making these requirements is basically bound to the methods by which they are measured. Authors argue that in order to prevent a model from granting these cognitive abilities to animals, we need to restrict expectancies to things that are verbally reportable and consciously experienced. Further, they wish to prevent the circularity of claiming that expectancies exist but are not measurable, as would be the case if they operated implicitly or on an unconscious level. (Stewart-Williams & Podd, 2004) Thus their restrictions create a testable expectancy model based on linguistically reportable constructs only present in human agents.

XII. WHY EXPECTANCIES FAIL

The problem for us is not to understand how an active medication can produce physiologic change. A medication, an object with certain physical properties acting on a body that is also supposed to be a chemical system with physical properties constitutes a consistent train of logic. As long as we stay on one side of healing's dimensional divide, we can maintain a consistent argument. Talking about active medications affecting physical systems is like talking about how stimulus representations create and affect expectancies.

The looming question is how to bridge these two dimensions? How can we find a sequence of events or states that go from a private, subjective expectancy to an observable, public change in the physiologic body? This question is no less than a profound mystery. Echoed within it is the centuries-old mind-body problem. To put our question another way: how can we ever connect things like beliefs and thoughts, which exist nowhere, to the body and the world of objects that exist in space and time? (Merleau-Ponty, 1962). If we hope to understand these sorts of effects within the dual dimensions of healing, it seems that we need to find a common ground where objective and subjective factors can gear into each other. A consistent, ground level story of healing responses to inert treatments has to take place on the same footing as where chemical interventions do. We seek a story that sidesteps this perennial problem of crossing an infinite chasm in going from a subjective world to an objective one, and instead, find a story that can account for healing in response to both chemicals, with physical properties in space and time, and beliefs and expectancies, which are not privy to such measurability.

As mentioned earlier, expectancy theorists define expectancies as consciously accessible higher order cognitions. (Stewart-Williams & Podd, 2004) Kirsch (1997) refines this by distinguishing between “stimulus expectancies” by which someone might expect something external, like food and water, and “response expectancies” by which someone expects a non-volitional response. The cognitive approach of expectancy theory, we discussed earlier, can safely take us from one subjective mental state to another. The perception of a stimulus is interpreted as a subjective mental state. This mental state then triggers another, this time the anticipation of a certain response. If the non-volitional response with which we are concerned is just another subjective, reportable mental state, then it makes a certain amount of sense to define things this way. What happens when we try and apply this concept of a response expectancy to the body, that is to a change that is also observable by a third person?

While most psychologists seem to avoid the question of going from subjective experiences to objective physiologic change, Kirsch attempts to tackle it with the answer that the body is probably related in much the same way that it works with volitional action, as distinguished from something like response expectancies (Kirsch, 1997). A volitional action in this context would be like raising my arm when I want to. This assumes that a normal volitional action occurs in a similar sequence of events, that an agent expects something to happen and then it does. Unfortunately, this move to claim that response expectancies probably happen much the same way that volitional actions do is not very enlightening. The difficult problem we faced before, of crossing an infinite chasm between the subjective and objective worlds, still remains in the realm of normal volitional action. The logic of volitional action constructed in this way retains the same

problem: how does a private, subjective expectancy manifest in a measurable, public display?

As I see it, what persists in this kind of attempt to provide a subject-object bridge is the traditional conception of an intentional act. The way these expectancies are defined and analyzed, as consciously accessible higher order cognitions, puts them squarely in the interpretational view of intentional acts as traditionally conceived. Traditional accounts of intentionality commonly assume that mental states such as belief, desire, and expectations, share their essential intentional features with the linguistic act by means of which they are reported (Kelly, 2003). The intentional features of the linguistic act involve two parts: some form of *propositional content* (e.g. [that an elephant is in the room]) and *an attitude towards that proposition*, such as an attitude of belief that the proposition is true. Traditionally, the content of these intentional states can be specified by conditions of satisfaction, “the conditions the world would have to meet in order for the state to be satisfied.” (Kelly, 2003) Thus the propositional content of intentional acts is traditionally constituted by linguistic concepts. These conditions thereby come to characterize the subject’s understanding of the world. Thus we construct propositional content that is a conceptual representation of the way the world is toward which a subject can have an attitude such as belief or expectation.

To see the intentional logic of expectancies as their proponents define them, we can start with certain propositional contents, say [that this pill contains an active compound] and [that this compound improves the symptoms of Parkinson’s disease]. We could then say that the patients who participated in the study had an attitude of expectancy or belief towards this content. Thus an expectancy can be reduced to

conceptual content and an attitude towards that content. To get from this to a certain objective response leads us to seek a causal chain of events that leaps across the infinite canyon between the mind and body.

To counter this problem, I will argue that while expectancy theorists are correct to label placebo responses intentional acts, the logic by which such responses operate as they are experienced is not compatible with traditional accounts of intentionality. As described earlier, in traditional accounts, intention is a conceptual representation or goal upon which an agent can act, ending in success or failure. Thus an intentional act, as traditionally conceived, would have the agent entertain an explicit goal in mind, a representation of what a successful outcome of the action would be, and then acting upon that representation to try and achieve success. As a simple example, consider the simple act of grasping a doorknob. The traditional conception of this action would involve a representation in mind of what would count as a successful grasp of the doorknob. With this concept in mind, then the agent would act by reaching for the doorknob and either succeed or fail.

When we try and utilize this conceptual framework to make sense of our placebo responses, things become a bit confusing. Essentially, expectancy theory tries to draw an analogy from a volitional action to the physiologic changes associated with a placebo response. In order to accomplish this, the placebo response would have to entertain these two components, an attitude towards some conceptual propositional content and action based upon conditions of satisfaction.

However, we need not require an agent to possess a concept of what a successful action would be prior to the response. The action appears to utilize a different sort of

representation than the linguistic or symbolic concepts used to report it. In terms of the more familiar grasping action, someone has no idea *how* he/she actually does this in terms of linguistic concepts. Linguistic representations are of a fundamentally different sort than whatever representations the agent is using while actually performing the action. In the same way that if we were trying to understand the involvement of physiologic processes in the arm during the act of grasping, we would not require the agent to have any concept of these processes in order to perform the action.

Further, suppose someone has a concept of a particular body part, say the substantia nigra. This might happen by deference, say maybe someone heard their doctor speak about it, or they read about it in a book. We can still say that this concept is not being used when the act is happening. After all, how could someone else's concept of a particular brain region affect how their own brain works? The concept of a specific part of the brain is perspectiveless, detached, and fully devoid of the life that flows through the organ itself. While there are folks who argue that it is possible to learn methods of physiologic manipulation by way of concepts, this generally only happens through extreme training, through techniques like visualization or biofeedback. In our regular everyday existence, this sort of causality from concept to physiology is not readily apparent; just thinking about a certain brain region does not seem either necessary or sufficient to alter its behavior in any significant way.

Even in the case of focused learning like biofeedback, we still find that at some point the concept-driven theory of action fails. Consider the following *gedankenexperiment*: someone learned how to activate their substantia nigra through biofeedback as measured on the same type of scan as used in our PD trial. Even if the subjects could conceptualize

their substantia nigra through a monitor that displayed their PET scan results, at some level, they would report that they have no idea *how* they actually achieve this effect. The case is similar for our normal everyday volitional action. Not only does the layperson not utilize any concept of the physiologic processes in order to actually do something like grasp a doorknob, but even a physiologist who studies this sort of thing, with a detailed conceptual knowledge of how muscles contract, nerves fire, etc., at some point, falls off track. She still has no idea how she actually carries out the action, nor does she need one!

In order to maintain the position of mediation through concepts, in the face of this critique, one would have to argue that an agent still has a representation of the action, but this representation occurs on another level than the level of the physiologic response. The burden remains to show how we might bridge the levels of conceptual representation to physiologic action. It remains difficult to see how an expectancy is supposed to be passed along from this initial intentional state, the expectancy of response or reward, to every action associated with the physiological response. With normal volitional actions, like even simply lifting my arm, we know that there are numerous physiologic processes involved. If we are going to call the action of raising my arm intentional, then it seems that all the component processes constituting this action should take on this intentional aspect (Dreyfus, 1999). But if this action was mediated by a concept, then it still remains to be seen how such a concept could reach down and govern all these intentional physiologic process (Dreyfus, 1999). If the PD patient had to conceptualize success, as is required by the traditional account, it would have to be something like [that this pill contains a compound which will increase dopaminergic

activity in my substantia nigra]. This clarifies the difficulty of going from a conceptual representation of the response to the response itself. At some point if we ever want to reach the body, we must taken an infinite logical leap to leave the domain of the subject and enter that of the body as observable object. The furthest we could get is to the expectancy of a response and perhaps a concept of the substantia nigra, but a concept of the organ remains of an entirely different world than the organ itself.

On one hand we have the domain of a purely mechanical world, made of objects with physical properties that simply behave in an automatic, causal fashion according to the laws of physics. If placebo responses could be accounted for simply in these terms, we wouldn't need any cognitive content to begin with. We have resolved that placebo responses are intentional acts in the fact that they are not simply reflexes. That is why, after all, expectancy theory was created in the first place. The model of humans automatically substituting one stimulus for another as just a pure reflex seemed too simple. In order to properly understand the process, we need to add at least some cognitive content. On the other hand, I have argued that this cognitive content does not appear to be experienced as explicit, linguistic, "consciously accessible" concepts, in effect abandoning the domain of an idealized volitional action, a subjective "I" acting out my explicit goals and directives in the world.

XIII. A DIFFERENT INTENTIONALITY TO ACCOUNT FOR PLACEBO EFFECTS

In order to preserve the intentionality of placebo responses while avoiding the problems of a conceptual mechanism requires a different understanding of the

phenomena. We can be clear that these responses are, in fact intentional. We can conceive of these responses actually failing in the sense that they may not always happen. Thus, they are not perfectly automatic or entirely predictable. What makes them interesting is that, as we are discussing them, they are not on the other side of the intentional spectrum either. That is, placebo responses are not in the same category as a normal volitional action like raising one's arm. We are not discussing inducing physiological change just by way of one's will. Rather, we are focusing on a set of phenomena that appear to require that someone be led in a certain way, solicited to respond appropriately to a situation.

A way of reframing the discussion would be to argue that part of the representational content involved in the experience of placebo responses operates in a non-conceptual embodied form. This frees us from trying to relay perception of a stimulus to a response through a representational matrix of concepts. This shifts the discussion from one of concepts towards a kind of understanding in terms of "bodily capacities and a disposition to act." (Kelly, 2003) In our attempts to evade purely objective or subjective descriptions, we are led to a new place, what Merleau-Ponty calls the "middle term" between objectivity and subjectivity, where I will argue that we can find the groundlevel story about placebo responses.

This argument I have presented about the intentional logic of placebo responses parallels those given by phenomenologists against cognitivist and empiricist theories of perception and action. To better understand the thrust of this argument, we need to consider the structure and nature of Merleau-Ponty's motor intentionality, which he argues is our most basic form of intentionality. Our problem of searching for the causal

sequences of placebo responses in terms of concepts was that when we involve concepts, entities in the mind, we seemed to lose the body, making it a thing in a world of objects. To see more precisely why this happened and how we can avoid this problem, we must consider the body already at the center of perceptual acts and its role in our everyday unreflective activity.

Dreyfus argues that our everyday unreflective activity, which he calls *absorbed coping*, does not require a prior knowledge of what one is trying to achieve (Dreyfus, 1999). Absorbed coping is, rather, a different kind of comportment from the traditional conception of intentionality. In the more traditional conception of an action, the body is viewed as an object which responds to an intention, defined as a conceptual representation of what would constitute success. Instead, in absorbed coping, we find that where the body of the agent is “solicited by the situation to perform a series of movements that feel *appropriate*.” (Dreyfus, 1999) This is in contrast to the more traditional conception discussed earlier in which a concept is taken to govern the action. Instead, we have a story by which there is no requirement to know what would count as success. In fact, there is no requirement for any conceptual content at all. Rather than an attempt to achieve success, a conceptual representation of what the action ought to be like, one instead has a sense of “*being drawn towards an equilibrium*.” (Dreyfus, 1999)

To get the phenomena in view, reconsider the canonical example of grasping a doorknob. We discussed how in the normal everyday situation, the act of grasping a doorknob is a skillful, unreflective act. When one normally grabs a doorknob as one is entering or exiting a room, one has no concept of any of the multiple processes necessary to succeed in the act. To the person entering or exiting the room, the doorknob is instead

perceived in terms of its relationship to the situation in the sense that a doorknob will appear “turnable” to a person who is entering or exiting a room, in other words, to someone for whom the doorknob will afford such action as entering or exiting. Merleau-Ponty argues that in everyday unreflective experience, we perceive objects only in terms of what we can do with them and how we can relate to them. Importantly, this relation, this suggestion of what is possible is sensed in a bodily way. It is not experienced in a conceptual or representational way, of the form “I think that”, but rather an embodied sense of “I can.” (Merleau-Ponty, 1962) When we say that grasping is an example of absorbed coping, we are saying that in experience *the body* moves towards the doorknob in a skillful way. We find the body at the center of perception and action, sentient of its world and capable of responding to it in an intentional way.

One’s experience in terms of this lived body, instead of acting upon goals in mind of turning doorknobs, demands to be reinterpreted in Dreyfus’ terms of conditions of improvement. The agent need only have a sense that things are going well, that the tension of the situation is being resolved. For our doorknob example, the tension might be in the form of entering or leaving a room and needing to go through a doorway to do so. In absorbed coping, the movements of the agent’s hand in grasping the doorknob is best described in terms of the reduction of this tension, of what an agent senses as a movement towards a more appropriate response. The *situation* governs the movement, soliciting the behavior of the arm, rather than the agent acting upon some internal conceptual representation of what he/she is trying to achieve.

Merleau-Ponty describes the level at which this sort of intentionality occurs as in between the domains of pure subject and pure object, operating in what he calls the

“middle terms”. (Merleau-Ponty, 1962) We can see this more clearly in our example of grasping. Clearly physiology plays an important role. There are countless molecular and cellular processes that need to occur in order for someone to grasp a doorknob. If one’s muscles worked differently in small ways, such as different contraction times for muscles, or more drastically, such as having a flipper instead of an arm, then one’s perception of the doorknob would be radically different. Thus, the objective properties of the body partly determine both perception and action in a profound way. They contribute greatly to the way the phenomena occur, in a way by determining what is at first possible. We might say that the physiology both enables certain perceptions but also contributes to the boundary conditions of the phenomena.

Social and psychological factors play similar generative and constraining roles. To continue with our example, suppose someone were raised in a different culture altogether, where doors did not exist. In this case, the doorknob will obviously be perceived quite differently in terms of what it affords the person in comparison to someone who learned how to use doorknobs at an early age. The embodied sense of what one can do with an object is strongly shaped by one’s socialization. Similarly, psychological factors can affect how the world appears. Personal emotional memories or beliefs can influence perception as well. An agoraphobic who fears the outside would probably perceive a doorknob in terms of its practical significance with respect to its position as a portal to his/her terror.

We can draw the parallels to our placebo case where we know that physiologic and psychological factors both gear into the same kind of response. We know that the physiological makeup of the system shapes what kinds of responses are possible in the

first place, setting certain boundary conditions on the phenomena. In a similar vein, we can argue that psychological factors, too, can influence someone's experience by virtue of the fact that verbal cues can modify someone's physiologic response to either an active or inactive treatment. For example, a treatment given openly with full disclosure to the patient has been shown to be more effective than the same treatment given in a hidden way (Benedetti *et al.*, 2003). This effect is mediated by psychological factors that a person brings to a situation.

In order to understand these effects, though, we must find that level at which these disparate factors can gear into each other. Merleau-Ponty's level of description allows us to describe these changes in a way that is consistent with the phenomena. According to Merleau-Ponty's story, the response can be understood first and foremost as a shift in how the world appears to an individual, a top-down approach where one's situatedness need always be accounted for. This way of describing perception takes place in terms of the various *affordances* that the world presents. The term "affordance" was coined by the psychologist J.J. Gibson in order to describe a way that we perceive meanings as already present in the objects we perceive (Gibson, 1986). An affordance was meant to signify that we do not separate the practical significance of an object from our perception of it. Cups appear grabbable; doorknobs appear graspable. Objects are always perceived in terms of what we can do with them. Thus we can say that objects *afford* us certain things we can do with them or to them.¹ As Merleau-Ponty argues, the way the

¹ The way I will use the term affordance differs slightly from how Gibson used it and demands some clarification. To Gibson, affordances are hidden in the optical array that we perceive, as objective data in what reaches our sensory organs. By some unspecified mechanism, we become attuned to these affordances based on our situation. In the Merleau-Ponty story, and the way in which I will utilize the term, an affordance acts as an indeterminate solicitation that is situation-dependent. While Merleau-Ponty never actually used the word affordance, it seems a convenient way to describe the phenomena he describes so

world appears to us is prior to conceptual reflexive thought (Merleau-Ponty, 1962). In fact it is precisely because we perceive the world this way, in the middle terms, that we can extract subjective and objective knowledge from it, both requiring a reflection upon experience. We cannot start with the description of the body as an object and then try to explain how subjective states gear into this objective description, as we will already be removed from the lived body. Similarly, if we start with the subjective terms of psychology and try to explain how the body gears into these, we face the same infinite chasm of dualism. Instead, if we start with the level of perception we can see how each of these contribute to and help determine a common ground.

The Merleau-Ponty story unites perception and action in the experience of the lived body. What one can do with something is already perceived directly in an embodied fashion, prior and anterior to any conceptual representation or determining thought. Thus we can say that the body itself responds to the world, sentient of the circumstance and the object solicits the agent's body to respond. The distinction between perception and action becomes blurred, as the responsive body plays an active role in the perceptual act. And on this level, action is experienced as a sensed trajectory towards an appropriate response.

XIV. MOVING TOWARDS THE PHENOMENA: THE "MEANING RESPONSE"

long as we properly qualify its use. The key difference in the terminology lays in the notion of a solicitation. Gibson had no such notion. To him, given certain situations, I simply may or may become attuned to certain affordances of an object, and then I would act on these affordances in the ordinarily intentional way (via goal-directed behavior, etc.) To Merleau-Ponty, the situation ultimately governs how I perceive an object, and it does so precisely in how the situation solicits me to respond. Thus, in Merleau-Ponty terms, an affordance is better described as the degree to which an object solicits me to respond to it in a particular way given my situation.

We are now ready to ask how these placebo responses seem to work at the level at which we are interested: the phenomena. The first thing we must deal with is the problematic terminology of the placebo response. If the situation governs perception, then we can quickly see that individuals are not responding to the actual placebos themselves. If someone is sitting in the room with placebo pills sitting on the counter with no prior meanings or connections to the pills, it would be quite a stretch to argue that the person is responding to the pills themselves, just by seeing them. The pills must be administered within a given setting and the person must be situated in a particular way in order for any response to occur. Thus we see it is the situation governing the response. Therefore the term of “placebo response” or “placebo effect” is already misleading, for it suggests that the placebos themselves induce a particular response or effect. Placebos themselves are defined in terms of their *lack* of an ability to induce an effect, so it is nonsensical to then define a “placebo effect” in terms of what these things can cause.

It is along these lines that the medical anthropologist Daniel Moerman argues we need to rename the phenomena as the “meaning response”, where “meaning” refers to a meaning-laden or meaningful response to a familiar situation, not to deliberate or explicit “meanings” (Moerman, 2002). In this way, we approach describing more closely *to what* people are responding, the perceived, socially embedded meaning of a situation. It also allows us to broaden the range of phenomena for which we can account in terms of our story. We will later see how this simple and preliminary re-conception of the phenomena broadens the scope of our discussion beyond the simplest case of people responding to vacuous vehicles for medication like inert pills or saline injections. I hope to conclude this

section by expanding this phenomenological approach to see how this story is always present and is always affecting health.

If we want to reinterpret the meaning response in these terms and generalize Merleau-Ponty's argument, we need to envision it as the process of someone responding to the situation of administering a medication in the comportment of absorbed coping. I have claimed that this approach is demanded by two separate arguments. The first is that we have shown how the placebo response exists neither in the domain of classical conceptions of what we can call "pure reflexes" nor "pure volitional action", at least insofar as either is traditionally conceived. Second, we argued that these responses, when viewed as actions, do not require the invocation of any representational concepts on behalf of the agent in order to accomplish them. Merleau-Ponty's motor intentionality provides us a way to re-conceptualize the meaning response in agreement with these two arguments.

XV. AFFORDANCES OF HEALING

Much like any object is perceived in terms of its practical significance or its affordances, we must describe the affordances of an inert medical intervention. In much the same way that personal history, culture, and physiology converge to shape how an object appears, we can conceive that the same process occurs in terms of what we can call *affordances of healing* that must be present in order for someone to respond to an inert intervention. We can identify affordances that are both specific and general to the particular illness that someone is experiencing. The practical significance of a doorknob

can only be understood in terms of the way the situation unfolds. The doorknob gains practical significance only as someone is trying to pass through a doorway on the way towards entering or exiting a room. Similarly, we can see that the practical significance afforded by a pill or injection will be determined by the situation.

When I say that these affordances will have both general and specific components, I mean that there are commonalities to the illness experience in general, and that there are varying levels of generality based upon different illnesses. That is, there will be more commonality between the worlds of two patients suffering with Parkinson's disease than between one patient with Parkinson's disease and another with congestive heart failure. Despite the differences in experience, on the level of the phenomena we can still describe some shared experience between different worlds of illness. In other words, regardless of the specific pathology involved, illness has a phenomenology all its own.

Previously we defined illness as the subjective experience associated with a pathologic process proceeding within the objective body. Now we want to redefine it in terms of the lived body. Phenomenologists argue that the central phenomenon of illness in comparison to health is the breakdown of the flow (Svenaesus, 2001). Normally, the body appears as lived-through. Insofar as I aim for things with my body, it is itself absent for me. Instead perception takes up the world around me rather than the means by which I come to know that world.

In these phenomenological terms, illness becomes a process of alienation involving the breakdown of affordances. Illness thrusts the body from its absence in the background to the foreground of one's phenomenal field. Sometimes these changes may occur so slowly and in such a subtle way as to be virtually imperceptible. As is often the

case with diseases of insidious onset, one's condition may be deteriorating without any recognition on behalf of the patient. In fact, sometimes, like in the case of Alzheimer's disease, this neglect or ignorance of one's own condition is claimed to be part of the disease process. According to our formulation, it is interesting to consider whether someone needs to be relatively aware of an illness in the sense that they need to be able to name it or conceptualize a change in their world. In illness as defined above, it seems that one need not be able to say, "I see that I cannot do what I used to do." To be able to accomplish these tasks requires linguistic ability that we argued earlier was fundamentally different from how the actual perception and action are happening. At a minimum, though, someone ought to have a sense that something is wrong, that somehow the flow is not what it used to be. We will return to this tricky claim shortly.

XVI. LOCATING THE PHYSIOLOGIC MEANING RESPONSE

When we say in absorbed coping that the situation solicits one's movement, we know that an agent's movement involves numerous physiologic processes. I am thus arguing that we can generalize Merleau-Ponty's arguments about motor intentionality to the case of healing, where the situation similarly appears capable of soliciting an intentional physiologic response.

What is most difficult to understand is *how* this process actually plays out. In motor intentional acts, like grasping, an agent is solicited to act, and moves towards a *sense* of tension resolving, a sense that things are going well. This sense of what is an *appropriate response* contrasts with an explicit concept or representation of the goal of the action,

which would possess the binary conditions of success or failure. If we change the intentional requirement from conditions of satisfaction to simply conditions of improvement, viz a sense that things are going well, then we ought to be able to find a correlate in meaning responses. There must be some sense that things are going better, that one's condition is improving.

This sense, when we talk of illness, will at least be partially perceived in terms of the general flow of health discussed earlier, the way that breakdowns between perception and action can begin to resolve. Solicitations back towards health come from what is perceived in the intervention. In much the same way, in lived experience a doorknob solicits an intentional motor activity, which appears as a specific physiologic response from a detached perspective. So we have something like a pill, in the right context, can solicit a similarly specific physiologic response. Such *affordances of healing* are similarly shaped by physiological, psychological, and cultural contributions as any other affordances.

From the detached perspective of an outside observer, one still might argue that the act of grasping clearly has a conscious aspect, making it different from the brain response to a placebo. When we see someone reach for a doorknob, we know there is an intentional act occurring. It is not as clear in a brain response to an inert pill. However, I am specifically arguing that these two processes are not qualitatively all that different from each other. The act of grasping has a physiologic component insofar as it requires physiologic processes to happen. By our earlier analysis we saw that whatever is happening in these placebo responses, we must grant that it is an embodied intentional act and thereby has a situated absorbed coping aspect to it, as well. Further, empirical

studies show that in order for placebo responses to occur, some sort of understanding or meaningfulness is required; in the absence of any perceptible cues of a placebo treatment being administered, there is no such response, even when the response itself is not subject to any conscious conceptual awareness about the substantia nigra's firing (Benedetti *et al.*, 1999).

To appreciate the causality and specificity of this kind of intentionality, consider the well-established example of biofeedback. Several studies have documented the amazing ability of individuals to produce reliable twitches of single muscle fibers (Basmajian, 1977). This is an extreme example where clearly individuals have no explicit, conceptual idea about how they actually do this or even *that* they are doing it, strongly arguing against any traditional account of intentionality. Instead, we can track the development of successful biofeedback skill as going from a disorganized activity of triggering lots of muscle fibers to twitch towards the skillful manipulation of single fibers. Without any conceptual idea how they do this, we know the agent needs some sort of feedback that things are going well, that her efforts are creating appropriate responses and importantly, she is conscious of sensing what is an appropriate response as she goes through the exercise. She is not just entertaining a goal or outcome and waiting for it to happen. Neither is she acting upon some conceptual representation of her brain or muscles. The neural circuits of biofeedback only exist for the disembodied observer, from a perspective outside the lived experience of actually doing it. For affordances of healing to exist, an agent needs some similar sense that things are going well, a sense that their responses are appropriate. This is essentially akin to saying that someone has a sense of

what well-being is, and that the situation appropriately solicits this movement towards well-being or healing.

This brings us back to our question: to what degree does someone need to sense that his/her world was not in a state of health in order to engage with affordances of healing? Consider our Parkinson's disease example once again. We want to claim that the situation seems to solicit the patient to respond in ways similar to how drugs have acted in the past. The patient senses these as appropriate responses to the situation in which she normally receives medications, specifically having a sense of less restriction on her movement through space. It is tempting to claim, then, that in order for the patient to have this sense of appropriateness, she must have an equally strong sense that something is inappropriate or wrong with her condition. After all, it seems that a sense of an appropriate response that we would call improvement in her symptoms can only happen insofar as there was a deficit to improve upon. In essence, this would be requiring our patient to have a sense of potentiality of resolving the breakdown of her flow due to illness. We must concede, though, that this remains an empirically open question. What would we make of a patient who was in denial of her symptoms but nonetheless showed marked changes in a similar PET scan study to inert drugs? How could someone be both aware of solicitations towards healing and unaware of her condition? An answer to this question lies outside the scope of this paper, but certainly demands more attention.

Given this story what can we make of the efficacy of inert interventions? First we must recognize that the physiologic and pathologic processes involved need not be articulated as by the person suffering the illness. This is basically restating what I have claimed before, that someone need not utilize linguistic representations of the part of

their body which is dysfunctioning in order to experience suffering or healing. This claim of non-conceptual experience then extends to the intervention itself, that is, whatever affordance someone perceives in the intervention need not be conceptualized. It seems then that in order for a meaning response to occur, someone must perceive the affordance of healing somehow in terms of partially resolving a breakdown. The connection between perception and physiological response does not require the conceptual mediation of a reflective process. Rather, we can say that the sentient lived body itself responds to solicitations made upon it by its situation. This means that the physiological responses to the perception of these affordances of healing play out in Merleau-Ponty's middle terms, where the seemingly disparate poles of subject and object can actually influence the common ground of experience.

The specificity of the physiological response is worth marveling at. How can we make sense of it? Since Merleau-Ponty gives us a story of action intertwined with perception, to understand how a part of the body acts, we must look for the way such a body part is geared into perception. This leads us to a perplexing situation. The story of absorbed coping, when applied to meaning responses, requires a strange hybridized story. On the one hand, the physiologic contribution to the response happens in terms of what is a possible course of action. When Merleau-Ponty describes the "current of existence" flowing down a limb, he means that the limb counts for the organism, that it is present by way of affording a way of being in the world that would include using such a limb, a situation I previously described as an action's boundary conditions (Merleau-Ponty, 1962). Physiologic specificity is built in to the way the body gets set to respond to a certain situation. Similar to the way that the design of our eyes determines the

wavelengths of light we can see, the structure of our arms shapes the affordances we will perceive when confronting a doorknob. A different arm design would surely mean that we would perceive such an object quite differently. In this way, we can say that the objective body facilitates or potentiates perception, setting the boundary conditions of what sort of experiences are possible. The biological design of the body sets the boundaries for what one can do with such a body. The mysterious part is *how* this process works. We must realize that one is always situated, always aiming towards something with one's body. The body is a given, prior to any action, and it is in this way that it shapes perception. Since it is our vehicle for being-in-the-world, it necessarily defines how that being takes shape and evolves in time and space based on what it can do.

For our specific example of PD, we know from physiologic studies that the substantia nigra is largely involved in initiating movement. As it begins to dysfunction, we know that one of the primary defects of someone's experience when this happens is difficulty initiating movement. The way that this presents itself to the person is in actual problems of moving, such that we can imagine distances and time intervals in accomplishing simple actions may appear much longer than for the healthy person.

Somehow the intervention must come to take on the affordance of being able to affect this part of the person's perception that has suffered from breakdown and in so doing actually affects the physiology of this brain region. Despite the progress we have made here, how this affordance and the embodied physiologic changes come to be remains entirely mysterious.

XVII. REVISITING EXPECTANCY THEORY

In the face of this impasse, despite all the effort invested in arguing against its basic mechanics, I would like to revisit expectancy theory to salvage the story with some phenomenological modification. Psychologists introduced expectancy theory to accommodate the cognitive nature of conditioning phenomena. By doing this, they hoped to re-cast conditioning as learning. I have argued that what is learned is better described in terms of perception, not in terms of linguistic consciousness. Thus what is learned we can now describe as the body getting set to obtain an optimal perspective on a situation; the response is generated in the body's attempt to improve perception.

The psychologists argued that conditioning trials and verbal cues could each modify placebo responses. Now we see that the ability of the body to learn to get set in a particular way can serve the same purpose. Verbal cues and conditioning trials are both ways to shape the situation, which then can shape someone's perception, and thereby modify the objective body in the ways we described earlier. Thus changes on the level of being-in-the-world can serve the same logical function as expectancies without the cumbersome baggage of traditional intentionality.

The problem, of course, for psychologists is that the level of the phenomena cannot be directly measured from the objective, third-person perspective their discipline requires of them. Personal experience is not necessarily or always accessible for direct data collection by an outside observer, as in the experience is captured by brain wave or electrical activity, or the healed mucous membrane of the stomach lining. Psychology as an experimental science can only work with direct observations or verbal reports by their subjects, which are necessarily secondary to the phenomena themselves. Reporting is

reflexive and limited by the linguistic framework used to report it. The move to emphasize the phenomena is to posit an entity that is, in essence, inaccessible to the methods of scientific psychology, thereby drawing the criticism of circularity (Stewart-Williams & Podd, 2004). We could posit anything, and without any empirical data one way or another, there are no restrictions on what kinds of things could be posited! In response to this, first I point out that we are not just positing something wacky and out of the blue, but a rigorous analysis of common experience and perception. Second, we're not simply taking explicit expectancies and just burying them in an unobservable unconscious, a move many expectancy theorists fear (Kirsch, 2004; Stewart-Williams & Podd, 2004). Instead, we are recommending a different description of consciousness itself. Meaning responses or healing affordances operate by a causality that is entirely different than the traditional account of acting upon the conditions of satisfaction.

One distinct advantage of this phenomenological analysis is a better cohesion of the data on "placebo effects". To date, only one study clearly suggests that meaning responses are possible in humans by pure conditioning alone. Benedetti, *et al.* (1999) conditioned patients with an opioid drug that produces respiratory depression as a side effect. The researchers administered this drug at concentrations low enough that the individuals did not notice the respiratory depressant effects. Then, when they later administered inert vehicles of the drug, they measured significant respiratory depression, this time a pure placebo response. The key point here is that the patients never formed any conscious, reflexive concept about a physiologic response. Hard line expectancy theorists write off this study as an anomalous finding (Kirsch, 2004). Others take a more cautious approach by saying that while most of the time, expectancies mediate meaning

responses, sometimes they can be caused by conditioning without the formation of expectancies, in other words, simple stimulus substitution in the absence of any cognitive content (Stewart-Williams & Podd, 2004). Yet this finding, widely regarded as anomalous in the literature, should really not be so surprising given our analysis. Benedetti's study parsimoniously fits into our discussion as simply another example of the body learning ways to get set in different situations, and this process of getting set, of being solicited to action, involves holistic physiologic adaptation without having to resort to any conceptual consciousness. Instead, it appears to play out entirely in terms of a pre-conceptual awareness or consciousness, a perfect example of the sentient body capable of developing absorbed coping or sets to act in familiar situations.

Lastly, I would argue that it is more likely that expectancies that are the anomalous artifacts in all of this, not the one trial that actually highlighted our phenomena of interest. Since every other study done on the subject has looked for expectancies, it is only natural that any effects of conditioning would be seen as causing these expectancies, and that any observed meaning responses were mediated through these cognitive constructs. Thus, if our analysis is correct, the fact that only one study left out the artifact of measuring expectancies, means that it is the only one that presented our phenomena of interest in its purest form. In this light, expectancies appear as artifacts of the methods by which psychologists are bound, creating constructs to measure what may in fact be spurious to the phenomena of interest. To the detached perspective of the psychologist, the phenomena of the subject is a black box whose processes can be modeled, but these models don't necessarily describe how things actually work. In other

words, they may provide a descriptive account of what happens without capturing what generates the action.

XVIII. GENERALIZING: THE PLACEBO EFFECT IS AN ARTIFACT

I would like now to visit some further implications of our analysis for understanding these responses. In discussing to what people respond, we discussed the role of affordances in healing. First, we need to point out that these affordances, and the way the body responds to their solicitations are present in any case where a medical intervention is administered. This lends credence to the claim that “diagnosis is treatment” in that any interaction with a medical context can bring about a healing response (Brody, 1997). This refers back to our earlier discussion of whether there even is a placebo effect. Brody’s claim suggests that a pure control group would be impossible to achieve, since even a “control” group needs to be assessed, perhaps given an endoscopy like our example presented earlier. In order to gather data for comparison at all requires some element of exposure to and interaction with the health care system and all the inherent meanings intrinsic to these types of encounters. Thus the act of observation always occurs within a meaningful context, thereby affecting that which is being observed or measured. This reduces the ability of researchers to only look at differences between a placebo pill and just an endoscopy as two variations on the same sort of meaning response.

The claim that these affordances are always present in medical contexts means that meaningful physiologic responses are present regardless of whether interventions are

active or inert. This argument is supported by several studies showing that the way in which either inert or active medications are administered can affect the elicited responses. For example, the efficacy of an active treatment has been shown to be augmented when it is given openly compared to when it is hidden (Benedetti et al., 2003). Presumably, administering medications in a hidden fashion, without any awareness on behalf of the patient, precludes any of their ability to get set for the treatment, so a minimal meaning response is observed, in contrast to the case where providing a treatment openly allows the situation to solicit a meaningful physiologic response. In other words, active medications seem to be equally affected by these meaning responses as are interventions lacking any specific activity.

The affordances presented by situations do not necessarily have to be towards healing, either. Equally well-established phenomena, though less discussed in the literature, are those referred to as “nocebo effects” (Hahn, 1997). These are responses that move away from healing, making people feel ill, or making their condition worse. The nocebo effect has been implicated in a wide range of instances, from things like placebo side-effects to more dramatic examples like voodoo death (Hahn, 1997).

This effort to generalize the phenomena to any situation that presents affordances related to health and disease brings us necessarily into the world of the philosophical anthropologist. Any attempt to classify what must be present in a situation in order to present affordances in terms of health and illness will vary cross-culturally. What can induce these meaning responses in members of one culture are not the same for someone in another culture. Healing rituals are culturally specific. In fact, different cultures embody entirely different ways of being in the world, generating different signs, symptoms and

interpretations of what kinds of diseases, what treatments are available, and of what appropriate interventions might consist (Brody, 1997; Hahn & Kleinman, 1983). Hahn and Kleinman call this culturally-specific worldview of health an “ethnomedicine” (Hahn & Kleinman, 1983). An ethnomedicine can be understood as a ontology of health and disease, and varies according to an individual’s cultural world. Let us take someone socialized into one ethnomedicine, for whom illnesses are widely accepted as being due to spirit possession by angry spirits and the appropriate interventions are three day long exorcisms. It is not a stretch to believe that her physiologic response to inert pills might be different than a woman of similar age who watches many commercials about all sorts of different new pills that the commercial suggests she should ask her doctor about. Similarly, the response for this woman and our other, possessed woman, would probably be very different with respect to the exorcism ceremony. The pills, or the exorcism ceremony, both relate different meanings to those engaged with them and what these different rituals mean to these different people is going to affect how they respond.

This perspective reminds us that when we observe healing affordances, what we are seeing is a meaningful physiologic response to the way in which someone is situated. Discussing culture reminds us that this situation is as culturally determined as it is physiologically determined. To a large degree, we are unaware of the way that our cultural practices, habits, beliefs and expectations shape our perception. These cultural self-understandings and practices present themselves to us all the time, always operating in the background of our perceptions (Scheper-Hughes, 2004). Thus, we can say that these meaningful situations are always present, always soliciting us to respond to them insofar as we are perceiving and living in the world around us. This is precisely the lifeworld that

Cartesian medicine seeks to eliminate by the practice and expectations of mechanistic physiology.

To see the profound implications of the combination between these insights from anthropology combined with our phenomenological arguments about meaningful physiology, consider an impressive example. A few physicians took a very large sample of Chinese-Americans and compared them to Caucasian Americans with respect to life expectancies with various health conditions and the years in which they were born. The idea was that in terms of Chinese astrology, being born in particular years portended poorer outcomes of experience with disease. The researchers found a significant reduction in life expectancy if individuals were born in years with this property according to Chinese astrology, and they found this effect only in the group of Chinese-Americans. Even more interesting was that the effect seemed to be related in magnitude to how much people said they identified with their Chinese cultural background, implying a sort of strength of meaning effect (Phillips *et al.*, 1993). In interpreting such a study, it is important to first recognize that we are dealing with something broader than placebo effects, as there were no inert interventions, and certainly something much more aptly described as a meaning response or sets of absorbed coping in a particular world.

To see why the concept of the placebo effect fails to accurately capture what happened here, and the much larger range of phenomena of meaningful physiology towards which this sort of example points us, we must appreciate that the placebo effect is purely an artifact of the epistemic bias imposed by biomedical thinking. Modern biomedicine operates within its own ethnomedical framework, defined by the prioritization of the body as an object, and thus favoring methods that operate to better

objectify the lived body separating it from the social sentient everyday coping of the person. The biomedical ontology views the body as a purely physical system, albeit complex. The scope of disease in biomedical ethnomedicine is describable in pathophysiologic terms. Treatments are generally pharmacologic, surgical, or behavioral interventions, all aimed at fixing breakdowns in a mechanical system. The unifying principle of this ethnomedical framework is, however, not theoretical but methodological.

While earlier we discussed biomedicine's rise to power by establishing the legitimacy of its scientific methodology, initially the push for acceptance of the scientific enterprise in medicine was based upon its ability to empirically produce results in the mid- to late twentieth century. Now, we can actually say that the method has become theoretical, in itself (Benner, 2005). The move towards evidence-based medicine is built entirely on randomized-controlled trials and the standardization of bias. What we avoided earlier, due to terminology confusion, was the way in which people must define placebo effects in terms of what they are not. We "know" that use of placebos, or the effects of placebos, are not understood as legitimate medicine insofar as they possess no efficacy or specificity. Thus biomedical treatments must have some sort of efficacy or specificity, and a corresponding rationale of use in terms of the pathophysiologic theory of the disease that doctors are treating.

The entire ethnomedical premise, however, from what constitutes a disease to what constitutes a legitimate intervention or treatment depends upon the methods used to create and define biomedical knowledge. Treatment is considered effective only insofar as its beneficial effects are measurable. I need to measure blood pressure or chemicals in the urine or view tissue biopsies under a microscope to know if a patient has improved.

The only reliable medical knowledge is that which comes from such verifiable measurement. Increasing reliance on diagnostic technologies maps the workings of the body in dizzying detail, from x-rays to microscopes to colonoscopies. These methods present more of the body's surface area and hidden depths to direct visualization and present them as measurable objects. Yet subjecting the body to these scientific methods of measurement has progressively turned it into an object, simultaneously defined and controlled by those who have the expertise to employ these methods, mainly medical professionals. Objective treatments can only work in a mechanical world of objects. Discerning activity then translates to finding the right tool for a job, say maybe the right size wrench or maybe even a new designer tool that fits one specific bolt even better.

Therapeutic efficacy in this ethnomedicine is linked to a precise definition of disease, which itself is dependent upon the nosological theories, diagnostic rationale, and associated technologies. Take, for example, a group of bone marrow cancers. In the early stages of medical knowledge about them, a certain treatment may have been shown to be effective in 40% of cases. If this group of cancers was then further subdivided into more specific diagnoses, it might be seen that this treatment may be much more effective in certain subcategories but less in others. More specific diagnoses require more sophisticated diagnostic capabilities. Thereby the treatment gains specificity as a function of the diagnostic tools that work to define the disease and the evaluation of medical interventions that effect cures for those specific conditions.

Our ethnomedicine is puzzled by the "placebo effect" even as it continues to measure it. By excluding the capacities for the body to move towards healing affordances, biomedicine seems to systematically exclude healing and focus on narrow definitions of

“curing”. Restricted to the concepts of specificity and efficacy, which are purely methodological constructs, it should be no surprise that the “placebo effect” remains entirely confusing within this rubric. As the RCT methodology rose to its prominent position as the epistemic gold standard, it solidified a particular understanding of the placebo effect, defined in opposition to legitimate medical treatments. A treatment is legitimate only insofar as it has some “specificity” and “efficacy”, two concepts defined and dependent upon RCT’s. And yet, the political legitimacy of the RCT apparatus, and with it the legitimacy of the biomedical paradigm, cannot operate without the notion of nonspecific, inefficacious placebos. For what reason is there to use a medicine that is no better than a placebo? In other words, biomedical practice depends upon the placebo effect for its claims to legitimacy and to know and utilize “real” medicine (Sullivan, 1993). Thus we discover a complementarity in the notion of what constitutes legitimacy in medicine. While “placebo effects” are generally considered illegitimate medicine precisely because they lack efficacy and specificity, “real” medical interventions are legitimate precisely because they are supposed to lack “placebo effects.” And yet we have seen that this idealization of eliminating healing affordances is impossible, for the body’s sentience is always present. What to do then?

Through our phenomenological arguments, we have come to see that the nature of these phenomena defies method-driven categorizations like activity and efficacy. Instead, in the phenomena, there is only one experience, one world, a world that is later parsed out by scientific study to sub-worlds that create such measurable variables and the data upon which biomedicine is founded. The placebo effect is, in its purest essence, just one variation of the broader range of phenomena that we live in our normal, everyday

coping with the world, whereby we are always responding in physiologic ways to the world around us. The push to create experimentally verifiable evidence for efficacy created an artifact that has been perpetuated in reified ways. Our ethnomedicine took the lived experience of dwelling in a world complete with meaningful situations and multiple affordances, responding to solicitations made upon us by the situations in which we find ourselves and obscured it behind a curtain of objectification and mechanistic visions of an object body. By abandoning the phenomena of the social sentient, lived body so close to our experience, biomedicine repackaged into a strange, and difficult to manage explanation. No wonder researchers have been endlessly confused! People interested in studying these phenomena have been unnecessarily restricted to the variables of efficacy and specificity. And yet these concepts have no life without the RCT methodology to define and measure them. Thus the methodology creates restrictive limits on what is knowable and describable. The struggle to define “placebo effects” within this practice-based ontology unnecessarily restricts our ability to work with them conceptually, and more importantly, make it difficult to understand how to utilize them in practice.

XIX. IMPLICATIONS FOR CLINICAL PRACTICE

I would like to conclude with a discussion geared towards the clinical implications of this sort of phenomenological analysis. Our analysis clearly shows how the push towards evidence-based medicine shapes the physician’s role into a less than healing ritual, based upon the promise and application of a commodified health care product idealized by cumulative evidence gathered from RCT’s. Diagnosis of disease

problematizes one's experience, and problems demand techniques to solve them (Marcel, 1951). Thus the push in medicine has largely become the push to "de-world" the patient, transforming experience through the lived body into an objective body fully perceptible from the third person perspective (Benner, 2005). Diagnosis and treatment become an act much like looking up tax values in actuary tables: find the sought value in one column, follow the row out, and find the computed answer. An idealized form of modern medicine seems like it would take such an actuarial form. Anyone can learn the perspectiveless skills of problem assessment and solution techniques, maybe even machines.

Sullivan keenly points out that the clinical trial is designed to isolate treatments based upon a specific relation between knowledge and therapeutic efficacy (Sullivan, 1993). This medical knowledge, by itself, however, remains powerless (Starr, 1982). Rather, it informs the design of therapies which can then be used for their beneficial effects. In this way, clinical trials can only test knowledge extrinsic to the clinical encounter (Sullivan, 1993). This effect is largely hailed as the great benefit of the controlled trial, and it is precisely this ideal of an elimination of bias that won biomedicine its fame. Certainly, it has generated a wealth of knowledge that has brought about the alleviation of much suffering. And yet, it is precisely this codification and reification of the objective stance toward an object body as the ideal clinical encounter that robs the clinical encounter of healing intrinsic to it, and largely prevents us from studying the operative role of things like beliefs, expectancies, relational qualities, and meanings present to both physician and patient.

Since clinical trials form the primary knowledge-generating device in modern medicine, we encounter problems when we search for ways to implement what was discussed prior in this paper in the clinical frame of day-to-day interactions between physicians and their patients. When taken as it is conventionally defined, any use of the placebo effect is quickly discounted as unethical. Since a placebo is defined in terms of the absence of any legitimate medical efficacy, its use in a clinical setting evokes charges of deception and paternalism. Yet, in most of my discussions with physicians, they almost unanimously agree that the “good doctor” must utilize the placebo effect. This suggests that it is widely accepted that *something* is going on, a learned and practiced skill that doctors learn to utilize, that is beyond the language of the biomedical paradigm. And yet, the politics of medicine are such that most physicians find it difficult, if not impossible, to articulate how they utilize this skill. To make matters worse, one cannot really publicly acknowledge any use of this effect for fear of incurring slander against one’s integrity as a physician. After all, the history of placebo effects reveals that it is clearly the domain of the charlatans who utilize quackery in their attempts to heal. Physicians are supposed to base their therapeutic decisions upon rational knowledge generated by RCT’s. Despite the widespread use of anecdotal knowledge, informally shared between practitioners, a therapy dispensed in this way is not supported by “the evidence” and is generally not considered a sound medical decision, as far as the courts are concerned.

The political stakes in our discussion are quite high. RCT’s define the biomedical ontology, beyond defining what is measurable, they define what is considered “really real” (Foucault, 1975; Scheper-Hughes, 2004). That is, they set actual limits on perception, and thereby define and bound a subscriber’s practice and expertise. As Foucault emphasizes,

scientific medical knowledge creates a world for medical professionals through micropractices, providing a sense of salience that focuses perception and guides what is noticed (Foucault, 1975). Here we see how the placebo effect, defined most clearly as a research tool, plays out in shaping the reality of the clinical encounter.

In order to make the most of this kind of phenomenological analysis, as medical professionals, we must approach clinical encounters with a deeper awareness of the degree to which a patient responds to that which surrounds them. Biomedicine in theory has no room for mystery or participation. It has laid out its tenets that all disease is in principle knowable and treatable. It is just a matter of discovering, cataloging, and developing. If we accept the ontology as defined by RCT's, the identities of practitioners could, in principle, be interchanged without any impact. After all, decisions of diagnosis and treatment are supposed to be rational calculations, capable of being made equally well by anyone versed in the accessible knowledge. Within the biomedical model, this knowledge is there for anyone to use. Healing is simply choosing the right technique to solve the problem, much like choosing the right tool to fix the broken machine.

And yet, phenomenologists argue that prior to this radical "functionalization" of the world is the way that "an organism lays down the terms of its vital problem." (Marcel, 1951; Merleau-Ponty, 1962). This perception of one's situation, the world in which someone lives, appears to be an incredibly strong determinant of the way that physiology operates. The techniques of biomedicine are powerless to access this level of experience, where perception and action unify. Instead, this level is only accessible through participation. The world of a patient can only be known insofar as the practitioner has a world, and pushes to participate in the world she and her patient share for a brief time.

The question which I have heard most often in discussing this topic with physicians is, “Well how do I use this in my clinical practice?” The answer is to abandon the concept of utilization! We are not dealing with a standardizable technique. In much the same way that earlier we argued that the meaning response is best understood as a learned, embodied skill that cannot be articulated in concepts, so can we argue that a practitioner’s role in healing cannot be constituted by concepts. This means that one cannot tell another *how* to be empathic and resonate with another’s world. Instead, it can only be learned by living it, by participating in it. As Gabriel Marcel reminds us, “The mysterious is not the unknowable.” (Marcel, 1949). Instead, it simply demands participation, and perhaps through participation can one come to facilitate the mysterious meaning response.

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