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Objective Science or Biased Philosophy:

Does Naturalism Play a Dogmatic

Role in Psychology?

Shannon Starks

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Master of Science

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## ABSTRACT

Objective Science or Biased Philosophy:  
Does Naturalism Play a Dogmatic  
Role in Psychology?

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Students and consumers of psychological science are routinely taught that the scientific approach used in psychological research facilitates its providing the most accurate information about human behavior. Because this approach to knowledge acquisition is supposed to be based on objective evidence and systematic reasoning rather than the biased interpretation of other approaches, these other approaches are often marginalized as being inferior. Critics of these claims assert that psychological science is subject to biases just as other approaches are and that the philosophy of naturalism not only pervades, but is also hidden and largely unquestioned in mainstream psychology. This study examines this claim, beginning with a dialectical contrast between naturalistic and non-naturalistic cultures to concretize practical features of naturalism and non-naturalism. It then uses those features to frame an in-depth analysis of introductory psychology textbooks where a compendium of the important settled principles and findings of all major sub-areas of the discipline should be found. Results show that naturalistic features are to be found throughout all the sub-areas of psychology and that non-naturalistic features are absent or marginalized in the texts.

Key Words: methodological naturalism, ontological naturalism, non-naturalism, philosophy, bias, dialectical approach, introductory psychology, Sir Edward Evans-Pritchard, Azande, purpose, lawfulness, supernatural, dualism, Western rationality.

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## Objective Science or Biased Philosophy:

### Does Naturalism Play a Dogmatic

#### Role in Psychology?

Authors of introductory psychology text books routinely instruct students on the importance of evaluating truth claims, asserting that “*the scientific approach*” is the way to find the most accurate and least biased information about human behavior (italics added, Myers, 2010, pp. 15; see also Kalat, 2011, pp. 29-36; Stanovich, 2007). Myers (2010) aims to show students how one particular approach to knowledge is superior to others, allowing people to “think smarter when describing and explaining the events of [their] lives” (p. 6). These authors present examples of the mistakes people make when relying on sources fraught with biases and untested assumptions, such as common sense and intuition (Myers, 2010, pp. 15-16). A leading psychological researcher claims that modern psychology is not aligned with biased sources such as intuition, ideologies, or dogmas because it “chose the path of science,” relying on knowledge grounded in “verification, evidence, and reasoning” (Ardila, 2007, p. 908).

Given that dogma is something psychologists hope to avoid, it is worth noting that the noted historian of psychology Thomas Leahey (1991), representing a number of observers of psychology, states that psychological science's "central dogma" is naturalism (p. 379). This would seem to contradict the “systematic and critical evaluation” supposed to characterize psychological science (Ardila, 2007, p. 909). Yet, some scholars contend that naturalism is not only the established guiding philosophy of modern psychological science, but that it is also largely taken for granted and accepted without critical evaluation in a discipline claiming to be neutral or unbiased in its investigations (e.g., Armstrong, 2011; Bishop, 2007; Plantinga, 2011; Slife & Reber, 2009; Slife & Whoolery, 2006; Willard, 2000).

If this assertion is true and a taken-for-granted philosophy guides the discipline of psychology, then the neutrality and unbiased status of psychological science's methods, theories, and findings are called into question, suggesting the need for a critical examination of the discipline's guiding assumptions. The current project affirms the need for such scrutiny and investigates whether or not naturalism is institutionalized as the "central dogma" of psychological science and is as unevaluated and taken for granted in the discipline as critics claim.

To investigate this claim, however, requires a full and concrete understanding of what the philosophy of naturalism is and what it entails, including its principal features. Unfortunately, the social science literature about naturalism both in and out of the discipline of psychology does not provide such a concrete understanding, but consists almost entirely of philosophical examinations (e.g., Bhaskar, 1978; De Caro & Macarthur, 2004; Forrest, 2000; Goetz & Taliaferro, 2008; Griffin, 2000; Law, 2012; Lincoln & Guba, 1986; Moser & Yandell, 2000; Packer, 2011; Plantinga, 2011; Praetorius, 2003; Willard, 2000). For example, Churchland (1992), Dennett (1989), and Searle (1994) argue that naturalism is a coherent basis for understanding human cognition and a suitable foundation for a human psychology. Richards and Bergin (2005), representing the other side of this debate, claim that naturalism's lawfulness forecloses options that would be otherwise available to therapists in understanding and helping their clients (see also Slife, Mitchell, & Whoolery, 2004). Hutcheon (1996) and Plantinga (2011) represent differing views on whether naturalism's neo-Darwinian theory is a sufficient basis from which to understand humanity. Scholars have also addressed philosophically how naturalism influences the psychology of religion (e.g., Nelson, 2009; Slife & Reber, 2009; Slife,

Reber, & Lefevor, 2012) and the implications naturalism has for the question of human agency (e.g., Goetz & Taliaferro, 2008; Slife & Gantt, 1999).

The literature referred to in the previous paragraph provides an abstract understanding of naturalism but does not reveal its practical and concrete features. In other words, the literature does not show how naturalism might be manifested if the claim of its being a “central dogma” were true. Though scholars make assertions about how naturalism affects the discipline of psychology, none (to my knowledge) has attempted a systematic examination of the discipline’s representative texts to see if naturalism undergirds the discipline as the central and taken-for-granted philosophy. If a case could be made that psychology’s theories, methods, and practices were guided by a taken-for-granted set of philosophical assumptions, then the findings and practices of psychology could not be considered neutral or unbiased, and the discipline would necessarily need to take those assumptions into account.

Before such critical scrutiny can take place, however, a preliminary investigation is needed. The first task of this project is to provide a concrete and specific description of naturalism so that its conceptual features may be clearly understood. The second task is to describe how one might recognize these practical and concrete features if they are in fact present in the discipline of psychology. As Slife and Whoolery (2006) note, the difficulty in investigating institutionalized and implied assumptions is that they go unnoticed even if they are in fact there (p. 630). Hence, this second task entails more than simply looking for evidence of naturalism. The next sections address these two tasks, describing naturalism and how one might recognize it in the discipline of psychology.



## Naturalism

In its most generic definition, naturalism means only that natural events, those that conform to the laws of nature as defined by natural science, are considered acceptable for the advancement of knowledge (Macarthur, 2010; Porpora, 2006; Slife & Reber, 2009). Scholars discriminate between many types of naturalism, but here I will consider only what are perhaps the two most popular: methodological and metaphysical naturalism. Methodological naturalism is the notion that the best approach to research is to focus on natural events in order to discover the laws of nature that govern them. Metaphysical (or ontological) naturalism holds that the world of possible things *consists* only of natural entities and events whose features and actions conform to the laws of nature (Forrest, 2000; Macarthur, 2010; Moser & Yandell, 2000).

The distinction between methodological and metaphysical naturalism may be held strongly or weakly. Bishop (2009), for example, argues for a strong distinction. He asserts that methodological naturalism is a commitment to provisionally answer limited types of questions with “no further worldview commitments” and that as such, it does not purport to adequately explain everything in the world naturalistically (Bishop, 2009). However, Slife and Reber (2009) argue for a weaker distinction: All methods require implicit assumptions, and a method for knowledge advancement limited to only natural events and processes implies that knowledge advancement does not require anything else (see also Porpora, 2006; Richards, 2001). In this sense, both methodological and metaphysical naturalists would go about scientific research as if lawful events and naturalistic methods were all that is needed for discovering all genuine knowledge about the world (De Caro & Macarthur, 2004; Slife & Reber, 2009).

Porpora (2006) notes an important restriction that stems from defining scientific research in this way: Any possible non-natural phenomena are automatically excluded from genuine

consideration. Since both methodological and metaphysical naturalism consider lawful events and naturalistic methods to be best for scientific research, both would exclude the study of phenomena that cannot be explained by natural laws. This means that both types of naturalism also must exclude from scientific study the possibility of any genuine relationships between natural and non-natural phenomena (see Goetz & Taliaferro, 2008, pp. 43-44; Richards, 2001).

The definition of *naturalism* I will use here assumes these exclusions and the weaker distinction between methodological and metaphysical naturalism. Advocates of both types of naturalists would conduct research based on the assumption that lawful events and naturalistic methods are superior to other approaches to knowledge advancement, and both would suppose that non-natural experiences and their possible relationships with natural phenomena should not be genuinely considered for scientific study.

### **Recognizing Features of Naturalism**

The conceptual description of naturalism above facilitates the next task necessary to the preliminary investigation—describing how one might recognize what may be taken-for-granted features of naturalism in the discipline of psychology. The method used in this second task is the dialectical contrast, long recognized as effective for this type of critical examination (Moss, 1998; Slife, Reber, & Richardson, 2009; Wiggins, 2011). The following example will hopefully help to explain how this process of dialectical contrast works. While a Texas accent is not likely to be noticed by Texans in Texas, when spoken in downtown Boston, its features become apparent as they are contrasted with the features of the accent common to Boston. Similarly, the features of a philosophy, or a way of viewing the world, are likely to go unnoticed among others of that same worldview but are likely to stand out in contrast to a philosophy or worldview of a different stripe. Thus, to employ a meaningful dialectic that effectively discerns the concrete

features of naturalism, this project requires a practical comparison between a naturalistic worldview and a non-naturalistic worldview.

Where might one find a non-naturalistic worldview to help bring into relief the concrete features of a naturalistic worldview? The Western world is notorious for its naturalism, and its disciplines are defined in naturalistic ways (Smith, 2003). While one might consider religions to be non-naturalistic, Smith (2003) and others note that in modern Western culture, even people's conceptions of God are suffused with naturalistic assumptions (see also Richards, 2001; Slife, Stevenson, & Wendt, 2010). If even the religious institutions of the West are naturalistic to some degree, it seems that a more thoroughly non-naturalistic worldview employable in this dialectical contrast might be found within a non-naturalistic culture outside the West.

A famous anthropological study of the Azande of north central Africa, who are renowned for their non-naturalistic culture, may serve the needs of this dialectical contrast. Sir Edward Evans-Pritchard's (1937/1976) study of this culture reveals his own naturalistic assumptions as he describes a lived non-naturalistic system (Slife, Starks, & Primosch, 2014). Where the two worldviews differ in important ways, hypotheses should emerge about some of the various features of naturalism, which I attempt to describe in the next section. However, to substantiate these hypotheses, I return in the succeeding section to the scholarly literature to see if what scholars say about naturalism's features and its presence in the discipline of psychology support the practical and concrete features suggested by the dialectical contrast. Thus, the Zande dialectical contrast clarifies practical features of naturalism that may be manifested in psychology as an uncritically held and authoritative central dogma. In addition, this preliminary analysis serves as an immersion in the situations and themes likely to be both implicitly and

explicitly connected to naturalism—in other words, it prepares the researcher and the reader to be more aware of naturalism as it may be manifested in abstract as well as practical terms.

### **Two Worldviews: Naturalism and the Non-Naturalistic Azande**

The dialectical contrast between the widely respected Western naturalist and researcher (see Beidelman, 1974, pp. 559-60), Evans-Pritchard (1937/1976), and the non-naturalistic Zande people he writes about reveals salient and concrete worldview differences that are not explicated in the chiefly philosophical literature about naturalism (Note that “Azande” and “Zande” are used respectively much as “Americans” and “American” are used in the United States). As Evans-Pritchard describes his experience living with the Azande, his own Western, naturalistic worldview becomes apparent when compared dialectically to the very different Zande worldview, which recognizes witchcraft as a practical part of daily life (Slife, et al., 2014).

**Context.** As this culture and contrast is likely to be unfamiliar to most readers, a discussion of the context of the interaction between Evans-Pritchard (1937/1976) and the Azande is in order (for a more detailed discussion of this interaction, the reader is invited to see Slife, et al. (2014). Evans-Pritchard was and is widely respected for his important contributions to virtually all areas of anthropology (Bowie, 2006; Just, 2012) and known for “studying culture from the actor’s point of view” (Burton, 1992, p. 140). His year-long study of the Azande is cited as exemplary in its sensitivity to the culture under investigation (Bowie, 2006), and indeed, Evans-Pritchard is open and candid, allowing the reader into his own thoughts about his interaction with this non-naturalistic culture. Rather than referring to his own culture as “naturalistic” when speaking of the familiar, he simply says “we” and “us” and “our way of thought,” reflecting an interest in culture over philosophy (Evans-Pritchard, 1937/1976, pp. 22-23, 25, 30-31). His sensitivity, openness, and cultural interest make Evans-Pritchard’s account

particularly useful for comparing and contrasting the two perspectives at a practical level, and I quote him extensively in explicating themes that exemplify the cultural differences in respect to the description of naturalism above. Not only does his account provide an appropriate contrast for the dialectical analysis, but it also provides an exercise in dialectical thinking in preparation for finding naturalistic and non-naturalistic features in other texts as well.

As cultural assumptions come to light in Evans-Pritchard's (1937/1976) account, the reader may find that his explanations for events are familiar. What may not be familiar or understandable is the Zande idea of witchcraft as a real cause of world events. According to Evans-Pritchard, "[T]here is no niche or corner of Zande culture into which [witchcraft] does not twist itself" (p. 18). He describes the way the non-naturalistic Azande understand a common event, the collapse of a granary, which serves as a storage area as well as a shelter from the sun. In the particular case discussed here, the granary has collapsed on people and injured them. In order to simplify the discussion of this event, I use a hypothetical person named Kisanga as the Zande whose loved ones were injured.

Recall that contrasting the features of these two worldviews is meant to generate hypotheses about what naturalism is by showing what it is not—for example, the difference between Evans-Pritchard and the Azande's understandings of witchcraft could generate the hypothesis that naturalism excludes witchcraft. If the hypotheses generated by the dialectical contrast are supported in the scholarly literature on naturalism, then the practical manifestations of the relevant assumptions become the features to look for in the principal investigation of this project—to see if naturalism is the unexamined central philosophy of psychology that critics have claimed. In addition, this examination of the concrete manifestations of these worldviews

should provide a fuller understanding of naturalism and how it may be manifested in other texts both implicitly and explicitly.

In this dialectical examination of Evans-Pritchard's (1937/1976) account, I have paid particular attention to interactions likely to reveal naturalistic themes as the above description of naturalism suggests. For example, non-naturalistic and naturalistic attributions of causation are likely to differ. Likewise, understanding of relationships, especially those that may exist between natural and non-natural events, may differ. From an analysis of the Evans-Pritchard's account, opposing assumptions have emerged, in turn generating hypotheses, about five distinct issues: purpose, lawfulness, the supernatural, dualism, and rationality.

**Purpose.** The first issue that becomes apparent when comparing the two worldviews is purpose. As a naturalist, Evans-Pritchard (1937/1976) finds no disagreement with the Zande understanding that termites eat the wooden supports of the granaries they build. However, the Zande understanding does not stop here because not all granary collapses have equal meaning. To a Zande, the world is fundamentally meaningful—that is, life's events do not simply happen according to mechanical laws, but have inherent purpose. If one's loved ones are sitting under the granary when it collapses, the purposiveness of this event can hardly be ignored. The person whose loved ones are harmed (I will use Kisanga as a hypothetical name), knows that termites eating wood does not explain the meaning of this unfortunate event. Evans-Pritchard (1937/1976) notes that purposeful or intentional meaning is *reasonable* to the Azande (pp. 18-32). From the non-naturalistic Zande perspective, there is a reason why the granary collapsed precisely when Kisanga's people were sitting under it, and Kisanga's implicit assumptions about the world tell him that a vengeful neighbor has used witchcraft to curse him.

In contrast, Evans-Pritchard's implicit assumptions about the world tell him (as would be the case with most Western thinkers) that the confluence of a collapsing granary and people sitting under it is simply a coincidence—that is, it really does not have a purpose. Evans-Pritchard (1937/1976) states, “We have no explanation of why the two chains of causation intersected at a certain time and in a certain place, for there is no interdependence between them” (p. 23). For Evans-Pritchard and the naturalistic worldview he represents in this dialectical contrast, the confluence itself is not explicable by natural means. Since non-natural explanations are not allowed in Evans-Pritchard world, the event of the confluence of the collapsing granary and people sitting under it, in Evans-Pritchard's words, does not have an “apparent cause” (p. 19).

Evans-Pritchard (1937/1976, pp. 22-25) points out that while a Western naturalist explains *how* events happen (mechanistically), a Zande also explains *why* (purposefully). Like naturalists, Azande attribute some events to “empirically ascertained” causes (p. 23), or things that can be observed. They see termites eating granary supports and know that sooner or later, the granary will collapse. Unlike Evans-Pritchard, however, Azande believe intentional causes are as real and valid as what a naturalist would call objective reality. From Kisanga's perspective, a witch's intent to harm his loved ones is not merely a subjective explanation grasped from his need for an answer and then applied to an event; it is a *purpose* inherent in the same confluence of events that a naturalist like Evans-Pritchard sees as a (purposeless) coincidence. The naturalistic account of this event leaves no room for purpose as a causal factor, because causation is assumed to follow a course set by natural laws that are unencumbered by genuine purpose.

Evans-Pritchard and the Azande's contrasting explanations for the confluence of events discussed above bring into relief one of the issues or assumptions upon which naturalists and non-naturalists may differ—that of purpose. The issue under consideration may be illustrated by

a question: Is purpose a legitimate explanation for world events? The non-naturalist, Kisanga, would clearly answer affirmatively, whereas the naturalist in this case clearly replies negatively. The hypothesis derived from this question and yet to be affirmed by the scholarly literature would be that naturalism excludes purpose from its explanations about the world.

**Lawfulness.** The second issue that emerges from this dialectical contrast is lawfulness. In a sense, all issues related to naturalism involve lawfulness, since the very definition of naturalism depends on natural laws. Recall how Evans-Pritchard (1937/1976) discusses the intersection of two “chains of causation,” each a part of the ordered world conforming to natural laws (p. 23-30). But for Kisanga, these laws would apparently not be enough to explain the granary collapsing on his loved ones because they do not address important particularities, such as genuine intentions, that do not conform to laws. Evans-Pritchard (1937/1976) reports that Azande attribute to witchcraft those “particular conditions” leading to injury that do not fit the regular patterns typical of natural happenings (p. 21). While Azande know the regular patterns typical of collapsing granaries and sheltering people (e.g., termites undermine granaries from time to time and people sit under granaries frequently to escape the heat), they would also demand an explanation for the *particularity* of this event: “[W]hy should these particular people be sitting under this particular granary at the particular moment when it collapsed” (p. 22)? Witchcraft addresses the particularity that does not conform to lawful, natural explanations.

In contrast, Evans-Pritchard’s (1937/1976) believes that real explanations lie in natural causation, or the natural laws that govern all the events that culminated in the collapse of the granary and the people sitting beneath it. The granary supports were eaten away by termites, and people were sitting under it because the day was hot and they thought it would be comfortable there. He considers these things to be predictable according to the general laws that govern the



natural world. He adds, “We have *no explanation*” for the coincidence (p. 22-23, italics added), which is the particular event that, at least to a Zande in this case, demands an explanation. Evans-Pritchard uses the terms “misfortune” and “unfortunate” for particularities that seem to have no lawful naturalistic explanation, indicating the particular importance of those events (pp. 18-19). Yet he offers no excuse for the lack of an explanation for what makes this event important, as if the particularity of the event does not count.

The differences between Zande and Evans-Pritchard’s (1937/1976) viewpoints generate the following question that naturalists and non-naturalists may answer differently: Do naturalists assume that because natural laws govern all events, only the regularities of events merit explanation? Though Kisanga may agree that lawful regularities are involved to some degree, in the case of the granary collapsing on his loved ones, he would surely say that the regularities of this event are not all that matter. Lawful regularities do not address the very particulars that make this event so important to him. On the other hand, it appears that Evans-Pritchard includes only lawful regularities in his explanation of this event and is not concerned about having no explanation for what Kisanga would consider in this case to be an important particularity. Evans-Pritchard can claim that only lawful regularities count because his naturalistic definition of “the events of the world” excludes particular co-incidents. The hypothesis generated from the difference on this issue can be stated as follows: Because naturalism assumes that natural laws govern all events, only the regularities of events ultimately merit explanation.

**The supernatural.** The third issue explored in this dialectical contrast is the status of the supernatural, which for this investigation differs from and is included within the designation of non-natural. While naturalism holds the validity of an explanation to be contingent on its adherence to natural laws, non-naturalism allows for explanations that do not adhere to natural

laws, such as genuine intentions. The supernatural refers specifically to the suspension or transcendence of natural laws, such as in the activities of witches, gods, and ghosts (see Nelson, 2009, p. 70).

The Azande would attribute the granary collapsing on Kisanga's loved ones to a witch's curse, clearly a supernatural phenomenon that fits the definition "attributed to some force beyond . . . the laws of nature" (Oxford, 2014). Evans-Pritchard (1937/1976) notes that the Western meaning of *supernatural* is very much the same as the meaning of *extraordinary*, but for Azande witchcraft is not extraordinary at all (p. 30), but rather a necessary condition for many of the events of daily life. In other words, there may be more than one cause responsible for an event, and often witchcraft is one without which the event could not have occurred. In fact, he says, witchcraft is a kind of "*natural* philosophy" that guides Zande responses to "unfortunate events" (pp. 18, italics added), and to them there is nothing miraculous or awe-inspiring about it. He adds that a Zande would be surprised *not* to come into daily contact with witchcraft (pp. 18-19). In other words, what a naturalist would call a "supernatural" event is, to a Zande, part and parcel of everyday life.

Contrasted with a Zande view of reality, Evans-Pritchard (1937/1976) manifests a naturalistic view, one likely to be familiar to the reader. He writes, "Witches, as the Azande conceive them, clearly cannot exist" (p. 18). He describes how he listened to Zande "naïve explanations of misfortunes, which, to our minds, have apparent causes" (p. 19) and "argued with Azande and criticized their statements" when they included witchcraft in their causal explanations (p. 20). For the practical purposes of Evans-Pritchard's study, the supernatural is rejected.

The question emerging from these differences follows: Is the supernatural a valid possibility, such as in understanding causation? Zande belief that witchcraft causes unfortunate events answers this question affirmatively, whereas Evans-Pritchard (1937/1976) would answer negatively. Surely something that “cannot exist” (p. 18) cannot be a necessary condition for something that does. The hypothesis for this issue, then, would be that naturalism rejects the supernatural.

**Dualism.** The fourth issue that emerges from the interaction between Evans-Pritchard (1937/1976) and the Azande involves dualism. What becomes apparent from Evans-Pritchard’s account is a particular variety of dualism involving the separation of subjectivity from objectivity. Evans-Pritchard refers to “natural causation” or “empirically ascertained facts” (p. 23) as “real causes” (p. 25). He differentiates these “real causes” from what he describes as ideas that Azande “feel out of their depth” to be the causes of misfortunes (p. 31). In other words, according to Evans-Pritchard, Azande derive what they believe to be true through feelings that are not limited to sensory observation. The “facts” and “real causes,” such as termites eating wood, he considers objective and valid, while ideas that Azande “feel,” such as a witch’s intent, he considers subjective and less valid. This separation is dualistic because it holds that two distinct versions of reality exist—the *objective*, valid order and the *subjective*, less-valid order.

Evans-Pritchard (1937/1976) reports that Azande do not have such a formal dual classification. He asserts that they are capable of explanations that include perceptions of empirical knowledge of cause and effect as clear as his own (pp. 25-32), such as the perception that granaries eventually collapse when termites eat the supports, but they also perceive things that are not considered to be “facts,” such as intentions or witchcraft. Evans-Pritchard reports that Azande “superimpose” (subjective) ideas to “fill in the gaps” where the (objective) “facts”

only partly explain events (pp. 23-25). Azande do not view their explanations as superimposing subjective ideas onto objective facts, because they have no formal preemptive distinction between subjective and objective. For example, the Zande have meanings for termites, and they also have meanings for witchcraft, both of which may be involved in the collapse of the granary. They are simply different parts of the meaning of what happens. In contrast, Evans-Pritchard believes “facts” belong to the objective order, while ideas that he considers to be interpretive in nature belong to the subjective order. And he seems sure enough of the objectivity of his own view that he sees no need to defend it (Slife, et al., 2014).

The following question represents the worldview differences noted in this discussion about dualism: Does naturalism assume a dual order of reality consisting of objective, valid phenomena and subjective, less valid phenomena? While Azande appear to take all experiences as candidates for valid knowledge, Evans-Pritchard (1937/1976) seems to have *preemptive* rules for assigning experiences to orders of validity—what is considered to be un-interpreted, or “the facts,” to the valid objective order, and what is considered to be interpreted to the less valid subjective order. The hypothesis derived from the dialectical contrast on the issue of dualism is the following: Naturalism categorizes experiences into the preemptive dual orders of *objective* and *subjective*, or uninterpreted and interpreted.

**Rationality.** A final issue that becomes apparent in the dialectical contrast between the non-naturalistic Azande and Evans-Pritchard’s (1937/1976) naturalism is rationality, or making logical sense of events of the world. Evans-Pritchard notes that a Zande does not have to explain the mystery of *how* a witch’s curse works to make the experience valid (p. 31). To a Zande, some things cannot be explained or predicted by a set of governing principles. Evans-Pritchard points out, however, that Azande do not believe every preposterous tale they hear and hold some claims

of causal influence to be completely inappropriate or groundless (p. 26). In other words, Kisanga is not without rational tools for discerning the real world—he simply has several tools, not all of which conform to the naturalistic version of rationality.

Still, Evans-Pritchard (1937/1976) seems to believe this naturalistic version is the only reasonable way to discern the world, and notes that it is missing from the culture of the Azande: “The Zande cannot analyse his doctrines as I have done for him” (p. 23). He explains how Azande deal with witchcraft practically by consulting professional witch-doctors (p.66). Because these witch-doctors do not explain their practices according to natural causation and laws of prediction, Evans-Pritchard automatically discredits their magic and admits using cunning to get them to “divulge their exact mode of trickery” (p. 70). He compares to this “trickery” the apparently rational, scientific understanding of Western medicine, such as an observable pathogen responsible for a symptom (p. 27). The rationality behind this latter understanding consists of observable elements of causal chains and the subsequent discovery of governing laws ascertained through natural scientific methods.

The difference between these two views can be illustrated by this question: Do all valid explanations fit Western understandings of rationality—in other words, do they cohere with predictive rational laws discovered through received methods? Zande belief in witchcraft clearly puts this non-naturalistic culture on the negative side of this question. Evans-Pritchard (1937/1976), on the other hand, seems to think that every explanation must cohere with the natural laws of causation and be discoverable by naturalistic methods—and only this type of rational explanation is accepted as valid knowledge. The fifth hypothesis might be stated as such: Naturalism holds that valid explanations follow the reason and methodology of Western science.

## Conclusion

The previous sections have described a practical interaction between the naturalist Evans-Pritchard (1937/1976) and the non-naturalistic culture of the Azande, allowing for the identification of some possible concrete differences between naturalism and non-naturalism. These differences have served to form a set of hypotheses postulating what may or may not be the more specific features of a naturalistic worldview. From the scholarly literature on naturalism, this project will review whether or not there is support for these hypotheses to find out how well Evans-Pritchard's worldview, in relation to the Azande, represents the specific and concrete features of naturalism. If these features are supported in the literature, they can then be used to frame a search for the unexamined disciplinary philosophy supposed to undergird psychological science.

### Features of Naturalism Illuminated

The previous dialectical contrast provided ground from which possible concrete features of naturalism not listed clearly in the literature could be derived. Since the Zande contrast illustrates practical and lived differences between naturalistic and non-naturalistic worldviews, the features that may emerge could be especially important to a practical and basic understanding of naturalism. Five hypotheses have emerged regarding these possible features: 1) Naturalism excludes purpose from its explanations about the world, 2) Naturalism assumes that only the regularities of events merit explanation, 3) Naturalism rejects the supernatural, 4) Naturalism preemptively categorizes experiences into the dual orders of *objective* and *subjective*, and 5) Naturalism holds that valid explanations follow the reason and methodology of Western science. These hypotheses propose five distinct features as important to a naturalistic worldview.

At this juncture, it may be important to distinguish between strong and weak naturalism, especially as the distinction appears in psychology. There are theoretical systems in psychology that embrace a milder brand of naturalism than that illustrated by the Azande contrast, including humanist, existentialist, and constructionist psychology (e.g., Gergen, 2009; Hunter, 1977; Rychlak, 2005). What these theories have in common is what is central to naturalism: rejection of the supernatural from all aspects of scholarly activities. However, psychological schools of thought vary considerably in their assumption of reductive features, such as reducing human intentions to lawful processes, reducing experience to the dual realms of objective and subjective, and reducing what is knowable to that which can be discovered following the Western rational tradition. While naturalism minimally requires rejection of the supernatural, it is possible for a discipline to embrace a weak naturalism that does not include all of the reductive features. Nevertheless, for the purposes of this investigation, all of the reductive features that have been illuminated by the Azande contrast are considered features of naturalism, and the opposing non-reductive features are considered non-naturalistic. The term “naturalism,” as used henceforth, will refer to not only a rejection of the supernatural, but also the reductive meanings of the other four features.

In this section, I clarify how these features differ philosophically from the non-naturalistic Azande worldview and attempt to discern whether reputable scholars who have formally analyzed the philosophy of naturalism support these hypotheses, thereby potentially affirming that these five concrete features exemplify and clarify a naturalistic worldview. If they are supported, then a plan can be discussed to detect these features and examine whether they are dogmatic in mainstream psychology.

## Exclusion of Purpose

The first hypothesis derived from the dialectical contrast is that naturalism excludes purpose from its explanations about the world. Recall the difference between the Zande and Evans-Pritchard's (1937/1976) modes of explanation: while Azande believe it is important to explain *why* as well as *how*, Evans-Pritchard's explanations are limited to *how* (pp. 22-25). Rychlak (1981) explains how naturalism has been historically committed to this limitation. Sir Francis Bacon, among others of the "new science" of the Enlightenment, felt that the proper study of nature involved sensory—or observable—matter and its interactive movement across time. Centuries earlier, Aristotle named this succession of events across time "efficient cause." Add "material cause," which refers to the matter that constitutes the objects being moved in the succession, and one has a mechanism, or a chain of mechanisms. These two causes together, efficient and material, constitute naturalism's favored explanation for *how* the world works (pp. 1-36). Philosophers of science assert that these naturalistic causal explanations must be empirically grounded—that is, based on sense-perceptible objects with efficient causal connections assumed to take place between events (Moser & Yandell, 2000; Willard, 2000), though these assumed causal connections themselves are not directly observed (see Slife & Williams, 1995, pp. 29-30).

But Aristotle also named other types of causes responsible for the things and events in the world (Rychlak, 1981, pp. 2-7). One of these types is intentional—or telic—cause, and it is exemplified in the underlying assumption of the non-naturalistic Azande that intentional meaning or purpose is important in understanding the world: The granary collapsing on Kisanga's loved ones can no more be fully understood without knowing the intended purpose of the witch who caused it than Kisanga's granary can be fully understood without knowing his



purpose in building it. Aristotle named this telic explanation “final cause,” a cause historically rejected by naturalists (Rychlak, 1981, pp. 9-11, 26; Robinson, 1995, pp. 150-160).

Other scholars confirm that naturalism rejects genuine intentional causes, or purpose, as meaningful entities for scientific knowledge (De Caro & Macarthur, 2004; Gantt & Williams, 2013; Goetz & Taliaferro, 2008, pp. 13-24; Rea, 2000). Goetz and Taliaferro (2008), for example, note that natural science’s methods do not allow mental states such as genuine intention to be used as explanations for behavior or cognition (pp. 84-85). From this naturalistic view, intention itself requires a lawful mechanistic explanation, so it cannot be genuinely purposeful. According to naturalist John Searle (1994), all mental states are “features of the brain,” which means that telic meanings are not fundamentally purposeful but merely higher levels of mechanistically understood neurophysiological states (p. 1). Since a naturalist cannot explain events by intentionality, telic meanings are considered to be projected *onto* events as subjective and less-than-credible interpretations (see Reber & Slife, in press).

As an illustration of how naturalism excludes genuinely intentional meaning, consider two causal chains interacting in such a way as to cause a calamity. Naturalism not only has no provision for, but also rejects the notion of explaining any purpose for the event. Just as Evans-Pritchard (1937/1976) has a non-explanation for the *why* of the particular granary collapsing with Kisanga’s particular family under it, naturalist Bertrand Russell has a similar non-explanation for the *why* of the cosmos: It is “just there, and that’s all” (Russell & Copleston, 1964, p. 175). These ideas from the scholarly literature support the hypothesis that naturalism excludes purpose from its explanations about the world.

### **Lawfulness: Only Regularities of Events Merit Explanation**

The second hypothesis can be stated as follows: Naturalism assumes that only the regularities of events merit explanation. Consider that from Kisanga's non-naturalistic perspective, laws thought to govern the regularities of the world do not account for the important "particular conditions" of an event leading to the injury of his loved ones (Evans-Pritchard, 1937/1976, p. 21). But it is virtually undisputed among philosophers, qualitative researchers, and psychologists that sciences grounded in naturalism are in search of the laws that govern regular events (e.g., Ardila, 2007; Lincoln & Guba, 2003; Ritchie, 2008; Smith, 2003; Willard, 2000; Wilson, 1978).

Naturalists attend to regular events because they can be tested by scientific method and accounted for by unchangeable and universal laws "that survive beyond time, space, culture, and the . . . researchers who discover them" (Ardila, 2007). Virtually every psychology methods text discusses the importance of replication in research, because repeated testing is supposed to be necessary to verify the truth of a claim (see Goodwin & Goodwin, 2013; Kazdin, 2003, p. 52; McBride, 2010, p. 39; Shaughnessy, Zechmeister, & Zechmeister, 2011). An *irregular* event that happens only once cannot be replicated and tested by traditional scientific methods and does not lend itself directly to the discovery of universal laws. Since singular events cannot be shown to fit lawful requirements, they are not part of naturalism's view of reality. Thus, the second hypothesis garnered from the interaction between the non-naturalistic Azande and the naturalist Evans-Pritchard (1937/1976) is supported by the literature. According to naturalism, only the regularities of events merit explanation.

## Rejection of the Supernatural

The third hypothesis derived from the dialectical contrast above is that naturalism rejects the supernatural. A world without the supernatural phenomenon of witchcraft would be unimaginable to Kisanga, whose daily life includes events that go against the regular patterns of nature. On the other hand, Evans-Pritchard (1937/1976) believes that Azande ideas about witchcraft cannot have any validity, even though he offers no evidence of any sort to support this belief (pp. 18-20).

This naturalistic rejection of the supernatural has historical roots leading once more to Sir Francis Bacon, who thought it foolish to try to derive the truths of nature through a theological (or supernatural) lens (Nelson, 2009, p.54). By definition, *supernatural* refers, for the naturalist, to a suspension of natural law by some non-natural agent (p. 70). Scholars maintain that naturalism does not acknowledge entities such as witches, ghosts, and gods that transcend natural laws (Nelson, 2009, pp. 183-194; Raley, 2005). The third hypothesis, then, is supported in the scholarly literature: Naturalism rejects the supernatural.

## Casting the World as Dualistic

The fourth hypothesis from this dialectical contrast concerns dualism: Naturalism has a preemptive rule for categorizing experiences into the dual orders of *objective* and *subjective*. In other words, some experiences are automatically considered to be valid and others to be questionable for explaining the world. A Zande is likely to consider his or her meaning of a witch's intentions to be as valid as his or her meaning of termites eating wood (Evans-Pritchard, 1937/1976, pp. 25-26). Evans-Pritchard, on the other hand, assigns these to *a priori* dual categories: seeing termites eating wood is objective and valid, but a person's idea that intentions are causal is interpreted and therefore subjective; it cannot be relied upon as a valid cause.

Reber and Slife (in press) assert that naturalistic science assumes the independence of the subjective and objective worlds, as evidenced by the continued drive to expunge any subjectivities from research practices in order to get at the most valid knowledge (e.g., Mitchell & Jolley, 2007, p. 4). They also note that what is considered to be objective is always considered to be superior with respect to knowledge advancement. In support of this claim, naturalist John Searle (2004) has argued that a dualistic tradition guides natural science in that the definitional practices of research cast all results from a third-person (objective) viewpoint (pp. 121-122). Researchers believe they should and can virtually free their methods from their own biases (subjective), indicating that they view the objective and subjective as independent of one another. Other scholars also point to the dualism of allowing only “objective” phenomena as explanatory for knowledge advancement, again indicating the belief that the objective and subjective can be separated (Goetz & Taliaferro, 2008, pp. 49-51).

One might describe this dual order as the real “objective” world and the fanciful “subjective” world. In these distinctions, scholars support this fourth hypothesis that naturalists preemptively assign experiences to distinct orders—one objective and valid, and the other subjective and not valid for knowledge advancement.

### **Casting as Valid Explanations Only Those Following Western Rationality**

Finally, consider the fifth hypothesis generated by the dialectical contrast: Naturalism holds that valid explanations follow the reason and methodology of Western science. Clearly the Azande do not explain witchcraft by following this kind of rationality, and Evans-Pritchard (1937/1976) automatically assumes “naïve” explanations and “trickery” (pp. 19 & 70) when confronted with their ideas. He assumes that events in the real world can be explained rationally by Western science.

Many scholars assert that naturalism holds causal knowledge of the real world to be discoverable by prescribed methods of inquiry that cohere with Western science's aim to predict and control events and the assumption that all nature is governed by laws (e.g., Ellis, 1990; Macarthur, 2010; Raley, 2005; Sklar, 2010). These rational methods are themselves carefully controlled and constituted by features, such as observability, replicability, and quantification, that preserve the lawful foundations of naturalism. For a naturalist, explanations of real phenomena must be grounded in governing rational laws, which instantiate in observable physical entities (see Moreland, 2000). That which cannot be made intelligible based on this idea is viewed as irrelevant or not real—in other words, naturalists exclude things that cannot be known by this standard and automatically marginalize information obtained using any alternate paradigm (Moreland, 2000; Reber & Slife, in press). Moreland (2000, p. 73) explains this naturalistic standard:

Any entities that are taken to exist should bear a relevant similarity to entities that characterize our best (or ideal) physical theories, their coming-to-be should be intelligible in light of the naturalist causal story, and they should be knowable by scientific means.

The arguments of these scholars of naturalism lend support to the fifth hypothesis: Naturalism holds that valid explanations follow the reason and methodology of Western science.

### **Conclusion**

While the practical and lived differences between Evans-Pritchard's (1937/1976) naturalism and the Azande's non-naturalism allowed clear hypotheses about naturalism to emerge, it was necessary to substantiate these hypotheses in the scholarly literature. This literature tends to be abstract and does not list its practical features, so that both are needed—the Azande encounter and the scholarly literature—to formulate the five hypotheses and provide a

list of naturalistic features to look for in this investigation: excluding purpose from causal explanations, casting only regular events as meriting explanation, rejection of the supernatural, casting the world as dualistic, and casting as valid explanations only those following Western rationality. If naturalism does have a dogmatic hold on the discipline of psychology as critics claim, these concrete features of naturalism should pervade psychology, often implicitly.

Conversely, non-naturalistic features may also be present in the discipline, and this investigation also includes a search for these opposing assumptions: including purpose as genuinely causal, considering truly singular events to merit explanation, accepting the supernatural as a valid possibility, no preemptive objective/subjective distinction, and considering explanations other than those following Western rationality to be valid possibilities. If naturalism is the unquestioned central philosophy of psychology, these non-naturalistic features should be marginalized in or absent from the discipline. In the next section, a plan is outlined to search for the features of both worldviews.

### **Method: Searching for an Implicit Philosophy**

This project examines whether the philosophy of naturalism is a central dogma of psychology. “Dogma” refers to principles “laid down by an authority as incontrovertibly true,” or in other words, indisputable beliefs (Oxford, 2014). Indisputable principles are not likely to be explicitly discussed or examined, but instead tend to be rather widely taken for granted and unreflectively assumed. For this investigation, then, it would not be enough to simply discover widespread features of naturalism explicit in the discipline. If naturalistic assumptions are established as authoritative and indisputable (dogmatic), they should in some sense be implicit throughout the discipline of psychology.

A search for an implicit philosophy across the entire discipline of psychology requires a representative and authoritative source of information. Since psychology is noted for being a fragmented discipline (Yanchar & Slife, 1997), no individual perspective or sub-discipline's literature is likely to represent the entire field. However, most received ideas from the sub-areas of psychology are presented in a formalized way in introductory texts. This is perhaps the only compendium of psychology's generally accepted ideas in which a broad picture of the entire discipline is presented, rather than only the specialized view typical of scholarly articles and other course texts. Because introductory psychology texts are intended to provide an overview of the entire discipline for entry-level psychology students, they should cover the settled findings and general practices from all the mainstream psychological specialty areas. If naturalism has a dogmatic hold on psychology, the features of naturalism should be implicit and pervasive in standard introductory texts, while the features of non-naturalism should be marginalized, if present at all.

### **Introductory Texts as Representative**

Introductory psychology texts are typically designed to satisfy department requirements and course objectives (see Altman, Ericksen, & Pena-Shaff, 2006), which logically would include what is widely recognized as settled knowledge from the discipline of psychology. In other words, the texts should be authoritative and represent the discipline. Any introductory text selection process would likely aim toward helping beginning students become familiar with the basic aspects of their discipline. Research shows that, despite differences in style, the basic content of most introductory psychology texts is similar (see Griggs & Marek, 2001; Lucas, et al., 2005). If naturalism is the central dogma of psychology, it should be manifested in the content of virtually every introductory psychology textbook used by accredited institutions.

To ensure that the textbooks used in this analysis meet these requirements, three characteristics are used to indicate their authoritativeness and representativeness. The first is wide use. If many psychology departments use an introductory text, it indicates that text is at least somewhat authoritative and representative of the discipline of psychology. The second characteristic concerns the institutions that adopt a text. If institutions ranked highly by widely recognized rating services use an introductory text, this also indicates that the text is authoritative and representative. The third characteristic is longevity. A text that continues to be adopted over many years and editions is also likely to be considered authoritative and representative. Therefore, the texts used in this project should have many editions. Although there may be other characteristics related to authoritativeness and representativeness, these three are salient indicators that the introductory psychology text is likely to contain the basic information current in the discipline of psychology as a whole.

The texts selected for this project originate from college adoption lists and a list of popular texts provided by textbook representatives from major publishers: Cengage, Norton, Pearson, and Worth. Three introductory psychology texts clearly meet all of these characteristics, indicating representativeness and authoritativeness. Other texts may meet some or even all of these characteristics to some degree, but these three texts were selected because they indisputably qualify, as discussed below.

Fewer texts are preferable to many for a dialectical analysis, allowing for in-depth and comprehensive scrutiny of the texts rather than a broader and thus thinner overview. Though some evidence of naturalism's features may be explicit, recall that many of naturalism's manifestations may be implicit or taken for granted, so that without in-depth analysis and



explication, they may not be discernable. Given the vast similarity among texts, the three selected texts should adequately represent other mainstream introductory psychology texts.

The first text identified as both representative and authoritative in the discipline of psychology is Gleitman, Gross, & Reisberg's (2007) 7<sup>th</sup> edition of *Psychology*. This text has been used for introductory psychology classes at both Stanford and UC Berkeley, whose psychology graduate programs are ranked respectively #1 and #2 by *U.S. News & World Report* (2013). Currently these schools use the 8<sup>th</sup> edition of this text, and Norton lists 80 institutions using this newest edition. As it is considered to be a relatively difficult introductory text, many other texts are more widely adopted across U.S. academic institutions in general. However, this text is used widely among the most highly ranked institutions because it is considered to be rigorous, comprehensive, and trusted in the discipline of psychology (M. Bell, personal communication, August 14, 2013). In addition to Stanford and Berkeley, the adoption list for this text includes Columbia University, New York, and Indiana University, Bloomington.

The second text identified is Zimbardo, Johnson, and McCann's (2009) 6<sup>th</sup> edition of *Psychology: Core Concepts*. This is Pearson's most highly adopted (247 institutions) introductory psychology text across the United States, and the list includes Stanford as well as other institutions listed in the *U.S. News & World Report* (2013) psychology graduate programs rankings (J. Bischoff, personal communication, February 28, 2013). Adopted at top institutions and widely used, this text is also likely to be both representative and authoritative in mainstream psychology.

The third text identified as meeting the needs of this study is Myers' (2010) 9<sup>th</sup> edition of *Psychology*, several versions (e-books, brief, etc.) of which are included in publisher best-seller lists (M. Ness, personal communication, November 18, 2012). Worth's adoption list for this text

includes UC Berkeley and 647 other institutions, many of them with psychology graduate programs listed in the *U.S. News & World Report* (2013) rankings (L. Hanrahan, personal communication, August 12, 2013). The number of schools using this text indicates the likelihood of its being considered both representative and authoritative in the discipline of psychology.

Each of the texts used in this project has many editions, and for each text used here, a more recent edition than the one used for this investigation has been published within the past three years. In many cases the latest editions of texts are not adopted immediately, so it is difficult to know their disciplinary acceptance. However, the longevity and acceptance of the editions selected for this study is well-established. The characteristics identifying these texts as authoritative and representative indicate that the texts are likely to provide a current broad overview of the settled findings and practices of the discipline of psychology. As such, a thorough examination of them should provide important information about the critics' claims that naturalism has a dogmatic hold on psychological science.

### **The Dialectical Approach**

The dialectical approach is the method for conducting this examination, because it suits the aim of this project—to explore whether naturalism is a presupposed central dogma undergirding the theory, research, and practice of psychological science. As noted previously, naturalism's manifestations may be implicit or explicit, and this dialectical analysis is designed to find implicit as well as explicit assumptions. The dialectical contrast has been used for the preliminary investigation described above, the Zande comparison, showing latent views that have become more apparent as compared to opposing views. As this dialectical approach will also be used in the principal investigation, its historical importance is worth noting.

Not only does the dialectical approach have a long history of intellectual endeavors to bring to light assumptions that may otherwise be taken for granted (see Slife, Reber, & Richardson, 2009), but today many educators believe it is central to critical thinking (e.g., Brookfield, 1987; Norris, 1985; Phelen & Garrison, 1994; Yanchar & Slife, 1997). One of the earliest recorded uses of the dialectical approach dates back to Socrates, who engaged intellectuals in pursuit of unexplicated assumptions through dialogues of contrasting views (Plato, 1997). His student Plato wrote in this dialectical manner, presenting in dialogues what readers could see as alternative perspectives. Galileo also employed the dialectical approach in his writing, his most famous work comparing the Copernican and Ptolemaic world systems (Moss & Wallace, 2003, p. 3). Philosopher Immanuel Kant employed dialectical reasoning in his theory of human thought, postulating that in thinking a thought, there is always the implication and possibility of the opposing thought. He believed that humans have an innate ability to think dialectically, and this ability was what allowed them to understand and compare alternatives (Rychlak, 1981, p. 526-8).

In a more modern application, Marx based his philosophy of human economics on dialectical materialism, employing the dialectical approach to provide alternative ideas to the mainstream political view (Haug, 2005). Carl Jung, a founding father of modern psychology, is also known for using dialectical reasoning in his theory. He notes that “there is no premise that mind takes on that cannot also be countered with an opposite position” (Rychlak, 1981, p. 293). Jung believed that real change in his clients could happen only by their recognizing these opposites, which was made possible through the dialectic approach (p. 246).

A current application of the dialectic is exemplified in a textbook series called *Taking Sides*, which illustrates the importance of the dialectic in critical thinking and presents

contrasting views of controversial issues. The series invites students to participate in dialectical scrutiny by critically analyzing opposing viewpoints and examining theoretical allegiances and assumptions that may be implicit (Slife, 2013, pp. xxi-xxix).

### **Analysis**

The dialectical analysis used in the principle investigation for this project builds on the preliminary investigation above. The features of naturalism and their opposing features of non-naturalism derived using this approach have become the nomenclature for categorizing passages extracted from the representative introductory psychology texts. These passages make up the set of data for this analysis, in which they are examined to see whether or not their meanings support the idea that naturalism is dogmatic in mainstream psychology.

### **Implicitness, Marginalization, and Pervasiveness**

**Implicitness.** A feature was considered to be implicit if its assumption was not explicated (e.g., the author did not expressly and directly discuss the assumption). An omission would indicate that an assumption was taken for granted, because otherwise an explanation would have been provided. For example, an author might explain a person's romantic attraction solely in terms of the interaction of biological and environmental influences. The author may not state explicitly that natural laws *govern* this romantic attraction or that a person governed by these laws, given the same biological and environmental influences, has no options. This view is lacking in genuine purpose, since the person who experiences the attraction is not thought to be free to choose otherwise. Here, the assumption of excluding purpose would be designated as implicit, because this idea is not explicated. Conversely, if the author were to openly state that a person's romantic attraction is governed by natural laws and that the person's apparent choice is only an illusion, then the assumption of excluding purpose would be considered explicit.

Additionally, if a text included a feature of naturalism but did not attempt to justify its assumption, it would be considered implicit. Lack of justification indicates that an idea needs none—the authors may take it for granted that virtually everyone already believes the idea. It also indicates that the assumption may be held largely without examination. For example, a text might explain that the set of procedures known as the scientific method allows for verification of truth claims about the world, while other ways of obtaining information are subject to interpretation and are more subjective. If the authors were to fail to justify the assumption that truth claims can be verified as uninterpreted and objective, then the objective order would be implied, and the assumption of objective/subjective dualism would be considered implicit and unexamined. On the other hand, if the assumption were up for scrutiny, the authors should explain why they assume that the objective truth is separable and distinct from subjective information.

**Marginalization.** If naturalism undergirds psychology in a dogmatic way, non-naturalistic features are likely to be absent or marginalized. A feature was considered marginalized if the author's message was an active putting-down of non-naturalistic approaches or ideas, or if it was mentioned but then thoroughly eclipsed by a competing idea. For example, if a text mentioned the idea of the existence of God but then rejected the possibility that acts of God could be valid necessary conditions for real phenomena, then this non-naturalistic feature would be considered marginalized. If, on the other hand, non-naturalistic features were given consideration as valid assumptions, there would be no case for marginalization.

**Pervasiveness.** If virtually all of the main ideas across all the major sub-areas of psychology in the texts were consistent with and could be clearly understood in terms of naturalistic assumptions that thoroughly eclipsed any meaning of non-naturalistic features, this

would be a strong indication that naturalism is pervasive. Conversely, if many of the main ideas were consistent with and could be understood in terms of non-naturalistic assumptions, the claim of pervasive naturalism would not be justified. The passages selected for this analysis are intended to represent all of the main ideas in the texts, and I have attempted to specifically report and address the meanings of any naturalistic or non-naturalistic ideas found.

### **Description of the Meanings Identified**

The pilot study and perusal of the philosophical literature on naturalism were helpful in understanding the meanings of naturalistic and non-naturalistic themes in preparation for examining the previously indicated introductory texts and extracting relevant passages. In addition, these investigations facilitated awareness of the types of ideas and terms likely to be associated with naturalistic or non-naturalistic themes. These ideas guided my search for manifestations of naturalism and non-naturalism in the texts. While their meanings overlap to some extent, there are meanings distinct to each of the five issues derived from the preliminary investigation. These identifying ideas can be used dialectically where their meanings have contrasting implications that clarify one another, just as the contrasting meanings in the preliminary investigation clarify one another. In other words, an idea that identifies naturalism may also be an idea that identifies non-naturalism, and vice versa. Note that the meanings discussed in this section do not constitute an exhaustive list, but describe the kinds of meanings identified in the texts based on the findings of the preliminary investigation.

**Purpose.** Recall that naturalism assumes that purpose or intent is not causal, but rather is itself caused by chains of past events, whereas non-naturalism may assume that purpose is the fundamental reason behind an event. For this issue, past-event explanations (including biological events) for behaviors and feelings would be cues for the possibility of implicit naturalism.

Additionally, where a meaning such as purpose or intention was used in the text, I would pay particular attention to implications found in the context. For example, if an author were to speak of intention as a behavioral factor but then explain intention itself as a lawfully caused biological or environmental event, this would be a naturalistic idea. If, on the other hand, biology and environment were viewed as limiting and necessary but insufficient causes, and intentions were viewed as a genuinely choice-based cause of behaviors and thoughts, this would be a non-naturalistic view.

**Lawfulness.** Naturalism assumes that events are replicable and predictable because they follow governing naturalistic laws; hence, singular events do not merit explanation. For a non-naturalist, however, the singular and unreplicable meaning of an event may be the very key to understanding it. For the issue of lawfulness, then, identifying ideas would be generality, prediction, and replication. If an individual case study were discussed only in terms of how the findings of the case could be generalized to a population and used to generate predictions, this would indicate the naturalistic idea that ungeneralizable singularities are considered to be less valid for knowledge advancement. Conversely, singularity or particularity would be cues for a non-naturalistic view of this issue. If the uniqueness of an ungeneralizable and unreplicable event were to be emphasized and examined as important to psychological science in and of itself, this would fit a non-naturalistic worldview.

**Supernatural.** For this issue, the very absence of supernatural themes in the texts would indicate naturalism. Any mention of supernatural entities, such as prophets, palm readers, or God, would be a cue for close examination of the context. In addition, ideas that have traditionally been associated with the supernatural, such as the meaning of dreams, would be cues to scrutinize the text. Excluding or marginalizing these entities or supernatural meanings would

indicate naturalism, while considering them to be real possibilities and genuinely causal would indicate non-naturalism.

**Dualism.** Naturalism assumes information can and should be freed from biases and interpretations so that objective facts can be discovered—in other words, objectivity and subjectivity can be separated. On the other hand, a non-naturalistic view would blur or not even make the distinction between objectivity and subjectivity and hold biases as necessary and integral to all information. Identifying meanings for a naturalistic view of this issue would include sharp distinctions between facts and beliefs, emphasis on observable phenomena in research, and considering certain types of knowledge to be exclusively objective. Another meaning of note would be types of information considered to be or not to be valid evidence. If certain types of information were exclusively considered suitable for scientific study, it would indicate naturalistic dualism. Non-naturalistic ideas might be related to spirituality, intuition, and values. If all knowledge, including beliefs and observations, were considered to be interpreted or generally value-laden, this would indicate an alternative non-naturalistic ordering of the world.

**Rationality.** The issue of rationality refers to the way people make sense of the events of the world. Some scholars suggest that a naturalist would approach this task in line with the technical rationality tradition, using carefully controlled methods with an eye toward discovering the governing rational laws that facilitate prediction and control (Dunne, 2005; see also Slife, Johnson, & Jennings, in press). A contrasting non-natural approach in line with the practical rationality tradition might use means that are not completely predefined to discover ends that may or may not be predictable. For this issue, themes such as an emphasis on prediction and carefully controlled methods would suggest the possibility of implicit naturalism. Additionally, marginalizing information obtained using any alternate conception would imply naturalistic, or



Western, rationality. A non-naturalistic cue for rationality, on the other hand, would be the recognition of other ways of understanding as valid alternate possibilities. For example, if the methods, data, and interpretations of certain qualitative studies were considered to be valid for explaining events, it would indicate non-naturalism.

**Conclusion.** These descriptions provided guidelines for the principle analysis of this project: finding naturalism or non-naturalism in psychology introductory texts. They also allowed for differentiation of features and their meanings, showing the relationships between them as the texts were analyzed.

### **Reading and Analyzing the Texts**

While analysis began with reading the texts, it did not proceed according to a pre-defined step-by-step process. There was much overlap, jumping back and forth between reading, re-reading, reviewing, and analyzing, and new questions arose during these activities. The heading, “Analysis of the Data”, refers specifically to the analysis that took place after extracting and summarizing were finalized. These processes will be described later, but here it is important to note that analysis and reflection on the preliminary investigation features as well as the text material was ongoing. The extraction process itself was ongoing through several reviews until it appeared that no further changes were needed. It should also be noted that the method of extracting and summarizing evolved as the project advanced. The evolution of the analysis was important to the results of this project in that ideas and questions that developed later may never have become apparent in an attempt to derive all meanings and connections during the initial extraction process.

**Extracting the data.** I began by reading the selected texts from cover to cover, each chapter in the order given. The term “extracting” refers here not to the process of extracting

objective material from its context, but rather the process of selecting those passages of text that seem relevant to the meanings of the features of naturalism and non-naturalism. Beginning with Myers (2010) and ending with Zimbardo, et al. (2009), I examined the texts one at a time with the idea of trying to understand them as cohesive wholes in relation to the extracted passages that would become the data for this project. In addition to pausing for reflection several times during each chapter, I reviewed the dialectical features from time to time in order to better understand what the authors meant in regards to naturalism. In one sense, what they did not say was as important as what they did say, and the dialectical review helped to keep this idea in view.

In examining the texts, I read each section thoroughly except the portions that seemed unlikely to shed any new light on the question of whether or not naturalism is dogmatic in psychology. At these points I would anticipate where the text was headed, such as toward a discussion of technical details I already understood and that would not contain further support for either side of the naturalism issue. For example, Myers (2010) explains how specific areas of the brain are associated with moods and sensations (pp. 65-73), an idea that may be important to the question of naturalism as a central dogma. However, nothing is added to the argument by describing the sections of the primary sensory cortex and corresponding body areas, so I would skim this part. In another example, I surmised that the details of a neuron's sodium/potassium pump are not likely to add any new naturalistic or non-naturalistic assertions to the idea that pain is caused by the activity of neurotransmitters in the brain (pp. 50-51).

As I read the texts, I extracted and transcribed passages that exemplified naturalistic or non-naturalistic features according to the dialectical meanings that emerged from the preliminary investigation. Where there were several repetitions of the same idea in close proximity, I grouped them or used only one representative passage. Some sections as long as six pages contained only

one clear passage referring to naturalistic or non-naturalistic ideas, and some sections did not contain any such passages. In the latter case what was not said might be an important consideration. The data were not coded, but I made notes about the passages' relationship to naturalism, sometimes labeling them with specific features. As the research progressed, it became apparent that all of the major ideas of a section of a text should be represented in the data. Hence, the criteria for selecting passages changed from simply exemplifying a feature to being a clear and consistent example of the naturalistic or non-naturalistic themes from the current section of text. While I searched the texts for these features, I also extracted passages in which there seemed to be marginalization of a feature. Finally, it became apparent that a new designation would be needed for sections in which the text was ambiguous in regards to naturalistic features.

**Addressing ambiguity.** It was apparent before the data collection that marginalization, implicitness, and pervasiveness were important to the analysis (see section above, Implicitness, Marginalization, and Pervasiveness), but during the extraction process it became apparent that ambiguity was also important. In order to address the meanings that were unclear or contradictory, I added the designation of ambiguity to the analysis. For example, where a text mentioned the resilience of the “human spirit,” there was no indication of the actual meaning of the phrase (Zimbardo, et al., 2009, p. 288). Other parts of the text discussed motivation and resilience, but the phrase in question was not explicated anywhere in the book. I would label this passage ambiguous in reference to the naturalistic feature of purpose, because it hinted at genuine intention without discussing it.

Understanding the meanings in one section of text often depended on understanding the meanings in other sections, and many puzzle pieces had to be put together in order to venture an

opinion as to the authors' meanings. If they mentioned personal responsibility while at the same time explaining behavior as lawful, it would be unclear whether they meant that genuine intentions were involved or that people are responsible even without genuine agency. This, too, would be labeled ambiguous. These ambiguities are described in Analysis 3.

**Reviewing the data.** Two undergraduate Research Assistants (RAs) helped with the first review of the extracted data. These students already had some experience with recognizing and examining implicit assumptions because they were enrolled in a class specifically designed to teach this type of critical examination. I familiarized them with the study and the five issues, and we spent several sessions together categorizing passages of text under the appropriate issues and discussing the rationales for categorizations.

In order to reduce the volume of data to a manageable level, the decision was made to select one representative passage of text, or if necessary several snippets, from each main idea in each chapter. The ideas in the reduced set of data should represent, at least in some sense, all of the main ideas in the textbooks in the ways that they were related to naturalism or non-naturalism. It made more sense, then, to keep the data grouped by chapter rather than to group by feature, which I had previously been doing. Instead of discarding much of the extracted data, we retained it and highlighted the selected representative passages. In subsequent reviews, it proved to be valuable to have the rest of the data near at hand for scrutiny. To ensure that we all understood the task, the research team spent an hour-long session together examining the main points of a chapter and selecting the passages within the major sections that best represented the naturalistic or non-naturalistic themes found there.

When it was apparent that the RAs were competent to select appropriate passages and categorize them according to the appropriate issues, providing brief rationales for the selection

and categorization, they were assigned one-half each of the extracted data from the Myers (2010) text, while I worked on the data from the other two texts. We began to work alone, reviewing as needed relevant sections from the pilot study to keep our thinking in line with the issues. As we worked, we frequently returned to the texts themselves, viewing the context from which passages of text were extracted in order to understand how the data reflected a section and chapter. I spot-checked the RAs' work and communicated with them online during each week of their work to make sure the passages they selected were in line with the naturalistic themes in the appropriate sections.

We also met five times during the course of this part of the review to discuss problems and new understandings and to reflect on our work in relation to the texts as whole units and how our work was relating to the purpose of the study. One of the issues we confronted was that some of the data I had extracted did not clearly concern naturalistic or non-naturalism. Others were not representative of a whole section. In such cases we needed to peruse the text again to find another passage that would better represent that section. In some cases these were found, and in others, neither naturalistic nor non-naturalistic passages were clear. This did not mean the section was not based on naturalistic assumptions, because naturalistic ideas were virtually always implicit (e.g., supernatural ideas were always excluded). Only the naturalism of the surrounding material and the absence of specific non-naturalistic ideas could be used to support the idea of implicit naturalism. In these cases, we made notes to indicate this.

When this part of the analysis was completed, we again met to spot-check each other's work to maintain quality control. We began this spot-check together by selecting two passages from each text and comparing it to the context. As it became apparent that everyone understood the purpose and seemed competent to work alone, we worked separately, and our total spot-

checking time took only a few hours. After this spot-check, I reviewed the data again, and this turned out to be a major project of two weeks or more. During this review, it became apparent to me that some of the passages were still not clear in regards to their naturalistic meanings, and the context of the passages needed further review.

In addition, the passages that were labeled ambiguous or marginalized needed review. I found that many of those previously designated ambiguous were only ambiguous in abstraction—in other words, when taken out of the context of the complete text. Through consulting meanings from other sections of the text, the ambiguity dissolved for many of the passages. I found a similar situation with the passages I had labeled marginalized, all of which referred to the non-naturalistic feature of accepting the supernatural. While some passages clearly marginalized the supernatural by actively putting down or eclipsing the idea, others merely excluded the supernatural in a place where a non-naturalist might well include it. Those passages that merely excluded the supernatural were removed from the marginalization category.

**Summarizing the data.** With nearly 90 pages of extracted and reviewed data and notes, a summary of each text by feature was needed to facilitate analysis. The first summary consisted of reducing the representative passage and its meaning for each section to one or two brief sentences. When the data seemed to resist summarizing, I returned to the text to make sure the meaning was consistent, and even at this point I made some changes in passages selected to represent subsections. During this summary I also reorganized some of the data so that in certain places several subsections were consolidated and represented by a single passage. These consolidated sections either contained redundant ideas or did not contain any clear ideas on naturalism or non-naturalism. Because the authors formatted their chapters differently, the texts had a wide range of numbers of subsections. This consolidation helped to narrow the range as

well as reduce redundancy. This summary made possible a better understanding of the important ideas of each text.

A synthesis was needed to get a broad overview of the data. I cut the paper summaries for each text so that there was one strip for each passage of text representing a subsection. Then I organized these strips according to feature and reviewed each feature for redundant ideas that could be summarized. The product was a list of brief points for each dialectical issue as well as a list of ambiguous ideas and another for marginalization. This summary allowed for organization and further comparisons and elicited another possibly important question for consideration: How might a beginning psychology student respond to the major points in this summary in comparison to my responses as a graduate student searching for implicit assumptions? This concern is addressed in the discussion section.

**Researcher assumptions.** It is important to note that as with any research, the methods, analyses, and results of this project are inherently biased and interpreted. Exposure to qualitative research methods has influenced my approach to research and my intent to focus on meanings rather than numbers. Having studied naturalism and its features for some time before beginning the project, I expected to find naturalistic features in the introductory texts. It was impossible to separate myself from this or any other preconceptions, but I attended to these preconceptions as the project unfolded so that it would be possible for them to be ruptured. I tried to reflect on them, particularly as I reviewed ambiguous data, to see if these biases were preventing me from seeing something important.

To help with this experience, I tried to incorporate into my analysis ideas taken from Slife, Johnson, and Jennings (in press), in which the idea of surprisability or radical openness is developed as a means for addressing one's biases. This idea includes the practical components of

awareness of one's own assumptions, softening of those assumptions, considering alternatives, and paying attention to particularity. As a brief summary, I first became aware of clear distinctions between naturalism and non-naturalism, as I described, through my sojourn through the interactions between Evans-Pritchard and the Azande. Second, I softened my investment in my own view of the meaning of a passage of text by recognizing that no interpretation is final. Even after careful consideration of the data, the results presented in this project are subject to various interpretations. Third, I was able to consider alternative views in part by listening carefully to research assistants who suggested different interpretations of the meanings of some passages, and also by considering my own very different views of naturalism previous to my beginning this project. Finally, I attempted to particularize the meanings studied by careful consideration of the context for each passage. These practices allowed me to more fairly analyze the data.

### **Analyzing the Data**

The principle concern of this project is whether or not naturalism pervades mainstream psychology in a dogmatic way. Analysis 1 will attempt to answer this question by describing meanings manifested in passages of text whose ideas represent all of the important points related to naturalism or non-naturalism in the introductory psychology texts used in this project. As described in the method section above, each passage was extracted as it related to these five issues regarding naturalism and non-naturalism: purpose, lawfulness, the supernatural, dualism, and rationality. A representative passage was selected for each section of text and categorized by the feature of naturalism or non-naturalism that best fit the meanings of the passages. Analysis 1 will examine the relevant passages in terms of the meanings of the associated features. The idea



of implicitness, important to establishing the claim of dogmatism, is connected with these meanings and included in the descriptions of the meanings of the passages of text.

Analysis 2 concerns whether or not features of non-naturalism are marginalized in the texts. Recall that if naturalism is dogmatic in psychology, non-naturalistic features are likely to be absent or marginalized in the introductory texts. As previously discussed, marginalization does not merely refer to omission of features, which would be included in Analysis 1. Rather, marginalization is an active putting down or eclipsing of a feature. It seemed best to address this in a separate analysis to show its particular manifestations. Analysis 2 will examine the meanings of the passages of text that meet either or both of the criteria for marginalization.

Analysis 3 concerns ambiguity. As previously mentioned, some of the passages of text were unclear regarding certain features of naturalism. In other words, the meaning in a passage might not be explained anywhere in the text, or the meaning might not cohere with the meanings in the text as a whole. During the initial extraction process, many passages were labeled ambiguous, but subsequent reviews of the text clarified their meanings and eliminated them from this category. Even after several reviews, some passages remained unclear. Analysis 3 will examine the meanings of ambiguities found in these passages and compare them to the meanings of other passages in the texts.

Analysis 4 will show where in the text the more clear meanings of features were found and the sub-areas of psychology that correspond to the chapters where the passages were found (see tables 1-4, appendix). Recall that finding naturalism across all of the major sub-areas of psychology would indicate pervasiveness. I made four tables, one for each text and another for a synthesis of all of the texts, with features for row headings and sub-areas of psychology for column headings. There are many possible ways to divide psychology into sub-areas, but I chose

the following designations in order to facilitate this overview, so as to avoid its being too cumbersome: method/statistics, biopsychology/neuroscience, learning/memory, developmental, personality, social, experimental, and psychopathology/treatment. Because of the varied ways authors integrate sub-areas within chapters, I chose to use experimental as a broad category to include topics related to experimental psychology: intelligence, health, motivation, emotions, sensation, perception, thinking, cognition, language, and consciousness.

In summary, Analysis 1 will examine the meanings of the extracted passages of text to answer the question of whether or not naturalism pervades the introductory texts in a dogmatic way. Analysis 2 will support this by describing how non-naturalistic features are marginalized in some passages of text. Analysis 3 will describe the possible meanings of ambiguities concerning naturalistic features found in some passages. Finally, Analysis 4 will provide an overview of where in the texts and in which sub-areas of psychology the more explicit passages reflecting naturalistic meanings are found.

## **Results**

### **Analysis 1**

As a reminder, this analysis will relate and contrast the meanings of the selected passages representing all of the important points in the texts in terms of naturalistic and non-naturalistic features in order to show whether or not naturalism pervades mainstream psychology in a dogmatic way. Recall the five features that would indicate a non-naturalistic presence in the discipline: genuine purpose as causal, truly singular events as meriting explanation, accepting the supernatural as a valid possibility, no preemptive objective/subjective distinction, and explanations other than those following Western rationality as valid possibilities. A perusal of all chapters in all three texts for passages containing these non-naturalistic as well as naturalistic

meanings (see Methods, above) should show whether or not clear meanings of naturalistic features are present in the texts.

First, after an exhaustive, careful, and overlapping reading of the three texts by three investigators, the results will attempt to show that no passage of text was found with an unambiguous meaning of any of the five *non-naturalistic* features. The term “unambiguous” here refers not only to explicitness of the meanings of these non-naturalistic features, but also to whether a researcher who has studied these meanings is able to recognize them as distinct features and whether the meanings of the features are supported by the broader context of the text. As will be described later in Analysis 3, ambiguities regarding naturalism and non-naturalism were found in some passages, but no unambiguous meanings of non-naturalistic features.

An example from Gleitman, et al. (2007) illustrates how some statements may be interpreted as non-naturalistic regarding genuine purpose, but may also be interpreted as naturalistic: “We like to see ourselves as exerting control over our lives, and of course we often do” (p. 475). It is unclear whether “we often do” refers to genuine purposive control or merely how “we like to see ourselves”—as having genuine purposive control. Analysis 3 will include a thorough description of ambiguous passages like this one. On the other hand, the passages used here in Analysis 1 more clearly show the authors’ intent. For example, when Myers (2010) says, “Genes mostly determine why one person today is heavier than another” (p. 462), it is fairly clear that he is attributing the cause of increased weight mainly to genetic factors.

Second, these more clear passages that will be described in Analysis 1 were selected to represent all the important points in all three texts as they relate to all five of the issues regarding naturalism. This section is organized according to the naturalistic features, each presented in turn

with relevant passages of text in its own section: Excluding purpose from causal explanation, Lawfulness, Rejection of the supernatural, Casting the world as dualistic, and Casting as valid explanations only those following Western rationality. Sections for each feature are further organized by subheadings showing the main ideas in the meanings of these passages within the feature sections. To show how naturalism is dogmatic in relation to each of these features, implicitness is also addressed. Implicitness involves no direct expression of assumptions or no attempt to justify them, indicating the belief that no justification is needed.

**Excluding purpose from causal explanations.** Purpose refers to intention in which there is the genuine possibility to do otherwise; rather than natural law, intention ultimately at least partly determines outcomes. Naturalism excludes genuine purpose from its causal accounts of all events, holding instead that intention is itself caused by chains of events governed by natural laws.

The following quote illustrates how the issue of purpose is manifested in the introductory texts as it discusses “the two-track mind,” which refers to parallel consciousness and unconscious functioning. Myers (2010) cites researchers who predicted from brain scans what participants did before they knew their own intentions, and asks, “Is the brain ahead of the mind” (p. 88)? Without directly stating such, the author implies that when people think they genuinely intend to act, they are in fact under the control of the laws of nature:

This big idea--that much of our everyday thinking, feeling, and acting operates outside our conscious awareness—is a difficult one for people to accept,' report New York University psychologists John Bargh and Tanya Chartrand (1999). We are understandably biased to believe that our own intentions and deliberate choices rule our

lives. But in the mind's downstairs, there is much, much more to being human (Myers, 2010, p. 88).

The “much, much more” of this statement refers to law-governed mechanisms. Mechanical metaphors, such as the computer model Myers uses to describe mental functioning (pp. 328-329), support the idea that what is thought to be genuine intention is an illusion (pp. (see also p. 80). People who see genuine intention as at least a necessary condition for and expect to have real choices about their own behavior would include purpose as a causal force in the real account of human experience. The exclusion of purpose from psychology’s wide range of perspectives (pp. 8-10; see also Gleitman, et al., 2007, p. 7), then, is noteworthy.

Gleitman, et al. (2007) support the idea of the exclusion of purpose when they say that a “clearer conception of who we (and others) really are” comes with the acceptance that “we are governed by both automatic and relatively controlled processes in many of the most important domains of our lives” (p. 475). One might suppose the words “relatively controlled” and “many” leave open a window for genuine intentions to play a part, and yet, this analysis will describe the texts’ scientific accounts as mechanistic rather than purposeful, implying that genuine intention is not part of the causal account of who people are or what they do. The passages reflecting meanings of this naturalistic feature can be roughly divided into six categories: 1) purpose is excluded from descriptions of people, 2) behavioral predispositions attributed to biology via natural selection are cast as purposeless, 3) cognitive functioning is cast as excluding genuine intention, 4) concepts normally associated with genuine intention lack genuine intention, 5) behavior attributed to environmental causes is cast as purposeless, and 6) purpose is excluded from causal status in psychopathology and treatment.

*Purpose is excluded from descriptions of people.* Illustrating this first category within the “exclusion of purpose,” Myers (2010) provides a general description of people that excludes purpose. He asks, “What causes our striking diversity, and also our shared human nature?” He answers this question with a “complex story of how our genes (nature) and environments (nurture) define us” (p. 133). In spite of the complexity of systems, Myers summarizes: “Nurture works on what nature endows” (p. 7). What makes us human, he says, is a shared genetic profile, 96% of which is also shared with chimpanzees (or 99.4%, when one considers what is “functionally important”). However, these small differences are important because they explain “why one person has a disease that another does not, why one person is short and another tall, why one is outgoing and another shy” (p. 135).

But, Myers (2010) continues, genetics are not the whole picture, because destiny also depends on “the road along which environment drives us” (p. 153); “we are the product of a cascade of interactions between our genetic predispositions and our surrounding environments” (p. 142). The environment “drives” and each person is a “product,” indicating forces acting on them. This analysis will describe how this ideas summarizes the discourse in all three introductory texts on temperament, personality, development, morality, responses to adverse situations, and every other parameter by which humans might be characterized. Though not directly stated, the implication, then, would be that genuine intention is not a causal factor.

Similarly, Gleitman, et al. (2007) explain, “Genes guide the biochemical processes that eventually lead to the characteristics we observe in an individual. But other factors also influence the same processes.” The other factors listed are temperature, stimulation, toxins, and other environmental influences (p. 44). The authors note that while the “tendency to watch a lot of television seems to be inherited,” behavior is “massively influenced by the experiences we have

during our lifetimes, and how we reflect on, and react to, these experiences” (p. 46). This is not to be mistaken for genuine intentions involved in reflection and reaction. The authors explain, “[The central nervous system] contains the mechanisms that define each person’s personality, control his or her emotional responses, and more” (p. 88). That is, even reflections and responses are controlled by mechanisms. Zimbardo, et al. (2009) assert, "Personality is shaped by the combined forces of biological, situational, and mental processes—all embedded in a sociocultural and developmental context" (p. 431). Further, personality and temperament are thought to be "wired-in" patterns (pp. 252-3). It is difficult to see where genuine purpose could fit in such mechanistic descriptions.

Yet character and morality, typically considered purposeful, are expected to develop during childhood, and Myers (2010) discusses Kohlberg’s ideas on how this comes about in universally sequenced stages (p. 200). While Kohlberg’s theory has critics, and other theories are suggested in the text, the text uses terms such as “trigger” (p. 201) and “neural responses” to explain them (p. 201). Myers’ quotes Haidt (2008): “Could human morality really be run by the moral emotions . . .” (p. 201), implying an efficient-causal account ultimately governed by the nature-nurture interaction discussed above (see p. 142). Gleitman, et al. (2007) discuss the complex set of influences on a child’s prosocial development, such as biology and the style of parenting in the household (p. 421). Nowhere do the authors mention genuine intention as a factor in moral development, implying that purpose is not causal.

In order to address the complexity of the influences on children’s cognitive development, Gleitman, et al. (2007) prefer a mathematical model that shows the forces behind the variation in children:

Dynamic systems theory begins with the idea that many factors influence the child's performance at any stage of development—the list includes the child's ability to remember; her habits based on prior experience; her current inclinations shaped by what she has done recently; cues provided by the environment; constraints imposed by the particular task and by the physical world, and more. . . . The response that is finally produced, therefore, is determined by the interaction among all of these tugs; the behavior, in other words, represents an emergent product of these many factors coming together to shape each of the child's achievements (p. 388).

These “precise mathematical terms” are thought to make allowance for “the full set of factors influencing the child in any given situation,” allowing for predictions about performance. Since the genuine possibility of an “otherwise” is not reducible to a predictive formula, it is clear that this theory does not include genuine intention (p. 389).

Zimbardo, et al. (2009) explain temperament as a result of the nature-nurture interaction. Shyness in infants is associated with activity in the amygdala (nature). But the authors explain, “While basic temperaments can be recognized almost at birth, they are not written in stone.” This is not because children have genuine choices, but because “the environment interacts with these genetic tendencies, so that . . . other aspects of a child's experience can modify the way temperament expresses itself” (p. 253). It may appear that the authors imply genuine intention when they discuss the influences on transitions and health through adulthood: “Healthy coping strategies reduce the impact of stress on our health, and positive lifestyle choices reduce both our perceived stress and its impact on our health” (p. 648). However, these “strategies” and “choices” are discussed elsewhere as adaptive behaviors that involve learned formulas and sets of rules or making connections between old and new learned material (e.g., pp. 186-189. Students are



reminded that operant conditioning controls behavior by rewards and punishments. See also pp. 384-386). While “many early deaths result from behaviors over which we have control” (p. 648), the “control” itself is controlled by the interaction of nature and nurture (see pp. 186-198, 648-658). The authors do not explicitly state that genuine intention in no way causes temperament, but they also never discuss purpose as a causal part of the variability in behavior and thinking, effectively implying its irrelevance.

Myers (2010) explains this nature-nurture interaction with regards to obesity: "In those parts of the world where food and sweets are now abundantly available, the rule that once served our hungry distant ancestors (*When you find energy-rich fat or sugar, eat it!*) has become dysfunctional" (p. 456). The “rule” of nature is dysfunctional, and this is part of the reason people suffer from obesity. Myers explains that environmental factors such as sleep deprivation, social influence, “activity-inhibiting TV watching,” and the availability of energy-rich foods are also behind the rise in obesity rates (p. 460). Researchers try to find out which factor (nature or nurture) is more responsible, and the author suggests, “Genes mostly determine why one person today is heavier than another. Environment mostly determines why people today are heavier than their counterparts 50 years ago” (p. 462). This interaction of nature and nurture thought to account for obesity does not include genuine intention.

*Behavioral predispositions attributed to biology via natural selection are cast as purposeless.* The second category within the “exclusion of purpose” feature is illustrated as Gleitman, et al. (2007) concur with the nature-nurture explanation for obesity, emphasizing that eating behaviors are largely controlled by homeostatic biological mechanisms that developed via natural selection, though they “do not work perfectly” (p. 53). Behaviors that now contribute to obesity once led to “successful outcomes” or at least “successful adaptations” and thus were kept

on during the natural selection process (p. 211). In order to deal with this problem now, the causes must be addressed. The authors remind students, “Humans are, in important ways, biological machines; thus, if we are to understand our behavior, we must examine how the machinery functions” (p. 75). The machine metaphor implies purposelessness, supporting the idea that mechanisms without genuine purpose are responsible for eating disorders. Without a purposive and non-mechanical explanation, the account implies that the authors think genuine intentions do not matter.

Myers (2010) explains that sexual behaviors are also governed by naturally selected biological mechanisms. He says, “Sexual motivation is nature's clever way of making people procreate, thus enabling our species' survival. [It is] our genes' way of preserving and spreading themselves” (p. 465). Gleitman, et al. (2007) explain that though culture (environment) influences sexual behaviors, every behavior from selecting a mate to jealousy can be traced ultimately to naturally selected biological mechanisms (pp. 67-75). In regards to other ideas, they state, “One might think. . . that . . . finding and choosing a mate . . . are governed less by biology or by our evolutionary past” (p. 67). Instead, among humans there is “considerable consistency in mating preferences and also a contrast between the criteria males and females typically use,” and these consistencies are thought to indicate behaviors that more typically ensured passing one’s genes to the next generation (p. 72). The authors’ downplaying of any other explanation supports the idea that the “consistent and powerful forces” of natural selection (p. 67) sufficiently account for human mating behaviors. Exclusion of purpose is implied in that genuine intentions are absent from the discussion.

Gleitman, et al. (2007) note the advantage of this perspective in understanding learning behaviors: “[W]e can learn a great deal about humans, and about the role of our biological

heritage, by pursuing principles that apply to us just as they apply to many other species” (p. 196). The ability to adapt within a single lifetime is attributed to the brain’s plasticity—its ability to produce new neurons and new neural connections even to the point of large scale changes (pp. 113-114). An organism’s nervous system can adjust its functioning as experience requires for the organism’s gain. This biological plasticity is thought to be one of the “overlapping mechanisms” that evolved to enhance survival and reproduction (p. 113). While some adaptive behaviors are “presumably under the control of” the organism (p. 209), such as when a pigeon hops onto a platform for food when the light is green and a child pinches her sister only when her parents are not present, this “control” is explained as a product of instrumental or operant conditioning (pp. 209-218). Thus the biological “principles that apply to us,” such as those of natural selection, are thought to be sufficient to explain learning behaviors.

The authors ask, “Should all psychological questions have biological answers” (Gleitman, et al., 2007, p. 115)? They do not directly state that genuine intention is not part of the picture, but they imply this. Not “all psychological questions [will] ultimately be *phrased* in terms of action potentials and neurotransmitters,” but not because they are hedging about their claim that biological mechanisms “produce the behaviors that were favored by natural selection long ago” (p. 79, italics added). Their answer merely concerns the need for “appropriate terms.” A journalist or a historian probably will not want to discuss voter behavior in terms of neural firings. In other words, while the basis of behavior is indeed biological, the *terms* people should use are not always biological.

To underscore the idea that behavior is always based in biology and not some mysterious “ghost in the machine” (see Gleitman, et al., 2007, p. 81), Myers (2010) asks, “How do we get mind out of meat” (p. 80)? He asserts, “[P]sychology is rooted in biology, which is rooted in

chemistry, which is rooted in physics” (p. 80). Yet, he says, “[P]sychology is more than applied physics,” and by inference also more than biology (p. 80). Like the answer to the question in the previous paragraph, this statement refers not to the possibility of genuine intention, but to an appropriate level of approach. It may be disconcerting for people to think in direct terms that all of their experiences are reducible to lawfully governed biological mechanisms. The author suggests they should think in different terms from the most basic psychological level (“holistic” is suggested, though no meaning is offered). Still the cold facts of the matter remain: “[O]ur thoughts, feelings, and actions arise from our specialized yet integrated brain” (pp. 80-81).

*Cognitive functioning is cast as excluding genuine intention.* Zimbardo, et al. (2009) illustrate the third category within the “exclusion of purpose” feature, explaining the mind’s functioning without genuine intention. They assert that the nervous system and endocrine system “are the biological bedrock for all our thoughts, emotions, and behaviors” (p. 53). They use a mechanical metaphor to explain the nervous system’s specializing and integrating: “At last, neuroscientists have begun unraveling the deep mysteries of this complex organ of the mind. They now see the brain as a collection of distinct modules that work together like the components of a computer. . . . The brain is composed of many specialized modules that work together to create mind and behavior.” Gleitman, et al. (2007) use a different, yet still lawful metaphor: “[T]he complex phenomena of mental functioning are best understood as the result of many smaller events, much as an avalanche is produced by the movement of many small stones and rocks. Each of these smaller events is computationally simple, but that is okay, since each is responsible only for a fraction of the overall achievement” (p. 280). Though the authors do not explicitly say that genuine intentions do not factor in cognition, it is implicit in the discussion

and the metaphors; like computers and avalanches, the nervous system is cast as functioning according to lawful principles and without genuine intention.

Myers (2010) also uses a computer model to introduce the principles that govern memory: “To remember any event, we must get information into our brain (encoding), retain that information (storage), and later get it back out (retrieval)” (pp. 328-329). The author admits the computer model is not perfect, but this is not because of its exclusion of purposiveness in action. Rather, it is because brains are slower and more fragile. Zimbardo, et al. (2009) point out another difference: “computers can’t deal with meaning,” yet humans deal with meaning all of the time (p. 177). For example, people’s brains selectively organize material into “meaningful patterns” in order to remember it (p. 135). However, the explanation for this “meaning” lacks genuine intention: “Storing new information in [long term memory (LTM)] usually requires that you make the information meaningful while it is in working memory. This means that you must associate new information with things you already know” (p. 154). The meaning of meaning, then, amounts only to making connections between old and new information encoded and stored in chemical or electrical entities of the brain, much like a computer.

Discussions of perception, interpretation, and construal also imply a meaningless meaning. Zimbardo, et al. (2009) note that “we impose our own meanings” on sensations and interpret them as well (p. 326). Again, making meanings “requires making connections between new information and old information,” but there is more. “It also requires organizing the information so that you see how it is interconnected. And, finally, it requires anticipating the cues that will be used to bring it back to consciousness” (p. 343). All of these processes, including imposing “our own” meanings, are lawful, and the authors use another mechanistic metaphor to explain: “These inborn mental processes, in a top-down fashion, determine the

organization of the individual parts of the percept, just as mountains and valleys determine the course of a river” (p. 321). That is, innate mechanisms organize bits of information like building blocks to create a meaning. The authors also remind the reader that learning (ostensibly required for anticipation) has its roots in brain mechanisms (p. 343). While people may perceive and interpret experiences uniquely due to the multiplicity of biological and environmental interactions in their histories, these cognitive functions are explained only as lawful processes. Whether or not the authors intend it, the meaning they speak of lacks genuine purpose.

According to Zimbardo, et al. (2009), some of these lawful abilities are characteristics of “good thinkers.” The authors say using previous experience to solve new problems is an “adaptive strategy” (p. 186), which involves operant conditioning (e.g., a process in which behavior is controlled by rewards and punishments). According to the principles of operant conditioning, if a person “learns” that a behavior elicits something reinforcing, the behavior is increasingly likely to be repeated (pp. 103-106). According to the authors, while “extraordinary creativity does not require superhuman talents,” it does require “extensive knowledge, high motivation, and certain personality characteristics” (p. 193), all of which are described as ultimately governed by the lawful interaction of nature and nurture (see pp. 66, 182, 385-386).

The authors of all three texts note the importance of personality in shaping perceptions, interpretations, and construals. Myers (2010), for example, states, “[O]ur personalities shape how we interpret and react to events” (p. 577). Likewise, he claims that personality is best understood as being biologically rooted (p. 140). Gleitman, et al. (2007) note there are both inherited and learned components “to the executive control processes that guide many of our thought processes” and that may be “prerequisite for delaying gratification” (p. 589). “Executive control processes” suggest efficient-causal mechanisms of the brain governed by natural laws. While biological

components responsible for guiding “many of our thought processes” are considered a requirement for delayed gratification, genuine intention is not mentioned.

According to Myers (2010), thoughts are processed according to principles that operate on billions of neurons “talking to each other at synapses (p. 51). “Though the human brain is more complex than a rat’s, both follow the same principles” (p. 49). He asserts, “the brain’s ultimate challenge is to understand itself” (p. 47), and the big question is, “How do heredity and experience together wire the brain” (p. 51)? These forces, Myers says, govern “moods, memories, and mental abilities” (p. 51), as well as whether one is “conscientious, well-connected, and doggedly energetic” (p. 408). If the brain is “wired” to action by lawful forces, the implication is that thoughts cannot involve genuine intentions.

The brain not only does the thinking, but it also does the “feeling.” Myers (2010) quips, “It’s your brain, not your heart, that falls in love” (p. 51). Zimbardo, et al. (2009) concur with this idea: “[E]motions, desires, and thoughts originate in the brain” (p. 66). And further, “[b]iological mechanisms [are] at work behind our emotions” (p. 385), the two frontal lobes having complementary roles, with most negative emotions controlled by the right and most positive emotions by the left (p. 386). And lest anyone should seek an unlawful escape hatch for intuition, the authors describe this phenomenon as an “emotional component of thinking” that arises from “structures” in the frontal lobes that “allow us unconsciously to add emotional ‘hunches’ to our decisions in the form of information about past rewards and punishments” (p. 182). If emotions and intuitions are reducible to lawful processes, the implication is that there is no genuine intentionality in such things or the behaviors that are consequent to them.

Similarly, what people attend to is supposed to be governed by natural cognitive processes. Myers (2010) explains the reason why attention is needed: “Because we cannot

possibly focus on all the information bombarding our senses at once, we shine the flashlight beam of our attention on certain incoming stimuli—often on those that are novel or important” (p. 329). While Myers does not say that we do not genuinely choose what we attend to, he discusses phenomena such as choice blindness and stimuli that “draw our eye and demand our attention” (p. 91). The author holds cognitive mechanisms, which “aided our ancestors’ survival” (p. 241), responsible for attentive behaviors, but there is no indication that he holds genuine intention responsible (pp. 89-91). Further, according to Zimbardo, et al. (2009), a specific brain structure is responsible for directing attention. They quip, “And—don't blame your professor—it is the reticular formation you struggle with when you become drowsy in class” (p. 70). People attend and struggle not because they intend but because the governing laws compel them.

All of these cognitive functions are associated with primary structures in the brain, but research has shown that many structures work together during any of these functions. Zimbardo, et al. (2009) note that researchers are still trying to solve the issue of integrating—“the greatest mystery of all in the brain: how the brain combines input from many different modules into a single sensation, idea, or action” (p. 57). The current preferred explanation is synchronized bursts of electrical synapses. The authors add, “Ultimately, the brain decides which messages will be sent through both [peripheral nervous system and endocrine system] networks.” (p. 64). The brain makes its decisions via biological circuitry. The authors assign this decision-making task to the cerebral cortex, which “interprets events and associates them with memories and feelings” (p. 385). In explaining integration by lawful efficient-causal processes alone, the text implies that genuine intention is excluded.

*Concepts normally associated with genuine intention lack genuine intention.* The previous category refers to how cognitive functioning is explained lawfully. This fourth category



within the “exclusion of purpose” feature shows how concepts normally associated with genuine intention, such as character, lack genuine intention in the texts’ meanings. Zimbardo, et al. (2009) refer to character as a concept that matters to psychology. “[Social psychologists] are curious to discover . . . how individual personality and character may affect behavior in social settings, and also how they are in turn influenced by factors in the social situation” (p. 479). However, all references to character ultimately attribute responsibility to lawful forces acting on the individual, such as the social situation. For example, “Burnout is often misunderstood as a personal problem--almost a weakness in character—when in reality it more likely signifies a weakness in the organization” (p. 625). The authors note that when commentators attributed the inaction of bystanders who witnessed the Kitty Genovese murder to defects in character, they were falling prey to the fundamental attribution error, the tendency to attribute other people’s actions to their personal traits rather than situational forces (p. 504). While the authors do not say that character is never responsible for behavior or that genuine intention is not responsible for character, nothing in the text indicates otherwise.

Likewise Myers (2010) refers to character as something that matters (p. 439) and cites a popular movie character in a sidebar quote: “It is our choices . . . that show what we truly are, far more than our abilities” (p. 431). Yet the text portrays the person who develops character as passive; character is imposed on a person rather than genuinely chosen. For example, “suffering sometimes builds character” but “may also bring out the worst in us,” as in cases where “aggression is triggered” (p. 700). Further, Myers wraps up a discussion of transformational leadership, in which chief executives inspire others to act for the greater good rather than their own self-interests (p. 492), by explaining that motives are driven by physiological mechanisms

and psychological factors (p. 493). This implies that character is formed not by genuine purposive action, but by motives and actions that are driven by “mechanisms” and “factors.”

Similarly, each of the texts excludes purpose from the concept of motivation, that which “determines which of many possible responses you will select at any moment—although the selection is not always a deliberate, conscious one” (Zimbardo, et al., 2009, p. 397). But in any form, motivation always involves “mental processes that arouse us and then select and direct our behavior” (p. 397) and “satisfying an internal need” (p. 398). This selection and direction of behavior is explained in terms of mechanisms and the lawful processes that govern them. For example, “[s]tates of deprivation automatically trigger . . . mechanism[s], which then influence bodily functioning and create motivational states” (p. 398). Zimbardo, et al. (2009) suggest, “we can think of each motive as a mechanism that adapted to help humans survive and reproduce” (p. 405). Myers (2010) suggests one way to study a given motive: “How is it *pushed* by our inborn physiological needs and *pulled* by incentives in the environment” (p. 445, emphasis added)? According to this account, motive is a product of the lawful interaction of nature and nurture. In the same vein, Gleitman, et al. (2007) answer the question, “What determines how someone responds?” The answer is complex: “Some factors are biological; other factors are tied to the individual’s personality; still others are rooted in the person’s culture” (p. 60). Each of these factors is explained as a lawful phenomenon; by implication, genuine intentions do not have anything to do with motivated behaviors.

When these authors explain the actions people take and the choices they make, the explanations are reducible to lawful interactions of nature and nurture. Gleitman, et al. (2007) note that people choose what they attend to, and yet, “[t]he selective control of perception . . . draws on processes that involve mental adjustments . . . that determine both which inputs we will

consider and what we will do with those inputs” (p. 184). The authors explain that these “mental adjustments” involve eye movements directed by visual stimuli, priming, and other external cues (pp. 184-186). Myers (2010) speaks of choice and asserts, “we are both the products and the architects of our environments” (p. 577). Yet choices themselves are considered to derive ultimately from dispositions (p. 526), conditioning (p. 297), and the environment itself (pp. 680-691). Genuine intention is missing from the account.

Zimbardo, et al. (2009) suggest that by “taking action,” people can increase their chances of adaptation and survival (p. 623), and by “reappraising everyday difficulties,” people can improve their own mental health (p. 629). Gleitman, et al. (2007) refer to goal states involved in solving problems (p. 281). Yet, if motivated behavior and appraisal are explained only in terms of lawful processes, actions, appraisals, and goals do not involve real choices. It is the brain modules that “direct attention, set priorities, [and] make plans” (p. 146). These authors even explain liking something as being subject to psychological principles: Classical conditioning is a form of behavioral learning “that accounts for many of your own likes and dislikes” (p. 94).

The idea of self-control is explained only in terms of its biological basis and psychological processes (e.g., Myers, 2010, p. 579), implying the exclusion of genuine intention as causal. Although Zimbardo, et al. (2009) say it is important for people to believe they have control over the events of their lives (p. 400; see also Myers, 2010, p. 580), they describe self-control in terms of “environmental influences and to known brain mechanisms”(Zimbardo, et al., p. 418). The authors discuss how “we can learn to control [emotional responses]” (p. 392), yet this ability is explained as a product of operant conditioning and the interaction of nature and nurture. Gleitman, et al. (2007) make a distinction between behaviors that are automatically triggered by a stimulus and those “presumably under the control of” a person (p. 209). They also

discuss taking “control of our own thoughts” (p. 302). However, this “control” is not attributed to genuine intentions, but rather to biological activity involving “several different structures within the prefrontal cortex” (p. 303).

***Behavior attributed to environmental causes is cast as purposeless.*** Biological activity and resulting behaviors are also explicitly attributed to environmental causes acting on naturally selected traits, as described in passages included under this fifth category within the “exclusion of purpose” feature. For example, Gleitman, , et al. (2007) describe how responses to the environment selected by evolution continue in a species even when they seem irrational: “The sight of food can cause us to eat even when we are not hungry.” Further, responses to perceived environmental threat (real or not) “are tightly controlled by complex regulatory mechanisms that have unmistakably been shaped by natural selection, and which seem to function in roughly the same way in humans as they do in other species” (p. 56). In short, “we are stuck with the same emergency reactions that our ancestors had” (p. 57). Evolution is connected to the environment through culture and learning, and these may be directly responsible for individual behaviors. The authors explain that aggression is “motivated by complex beliefs—beliefs about historical rights, or prior injuries, or future opportunities.” These are thought to be determined by cultural factors acting on naturally selected biological characteristics (p. 60). Further, a person’s emotional expression is “governed by a set of display rules that are specific to each culture” (p. 415). This description does not include an opportunity for a person to do other than what the environmental forces dictate, thus the exclusion of purpose as a causal factor is implicit.

Adaptive learning is thought to facilitate satisfaction of an individual’s needs and also to cause behavior. Zimbardo, et al. (2009) explain, “When you first walk down a street in a foreign city, all the differences that catch your eye are merely different ways that people have found to

seek reinforcement or avoid punishment" (p. 108). Accordingly, whether something is reinforcing or punishing is determined by survival instinct, learning, and especially culture (p. 107). Since the consequences of other people's behavior can be observed, environmental influence on behavior includes the "modeling" of others. Whether or not an individual actually does copy the behavior is determined by whether the individual has learned to perceive the outcome to be reinforcing or not (p. 118). Myers (2010) asserts that people are "natural mimics" (p. 680) and suggests this could be the cause of suicide clusters (p. 681). Adaptive behavior can become maladaptive. He discusses how people perceive alcohol as reinforcing to help cope with depression and anxiety (p. 124), noting that "behavior is often controlled more by its immediate consequences than by its later ones" (p. 125). Again, the efficient-causal interaction of biology (seeking "reinforcement") and learning ("modeling") is responsible, and the exclusion of genuine intention is implied in regards to these choices.

Responsibility for socialization is also attributed to external forces acting on a person's nature. Gleitman, et al. (2007) discuss the social world that influences thinking and expectations, beginning with parenting styles that elicit certain types of behavior in children (p. 409). All social groups have this behavioral influence, "sometimes making us act in a better fashion than we ordinarily would, but (perhaps more often) making us act in a worse fashion" (p. 496). The authors attribute social loafing, groupthink, and greater human achievement to social influence. If genuine intentions are involved, they are not mentioned in the account.

Zimbardo, et al. (2009) discuss how socialization is shaped without genuine intentions. Such social mores as mate selection and sexual behaviors are "controlled by social pressures" interacting with genetics (p. 413). The authors ask, "What makes people like each other" (p. 499)? They assert that almost everything about interpersonal attraction can be adequately

explained in terms of reward theory, in which “we like best those who give us maximum rewards at minimum cost” (p. 500). One of the few exceptions is when cognitive dissonance interferes, such as when “people are attracted to those for whom they have agreed to suffer” (p. 503). Thus, genuine intentions are not required for people to remain in costly relationships.

Zimbardo, et al. (2009) remind students that the schedule of reinforcement has power to determine behavior. For example, they state, “Whether we're talking about college students, Fortune 500 CEO's or laboratory rats, any plan to influence operant learning requires careful consideration of the timing and frequency of rewards” (p. 103). Punishment also has power. Myers (2010) asks, “What makes us angry?” He then answers that things as minor as “foul odors, high temperatures, a traffic jam, aches and pains” have the power to make us angry (p. 518). Although Myers offers “expert” advice on how to handle anger (p. 519), according to this account of behavior, whether or not a person can follow this advice depends not on genuinely intentions but on efficient-causal processes.

Myers (2010) concludes a discussion of the Milgram obedience experiment with the following take-away message: “[S]trong social influence can make people conform to falsehoods or capitulate to cruelty” (p. 686). Zimbardo, et al. (2009), in connection with a description of the Stanford Prison Experiment, urge students to remember that “the best bet is that most of us would react the same way as these participants did” (p. 516). And Gleitman, et al. (2007) follow a discussion of the Abu Ghraib prison abuses by asserting that de-individuation is “produced” by situations; “the situation itself may have done far more to create these abuses than the personal qualities of any of the soldiers involved” (p. 496). While there is no indication that “personal qualities” are related to genuine intentions in any case, it is clear that it is the power of the situation that is thought to be largely responsible for abusive behaviors.

Zimbardo, et al. (2009) explain that seemingly “senseless” behavior actually makes sense when there is “solid evidence for the motivations behind it. For example, vandalism has been called senseless, until it becomes apparent that it is often done by have-nots who are trying to make an impact on society” (p. 522). This behavior, then, is not senseless because it is supposed to be predictable in these circumstances. The authors explain motivation as involving “mental processes that arouse us and then select and direct our behavior” (p. 397), as if a person’s “trying to make an impact” is not genuinely purposeful but rather driven by lawful mental processes. Similarly, the situation in “urban slums, filled with restless, jobless young men” (p. 523) is considered only from a lawful perspective, likened to “the tinder that the September 11 attacks were intended to ignite” (p. 522). If violence simply awaits a mechanism to “ignite” a situation, the implication is that genuine intention is not a factor.

Myers (2010) agrees with this assessment when he writes, “Atrocious behaviors often emerge in atrocious situations” (p. 678). He further explains, “[T]here is abundant evidence that poverty, meaningless work, . . . and sexism undermine people’s sense of competence, personal control, and self-esteem. Such stresses increase their risk of depression, alcohol dependency, and suicide” (p. 669). In the end, if people’s genuine choices do not warrant attention in relation to these issues, the implication is that genuine intention is unnecessary to an adequate causal account.

Even so, Zimbardo, et al. (2009) indicate that “bad behavior” is not excused (pp. 517 & 519). From this one might infer genuine responsibility, and thereby, genuine intentionality. However, when the authors speak of “new ideas about changing the causal influences on those behaviors” (p. 517), they speak only of situations and the systems behind them. “Situations,” the authors say, “are created by systems” (p. 518). “Understanding how systems function increases

both our understanding of why situations work as they do to influence human behavior and is also the most effective way to plan behavior change from the top down: systems change situations, which in turn change behavior” (p. 515). The authors claim, “We must view terrorism from historical, economic, and political perspectives—again, not to excuse violent acts but to understand their origins” (p. 523). In doing so, they view each of these perspectives as a “top down” efficient-causal chain that does not include final or genuinely intentional causes. The authors’ call for “a public health model that recognizes individual affliction and illness as the consequence of a vector of disease in society” (p. 519) suggests mechanistic causes and does not attribute any causal influence to genuine intentions.

*Purpose is excluded from causal status in psychopathology and treatment.* This sixth category within the “exclusion of purpose” feature is illustrated by Gleitman, et al. (2007) recommendation of a biopsychosocial viewpoint—one that excludes genuine intentions—for understanding psychopathology, both its causes and possible treatments. This includes causes that create risk for a disorder and the cause “that turns the risk into the diagnosable problem” (p. 600). The biopsychosocial view involves culture, thinking styles, and social support as well as neurotransmitter activity, but not genuine intentions. As Myers (2010) explains, “[A]ll behavior, whether called normal or disordered, arises from the interaction of nature (genetic and physiological factors) and nurture (past and present experiences).” He continues, “[T]here may be a difficulty in the person's environment, in the person's current interpretation of events, or in the person's bad habits and poor social skills” (p. 596). If every behavior, even a person’s interpretation of events, arises from these things, the implication is that genuine intentions make no contribution to psychopathology.



Gleitman, et al. (2007) explain that the complex interaction of biopsychosocial factors is why “only 5-12% [of people in the U.S. who have experienced a traumatic event] develop PTSD” (p. 625). Not only does the severity of the trauma vary, but also genetic factors, early adverse experiences, and social support. The authors explain Beck’s theory of depression similarly: “[D]epression stems from a set of intensely negative and irrational beliefs” developed during childhood and adolescence, “activated [when] the person encounters some significant life stress” (p. 617). Biopsychosocial factors are also responsible in Seligman’s idea of learned helplessness: “[E]ach of us has a consistent style for how we tend to [think about events]. . . . Evidence suggests that this [internal] pessimistic explanatory style is indeed a characteristic of depressed persons” (p. 618). As biochemical and cognitive contributors and the social setting interact, they cause depression (pp. 616-620). Genuine intention is not included as a factor.

Psychologists are discovering more specific causes of disorders, for example, “Research increasingly points to a biological basis for ADHD, with genetic factors playing a large role” (Gleitman, et al., 2007, p. 629), “phobias are the product of learning” (p. 622), and “OCD may be linked to overactivity in three specific brain areas” (p. 624). Zimbardo, et al. (2009) describe psychopathology as “insidious, working its way into thoughts and feelings, diminishing its victims’ emotional and physical well-being, along with their personal and family relationships” (p. 532). Viewing sufferers as “victims” coheres with the idea that genuine intentions are not involved in the causes or manifestations of pathology, and hence would not be considered in treatment.

Since disorders are assumed to have bases in lawfully governed biological activity interacting with environmental influences, the best solutions are thought to be interventions that directly enter the causal chains responsible for the pathology. If ADHD is thought to have a

biological basis, it makes sense that it is treated with medication (Myers, 2010, p. 595). Gleitman, et al. (2007) explain that while drug therapies do not constitute an unqualified success, they “do seem to be extremely effective, providing considerable symptom relief for people with a wide range of mental disorders” (p. 640). Treatment may also include shaping behaviors, such as counterconditioning (Myers, 2010, p. 643), assuming that conditioned behavior can also be unconditioned. These treatments are applied assuming a relatively passive client.

Myers describes cognitive therapies as working on the same principle; rather than clients actively changing themselves, the therapist aims to “reverse clients' *catastrophizing* beliefs” (p. 647). Cognitive therapy assumes that events produce dysfunctional thinking that then results in disorders. “If such thinking patterns can be learned,” Myers says, “then surely they can be replaced” (p. 647). Stress inoculation training is an example of reversing the efficient-causal chain that ostensibly causes a disorder such as depression: therapists teach people to restructure their thinking, the thought patterns change, and depression rates are then lower (p. 648). Though a sample therapist/client dialogue (p. 648) indicates that both therapist and client agree that the client is responsible for deciding how important something is, the greater context of the text treats decisions as being driven by mechanisms (e.g., pp. 88 & 493), not as genuinely intentional.

Zimbardo, et al. (2009) explain how biomedical therapies work to change “the brain’s chemistry with drugs, its circuitry with surgery, or its patterns of activity with pulses of electricity or powerful magnetic fields” (p. 593). Gleitman, et al. (2007) discuss other techniques of cognitive therapists, who aim to change a person’s behaviors and how she thinks about the world” (p. 650). They also describe stress-inoculation therapy, which includes “specific forms of ‘self-talk’ that the person will engage in during stressful times” (p. 650). The authors do not

discuss these applied therapies as assuming any genuine intention on the part of the client. If the process is successful, the client changes. If the client does not change, the treatment is not right.

**Conclusion.** Many passages from these introductory psychology texts clearly indicate that genuine purposiveness is not included as causal—not even a necessary condition—for human action or thinking. The suggestion that genuine intention is illusory is important, though explicated rarely. Passages from all three texts imply that people’s cognition, behaviors, and psychological disorders can be fully described naturalistically, using biological or environmental principles and their interactions. As such, all human phenomena would be without genuine intention. This analysis thus supports the claim that naturalism pervades mainstream psychology in a dogmatic way.

**Lawfulness: Only the regularities of events merit explanation.** Lawfulness, the second feature of naturalism, refers to the idea that only events that are explainable by natural laws merit explanation at all—in other words, singular and unreplicable events that may be pivotal to a non-naturalistic understanding are essentially ignored in the search for universal principles that facilitate prediction.

No student is likely to leave off a thorough reading of any of these texts with the mistaken idea that anecdotal evidence is of great value to psychological science. Zimbardo, et al. (2009) explain, “[T]he case study can sometimes give us valuable information that could be obtained in no other way,” but this method is reserved for “in-depth study of unusual people with rare problems or unusual talents” (p. 18). It is clearly not a preferred method of research, because its “limitations severely restrict the researcher’s ability to draw conclusions that can be applied with confidence to other individuals” (p. 18). While the authors do not directly claim that irregular events are excluded from psychological accounts, this analysis will show that the

passages representing the naturalistic feature of lawfulness emphasize the importance of universal laws of human behavior. The meanings of the passages can be roughly divided into three categories that support the naturalistic feature: 1) psychology seeks general principles, 2) theories are presented as universalities, and 3) explanations in terms of Western rationality reify universality.

***Psychology seeks general principles.*** Zimbardo, et al. (2009) elucidate psychology's ultimate aim: "[P]sychological science ultimately seeks to develop comprehensive explanations for behavior and mental processes" (p. 11). The Western framework of rationality favors sweeping theories that cohere with the received grand causal story of how the world came to be, using such theories to predict what is likely to happen in the future (see Moreland, 2000). Gleitman, et al. (2007) agree: "Science tries to discover general principles and then apply them to the individual case" (p. 33). Further, "investigators want to generalize from their data, [hoping] to draw conclusions that apply to a vast number of people" (p. 28). And Myers (2010) asserts, "Psychologists' concerns lie less with particular behaviors than with general principles that help explain many behaviors" (p. 39). He also notes, "single cases may be misleading (p. 33)" and highlights the uselessness of "alarming anecdotes," affirming that the important questions are about rates rather than singular events (p. 663). All of these texts show clearly that mainstream psychology values general principles.

***Theories are presented as universalities or generalities.*** If psychological science values general laws, it is no wonder that psychological theories are presented as universalities. As theories are found to *not* apply universally, caveats may be added from time to time—but the more universal a theory is, the better. The concept of intelligence, which resists psychologists' efforts to settle on a universal theory, is "a politically hot issue" fraught with disagreement even

among researchers (Zimbardo, et al., 2009, p. 213), especially since its assessment is “tied to important real-world concerns” (Gleitman, et al., 2007, p. 518). Whether the argument concerns defining, assessing, or explaining the causes of intelligence, theorists make universal claims or aim for a theory that applies universally (e.g., Gleitman, et al., 2007, pp. 517-548; Myers, 2010, pp. 405-441; Zimbardo, et al., 2009, pp. 192-222).

Other examples of this drive for universal theories are found in developmental psychology. Though Piaget’s universal theory of development has been widely disputed (Gleitman, et al., 2007, p. 364), responses to correct his claims are also presented as universal (pp. 368-380). For example, Gleitman, et al. (2007) suggest that Piaget’s idea of discontinuous stages has been successfully refuted by research showing “children’s growth is far more gradual than Piaget envisioned” (p. 375). Both theories are intended to apply to all children. Likewise, the development of teens is cast in as general terms as possible. Zimbardo, et al. (2009) note that “variations among cultures compound the difficulty of specifying the span of adolescence” (p. 260), frustrating the attempt at universality. Even so, the teen brain is thought to develop in the same way across contexts, and “is more likely to process information through the amygdala rather than through the more rational frontal cortex” (p. 263). This facilitates the universal theory that “teens’ difficulty controlling their impulses is the inevitable consequence of the premature frontal cortex combined with the overactive amygdala” (p. 263). Emphasizing universal theories and attempting to discover ever more fine-tuned principles that govern all development implies that psychology is not concerned with truly singular events.

Myers (2010) emphasizes the universality of trait theories of personality, noting that even situational variables do not change personality traits in basic ways (pp. 568-576). Trait theories use assessment techniques that are thought to apply universally so that the principles governing

all behavior can be used to predict how people will behave. "We can size up how outgoing someone is within seconds" (p. 576), Myers says. Granted, there are multiple possible combinations of personality traits, but trait theories do not make room for events that do not cohere with their universal principles. Though personalities are considered to be complex, Zimbardo, et al. (2009) propose that people—especially unusual ones—are best understood by applying a theory (pp. 431-434). Since “none has the whole truth” (p. 434), the authors suggest using multiple theories to understand different aspects of a personality. It is unclear how this is logically possible, since the theories differ, yet each is supposed to be universal.

The discussions of virtually all psychological science’s concepts are imbued with generalities. Singularities are nearly always downplayed if not ignored completely (see exceptions in Analysis 3 below). Gleitman, et al. (2007) claim that language reflects “sameness of mentality across the human species” (p. 351). Zimbardo, et al. (2009) note that people sense things “in roughly the same ways” (p. 294). The authors discuss generalities, such as the power of social situations to control human behavior (p. 479) and the propensity of Americans and Europeans, but not Asians, to make the fundamental attribution error (p. 466). While the authors note contradicting claims, they also note that in these situations, “No one has yet found the ‘right’ answers” (p. 467). Psychologists are still looking for universal laws.

***Explanations in terms of Western rationality reify universality.*** Several passages underscore the importance of universality by proposing general behavioral principles in terms of how they cohere with natural selection, which is considered to be a universal and unifying theory (e.g., Myers, 2010, p. 168). Myers asserts that “children’s cognitive immaturity [is] adaptive. It is nature’s strategy for keeping children close to protective adults and providing time for learning and socialization” (p.188). Ostensibly, the children who survived to reproduce were more often

the ones whose genetics elicited cognitive immaturity for a certain amount of time after birth, and this is why all children fit this same description. Gleitman, et al. (2007) provide a similar explanation for the phenomenon of habituation in which animals (including humans) cease to respond to stimuli that do not seem to be important to survival and reproduction, thus freeing attention for other stimuli that may be important toward those ends (p. 197). Casting principles in terms of the received universal causal theory reifies the universality of the principle.

Extending the principles of learning beyond human behavior in the same way, Gleitman, et al. (2007) explain their general application. Supposedly to elicit survival and reproduction, “different species all need to learn roughly the same lessons, and this is why we can identify principles of learning that apply with equal force to ants, bats, cows, dolphins, and humans” (p. 227). Further, “[T]here are general laws of learning that apply no matter who (or what) is doing the learning, and no matter what is being learned” (p. 197). These statements illustrate the importance to naturalism of clearing out particular context to get to the basic truth. With these principles grounded in the universal theory of natural selection, it is implied that singular exceptions do not merit consideration as evidence of a possibly different, non-naturalistic phenomenon.

**Conclusion.** Because each of the texts casts singularities as inappropriate for scientific study, emphasizes the importance of universal principles in psychology, and reifies the theories presented in terms of Western rationality, it appears that the irregularities of events do not merit explanation in psychological accounts. The naturalistic feature of lawfulness appears in the introductory texts in these ways without clearly stating that truly singular events are not considered in the explanation of psychological phenomena, supporting the claim that naturalism is the “central dogma” of psychological science.

**Rejection of the supernatural.** This naturalistic feature refers to the exclusion of the supernatural for all naturalistic purposes. One manifestation of this feature would be that supernatural causation popularly connected with events is explained away as ultimately governed by natural laws. Another, more implicit manifestation would be the very absence of consideration of the supernatural for any naturalistic purposes.

While none of the authors in these introductory texts directly states that God does not exist or that supernatural events cannot be real, this analysis will show how the lack of consideration of supernatural causation in all three texts implies that they believe supernatural phenomena have no impact on human psychology and behavior. For example, Zimbardo, et al. (2009) discuss the importance of multiple perspectives in psychology, noting that many perspectives are needed to understand the complexity of human behavior (p. 23). However, the array of perspectives they provide excludes a supernatural one. A supernatural perspective is also missing from the discussion of multiple perspectives in treatments for psychological disorders (Zimbardo, et al., 2009, p. 571). Though the text mentions the many cultures in which treatments are “bound up with religion and the supernatural” (p. 575) and reminds readers to be sensitive to different cultures and individuals (p. 591), these passages refer to the consideration of people’s subjective beliefs and do not admit that the supernatural may be a necessary condition in the psychological account of real people.

Myers (2010) likewise excludes the supernatural from phenomena where non-naturalists are likely to include it, such as in the matters of birth and death. Instead, Myers suggests that birth is a matter of fortune (pp. 174-175), and death is a matter of natural selection’s mechanisms causing old people to wear out so they no longer consume resources that prolific youth need (p. 209). He suggests that the interaction between nature and nurture is implicated in longevity.



Myers makes sure that students are not confused about hypnosis and near-death experiences in which people have made supernatural claims: “Hypnotists have no magical mind-control power” (p. 108), and the spiritual phenomena supposed to be associated with near-death experience are “best understood” according to Siegel (1980) as “hallucinatory activity of the brain” (Myers, 2010, p. 127).

Gleitman, et al. (2007) also reject the supernatural as a valid necessary condition. Although they refer to “the true miracle” that altruistic acts occur (p. 501), there is no indication that they mean supernatural causes are at work. And while they note that mental health professionals would do well to acknowledge patients’ spirituality, there is no indication that the authors believe the supernatural could have anything to do with patients’ situations or the healing process (p. 657). Thus the idea of the supernatural as a necessary condition is completely excluded from the introductory texts, and its rejection is implicit; the authors avoid directly stating that the supernatural cannot be considered in psychology. This analysis provides support for the claim that naturalism undergirds mainstream psychology in a dogmatic way.

**Casting the world as dualistic.** Dualism here refers to a distinct separation of the objective and the subjective, as in the idea that biases and interpretations can be removed or minimized from information so that what remains is objective. Naturalism values the objective because it holds that objective facts provide valid evidence, while all other information is viewed suspiciously.

This analysis will show that dualism is neither acknowledged nor alluded to in any of the texts. However, three main ideas found in all three texts will show how dualism is manifested: 1) an objective world exists, 2) good science produces objective evidence, and 3) human perceptions are biased and subjective.

***The objective world.*** The authors of all three texts claim that there is such a thing as objectivity separate from interpretations and biases, and that research according to scientific method offers the nearest approach to it. They claim one “reality as it truly is” and another “reality [that] has been interpreted” (Gleitman, et al., 2007, p. 122). “Reality as it truly is” belongs to the objective realm, while interpreted reality belongs to the subjective, and is not considered reliable. “The facts speak for themselves,” says Myers (2010, p. 18), implying that information can be free from interpretation. Zimbardo, et al. (2009) criticize early efforts at intelligence testing because they were biased and therefore unfair (pp. 198-199), implying there is a way to test objectively. They also imply that psychological disorders have objective diagnoses (p. 558) and evaluations of treatments should be objective (pp. 589-590). Further, “the science of psychology is based on objective, verifiable evidence—not just the opinions of experts and authorities, as we often find in nonscientific fields” (p. 5). In all of these cases, testing by the rules of modern science is supposed to produce objective answers free and clear of any individual point of view.

***Good science produces objective evidence.*** According to Gleitman, et al. (2007), psychological scientists should consider “only those facts that were collected in a reliable objective manner” (p. 14). The scientific method with its empirical evidence is presented as the only way to produce objective truth, and all else must be relegated to the less reliable subjective realm. Some examples of theories that in this category are those of Maslow and Rogers, because they are not supported by “real evidence” (pp. 581-585), and Gardner’s theory of multiple intelligences, because “some of the data he cites are open to other interpretations” (p. 536). Though naturalistic in that they exclude the supernatural, these less accepted theories are marginalized because they are not naturalistic in the reductive sense. The criticisms imply that

data can only be counted as evidence when there is only one way to see it, and this is considered to be the objective truth. Zimbardo, et al. (2009) warn students of potential biases that may influence researcher objectivity (p. 18) and discuss the importance of a comparison or control group for objective scientific studies. The authors reiterate that “[t]estimonials don’t make for good science” (p. 590). Ostensibly, researchers can control for these subjectivities so that what remains is truly objective.

***Introspection and perception are biased.*** While the authors suggest that objectivity is possible and necessary for good science, they are clear about the lack of objectivity in common perceptions and introspection. Zimbardo, et al. (2009) illustrate the difference between objective reality and subjective perception that is filtered through personal meanings: the brain’s “experience of a tomato is not the same as the tomato itself—although we usually assume that the two are identical” (p. 290). Meaning is subjectively assigned, and illusion is mistaken for reality. Myers (2010) agrees: “*We perceive the world not exactly as it is, but as it is useful for us to perceive it*” (p. 235). That is, a real tomato belongs to the objective order, but perception, a subjective phenomenon, is unable to make full contact with it.

Gleitman, et al. (2007) assert that such ambiguous perceptions and introspection have uncertain value to science, and therefore more objective methods are needed (p. 273). Myers (2010) also notes that though science strives for objectivity, “individual scientists are affected by their own assumptions and attitudes” (p. 416). He laments, “[A]buses of the early intelligence tests serve to remind us that science can be value-laden. Behind a screen of scientific objectivity, ideology sometimes lurks” (p. 417). Ostensibly, by following correct procedures, these “abuses” will be minimized and scientists can rid their research of subjective biases to produce objective results and thus reveal truths about the real world.

**Conclusion.** While dualism is not mentioned in the texts, this analysis shows that the ideas of the existence of an objective world, good science producing objective evidence, and the inherent biases of human nature are implicit in all three. This suggests that dualism may be not only pervasive, but also an unquestioned assumption in these introductory psychology texts, supporting the view that naturalism is the underlying ideology of psychology.

**Casting as valid explanations only those following Western rationality.** The meanings of the passages of text that support this naturalistic feature will show how the other four features support its requirements: All knowledge must cohere with the received causal story and can only emerge using a specific set of tools that facilitate prediction and control. That which supports universal laws (lawfulness) is emphasized, and anything else is excluded either by complete omission (purpose and the supernatural) or by relegating it to a separate and lower status (dualism).

Four main ideas comprise the meanings of Western rationality in these passages: 1) real events are explainable by scientific method, 2) prediction guides method, 3) good science employs prescribed methods and tools, and 4) events are assumed to be rooted in the evolutionary past. Some of these ideas are explicated for beginning students, but they are implicit here in that they are assumed to be true principles without being themselves tested by the requirements of Western rationality.

***Real events are explainable by scientific method.*** An important aspect of Western rationality is its postulate that theoretically, all real events, no matter how mysterious they seem, can be explained in terms of the natural laws that govern them. These, in turn, are thought to be discoverable by scientific method. Though the authors do not explicitly state that all real events can be explained by the methods prescribed in the text, this is implied in that alternative

explanations are considered to be worthless, if they are considered at all. The texts discuss consciousness and memory as some of the mysteries psychological science is working to understand (Myers, 2010, pp. 1 & 352; Zimbardo, et al., 2009, p. 338). According to these authors, solving mysteries involves debunking myths and pseudoscientific claims. This idea is closely tied to marginalization of supernatural phenomena (see Analysis 2).

Myers (2010) notes the lack of a scientific basis in some mysterious claims about altered states of consciousness such as dreams and near-death experiences, helping students to recognize that rational explanations are rooted in observable biological function (pp. 91-128). Similarly, Zimbardo, et al. (2009) debunk the idea of mysterious explanations: “[A]ltered states do not involve any mysterious or paranormal phenomena that defy rational explanation.” Instead, they are merely “modifications of ordinary consciousness that we can study with the tools of science” (p. 357). In fact, the authors note, one of psychology’s jobs is to “dispute the unfounded claims of pseudoscience” (p. 11). Non-naturalistic explanations are preemptively thrown out as invalid because they are not compatible with the methods of Western science nor do they facilitate prediction and control.

***Prediction guides method.*** Another, and perhaps the most salient, characteristic of Western rationality is its aim to control, which is difficult without being able to predict outcomes—hence, the value of predictive laws. All of the texts imply that the value of any scientific measure is directly proportional to its usefulness in predicting outcomes. Further, they present this idea as if it should be the assumption of all scientists and seekers of knowledge. According to Gleitman, et al. (2007), the trait approach to personality involves figuring out which basic traits facilitate a description of a person that “succinctly captures who he is, but also is precise enough so that it can serve as a basis for predicting his actions” (p. 554). Similarly,

attitude tests are designed not only to measure attitudes, but more importantly to predict behavior (pp. 453-455). Mental tests are “designed to predict what an individual will be able to do,” but a test’s ability to predict actual future performance is “extremely important” (p. 523). Not only does a test need to predict ability to be useful, but it must also predict outcomes.

As with scientific instruments of measure, the value of a scientific theory is directly proportional to its predictive efficacy. Myers (2010) explains, “If a theory works—if the data support its predictions—so much the better for that theory. If the predictions fail, the theory will be revised or rejected” (p. 21). The way to obtain data to support predictions is hypothesis testing, and researchers hope to confirm their hypotheses in order to provide this support for their theories (Gleitman, et al., 2007, p. 14). Zimbardo, et al. (2009) note that in spite of criticisms of the Big Five personality trait theory, such as its oversimplification of complex personalities, it is nevertheless valuable to psychology because these traits “do predict most of the things that truly matter to most of us” (p. 440). These authors assume that what matters most in the pursuit of knowledge is what predicts best (see also p. 495).

***Good science employs prescribed methods and tools.*** Another important aspect of Western rationality is how it facilitates outcome prediction through systematic methods. To do this, psychological researchers use specific tools (discussed in all three texts) that fit methodological requirements. According to Gleitman, et al. (2007), “the great intellectual achievements of humanity have been supported by a powerful set of intellectual tools, including carefully developed techniques for data gathering and statistical procedures for analysis of the results. [These tools] guarantee that scholarly achievements rest on a firm base” (p. 301).

One important tool, psychometrics, supports Western rationality’s requirement of objectivity; gathering, analyzing, and expressing data in numerical terms is assumed to render

results less subject to biases. Myers (2010) explains, “In descriptive, correlational, and experimental research, statistics are tools that help us see and interpret what the unaided eye might miss” (p. 33). Gleitman, et al. (2007) provide an example of how this works: “In order to study attitudes, . . . we need some way of determining what each person’s attitudes are [and] we need some way to measure them” (p. 453). Attitudes, intelligence, personality traits, and practically every other human phenomenon are turned into numbers that are subjected to statistical analyses that illuminate patterns within the scores of a population (e.g., p. 527 & Appendix). In addition to assuming that the numbers legitimately stand in for attitudes, intelligence, and other phenomena, the authors seem to assume that all scientists and serious seekers of knowledge recognize the superiority of this type of statistical analysis over other types of analysis.

Another technique important to Western rationality’s attempt at objectivity is to reduce a phenomenon to its basic elements free of context. For example, language is broken down into phonemes, and its acquisition is reduced to individual brain structures that perceive these sound bites. The elements can then be put back together to show how each event in an efficient causal chain causes the next event to occur in language learning (e.g., Gleitman, et al., 2007, p. 314-330; Myers, 2010, p. 386). Because it reveals quantifiable phenomena in specific brain structures across time, neuroscience is considered a great aid to this method (Gleitman, et al., 2007, pp. 176-184). These types of explanations are considered to be rational, objective, and valid—as opposed to those fraught with anecdotes and interpretations.

The tools of Western rationality are indeed limited. Information obtained in ways that do not fit the method is not accepted. Parapsychology is one example: it needs “a reproducible phenomenon and a theory to explain it,” says Myers (2010, p. 284). Without these things, it is

simply not considered to be valid science. Naturalistic theories of the weak variety are criticized for the same reason; they do not adequately reduce research methods to Western rationality's requirements. Myers notes that critics say humanistic psychology's concepts are "vague and subjective" (p. 567). Freud's theory is also criticized for its lack of scientific validity. Myers reminds students, "A good theory makes testable predictions" (p. 563). Gleitman, et al. (2007) extend this demand to clinical practice, which they assume must be "based on solid research" (p. 659)—that is, subjected to the same limited set of tools that characterizes Western rationality—or it cannot be valid.

*Events are assumed to be rooted in the evolutionary past.* Western rationality holds that theoretically, by using these tools psychologists will discover how the coming-to-be of all human entities is "intelligible in light of the naturalist causal story" (Moreland, 2000, p. 73). As natural selection is a theory held virtually universally by naturalists and is usually considered to be a comprehensive theory—meaning it is the ultimate explanation for every facet of life (see Gantt & Melling, 2012, for an explanation of how genetic selection, human culture, and the interaction of the two ultimately end in the same place)—it is no wonder that Zimbardo, et al. (2009) cast rational understanding of psychological phenomena in these terms: "The idea of evolution is both simple and powerful. It also suggests explanations for some otherwise mysterious psychological processes" (p. 46). Though Myers (2010) admits that the evolutionary perspective has legitimate criticisms (e.g., "One can hardly lose at hindsight explanation," (p. 148)), it is also no wonder that all three texts offer explanations cast in its terms across the gamut of the discipline.

According to Gleitman, et al. (2007), "The tendency to form attachments is rooted in our evolutionary past" (p. 400), so we can expect other species to behave similarly. Myers (2010)



likewise casts human heritage in terms of natural selection alone, explaining, “Social bonds boosted our ancestors’ survival rate” (p. 478). He notes that human culture goes beyond the passing on of rudimentary customs of courtship and tool use that other primates bequeath to their offspring. The evolution of language has produced a human culture that “supports our species’ survival and reproduction by enabling social and economic systems that give us an edge” (p. 153). Natural selection is also at the roots of social divisions often associated with prejudice and sometimes with genocide. “Our ancestors . . . knew that there was safety in solidarity,” Myers explains. “Dividing the world into ‘us’ and ‘them’ entails racism and war, but it also provides the benefits of communal solidarity” (p. 695). Thus, psychological processes are assumed to be explained according to naturalistic rational standards.

Emotions and psychopathology are also explained as if natural selection were universally responsible. Gleitman, et al. (2007) note how psychologists learn how emotions were useful to our ancestors’ survival by looking at the consequences of emotion and their current benefits. For example, joy helps in stress recovery and anger may focus attention on obstacles to goals salient to survival and reproduction (p. 472). According to Myers (2010), “Emotions are our body’s adaptive response. They exist not to give us interesting experiences but to enhance our survival” (p. 497, see also Zimbardo, et al., 2009, p. 379). In this vein, Zimbardo, et al. (2009) explain fear: “[W]e carry an innate biological tendency, acquired through natural selection, to respond quickly and automatically to stimuli that posed a survival threat to our ancestors” (p. 547). Myers (2010) notes that humans fear harmless snakes and other things similar to those that posed a danger for their ancestors, yet they sometimes grow indifferent to other real threats. “Evolution has not prepared us to fear bombs dropping from the sky,” he says (p. 607). “[B]iologically speaking, life’s purpose is not happiness but survival and reproduction” (p. 612). For this reason,

depression can be cast as a survival mechanism that restrains risk-taking. It becomes psychopathological when it reaches a maladaptive level.

Human development and sensory experiences are also cast in the adaptive terms of Western rational tradition. Zimbardo, et al. (2009) discuss how the characteristics of newborns, such as their abilities to find nourishment, avoid harm, and interact with caregivers are “genetically designed to facilitate survival” (p. 232). Gleitman, et al. (2007) similarly discuss the child’s theory of mind as an aid to survival in that “it would have been advantageous for our ancestors to be able to predict the actions of other people” (p. 379). Tastes and smells attracted ancestors to energy-rich food, smells warned against predators, and parallel processing of visual stimuli aided survival by allowing people to instantly analyze many types of visual stimuli (Myers, 2010, pp. 241-263). Because these explanations cohere with the “naturalist causal story” (Moreland, 2000, p. 73), they are accepted as plausible even without undergoing rigorous scientific testing.

**Conclusion.** The passages of text reflecting meanings of this feature show how several themes belonging to the naturalistic feature of Western rationality are important concepts for introductory psychology. Currently accepted scientific method with its particular tools has status as the only way to explain anything reliably, and predictive usefulness is favored for all theories. Additionally, theories about human experience are reified by explanations that cohere with the received causal story reducible to natural selection, because its universality is assumed. This analysis supports the idea that Western rationality pervades these introductory psychology texts and that beginning students are expected to accept its underlying assumptions as givens even when they are not likely to understand what is implied. This interpretation supports the idea that naturalism is dogmatic in mainstream psychology.

## **Conclusion**

Analysis 1 describes the meanings of passages of text as they relate to the meanings of all five features of naturalism, showing how the philosophy of naturalism pervades the introductory texts. Each feature is also implicit at some level. All the texts reject the supernatural without openly stating that the supernatural is not allowed in psychology. Lawfulness, the idea that only the regularities of events merit explanation, is implicit in that no declaration is made that truly singular events cannot be explained by psychology's guiding principles, while general laws and replication are emphasized and explicated. Dualism is implicit in that the authors do not acknowledge it even as they discuss a distinct division between the objective and the subjective. Western rationality is implicit in that its goals of prediction and control, methods, and coherence with a basis in natural selection are assumed without question. Exclusion of purpose is implicit in that the scientific discourse never includes genuine intention, but there is no direct statement that it is excluded. The implicitness of each of the five features in the passages of this analysis underscores the idea of the dogmatism of naturalism in psychology.

I was surprised to find that some naturalistic features are described explicitly, though not named, in these texts. For example, the authors state openly and often that singular anecdotes do not make good scientific evidence (lawfulness: casting only regular events as real events) and that psychological research is concerned with discovering universal and predictive principles that facilitate control of behavior (casting as valid explanations only those following Western rationality) (e.g., Gleitman, et al., 2007, pp. 14 & 28; Myers, 2010, pp. 21-23). Considering that the texts were written for beginning psychology students who may not be familiar with the principles of modern psychological science, it makes sense that these authors would describe explicitly the ideas that new students are expected to hold within their discipline. For example,

many students may enter the field without yet fully understanding the prescribed method or goals of naturalistic inquiry, and some may believe in God and that supernatural forces are necessary conditions in real events (e.g., miracles). They must then be explicitly taught to dispense with the ideas that do not cohere with naturalistic psychological science (e.g., supernatural beliefs) and discern which ideas (e.g., sensory observation and replication) fit the pre-defined parameters.

These parameters are largely defined by Western rationality, the assumption of which in a sense leads to the assumption of the other four naturalistic features. For example, exclusion of all things supernatural is deliberate and emphatic in these texts, perhaps to satisfy the requirement of a general and systematic method that leads to lawful explanation, prediction, and control. Every aspect of Western science's systematic method and explanations of phenomena must fit the parameters and cohere with pre-existing ideas (see Moreland, 2000, p. 73). It makes sense, then, that genuinely supernatural explanations must be unequivocally banished from naturalistic inquiry, because their singular and unlawful nature does not cohere with received ideas or facilitate the received method, prediction, or the discovery of universal laws.

The deliberateness and explicitness of the naturalistic feature of lawfulness indicates its integrality to the Western rationality framework. Irregular events that do not conform to general principles do not contribute to the goals of this ideology and are not considered valid evidence. The question of what is and is not admitted as scientific evidence is also at the heart of the dualism found in all three texts, but this feature does not appear to be so much as acknowledged. Rather, dualism seems to be incidental to the other features of naturalism and implicit in the texts.

Dualism is also related to the naturalistic feature of exclusion of purpose, because genuine intention does not cohere with naturalism's requirement of objectivity. Exclusion of purpose is often implicit, specifically where intentional terms are used but not meant as

genuinely intentional. Since naturalism requires all causes to cohere with Western rationality and the received naturalistic story (e.g., natural selection, observation, replication), the only causes allowed for human phenomena are nature (genetic) and nurture (environmental) and their interaction, both of which are described in the text as being governed by natural laws. The meanings of these features found in the passages of text show how naturalism pervades psychology in a dogmatic way.

### **Analysis 2 – Marginalization**

The central issue for this analysis differs from that of Analysis 1. The previous analysis describes the presence of naturalistic features, one of which is the rejection of the supernatural. In contrast, marginalization is not merely rejection, but an active putting down or eclipsing of a non-naturalistic feature. Marginalization of non-naturalism may support the claim that naturalism is dogmatic in psychology. In this study, only the supernatural was found in connection with marginalization by these criteria in the introductory texts. The meanings of the passages analyzed here can be roughly divided into four categories: 1) supernatural causation as a useless, incorrect idea or nonsense, 2) correctives offered to replace supernatural ideas, 3) belief in the supernatural as a hindrance to the discovery of truth, and 4) belief in the supernatural associated with inhumanity.

**Supernatural causation as a useless, incorrect idea or nonsense.** Zimbardo, et al. (2009) explain that the folk idea of “a spirit or inner life force” is useless as a scientific concept because it “takes us no closer to understanding how consciousness works” (p. 337). Gleitman, et al. (2007) have a similar criticism of ancient supernatural treatments for psychological disorders, including calming a spirit with prayers and music. “Not surprisingly, none of these treatments was effective. . .” (p. 597). And if being useless is not enough to relegate supernatural causation

to the trash heap of ancient superstition, psychology challenges such sources of “nonsense” as “astrologers, palm readers, and graphologists, along with an assortment of psychics, seers, and prophets” who claim to have supernatural insights (Zimbardo, 2009, p. 11). The world of sleep, “once the province of psychoanalysts, prophets, poets, painters, and psychics” has now been rescued from such nonsense by “scientific researchers, who have shown that sleep must be understood as one of our natural biological cycles” (p. 345). All such supernatural claims are pre-emptively treated as ridiculous ideas because they cannot hope to pass the test of Western rationality—verification by the scientific method, which involves observation, replication, prediction, and coherence with the received naturalist story. Thus naturalism has replaced the nonsense of those who advocate supernatural explanations of all kinds.

**Correctives offered to replace supernatural ideas.** The authors of these texts are deliberate in pointing out that popular supernatural notions that defy rational explanation are incorrect (e.g., “altered states do not involve any mysterious or paranormal phenomena”, Zimbardo, et al., 2009, p. 357). The authors of course must provide an alternative and correct explanation, such as the following: “An altered state of consciousness occurs when some aspect of normal consciousness is modified by mental, behavioral, or chemical means” (p. 357). Scientific research has shown correlations between having a spiritual dimension in one’s life or being involved in a faith community and well-being. Lest the supernatural should be implicated as a necessary condition for this correlation, the authors suggest that instead, it could be “many factors, including a healthier lifestyle, social support, and optimistic thinking” (p.658).

Likewise, Myers (2010) offers similar alternatives to explain why “religious involvement rivals nonsmoking and exercise effects” for predicting better health and longevity. In fact, he suggests that activities related to supernatural beliefs are outmoded and have been replaced by

natural ones, as if they are exclusive of one another: “Rather than asking God to spare their children from smallpox, people were able to vaccinate them. Rather than seeking a spiritual healer when burning with bacterial fever, they were able to use antibiotics” (p. 548). Further, Myers shows that no matter what natural science cannot explain at the moment, supernatural causation is not an option. For example, though the positive effects of religious involvement remain even after researchers control for natural factors thought to be responsible, researchers suspect there is a third set of natural intervening variables such as stress protection and a sense of “ultimate acceptance” to explain away the faith factor (pp. 547-549).

Since non-naturalists have attributed some altered states of consciousness to the supernatural as a necessary condition, alternative naturalistic explanations are found in the texts in relation to these altered states. For example, Myers (2010) suggests, “Imagine observing a person with narcolepsy in medieval times. Might such symptoms . . . have seemed like demon possession” (p. 102)? He also asks students to consider their dreams. “Do they foretell the future, as people often believe? Or do they only seem to do so because we are more likely to recall or reconstruct dreams that appear to have come true” (p. 283)? To drive this point home, Myers describes a Harvard study in which people think their predictions from their dreams are prophetic, but they are shown to be so no more often than chance would permit. “[E]ach of us imagines many events. Given the billions of events in the world each day . . . some stunning coincidences are sure to occur. . . . [C]hance alone would predict that more than a thousand times a day someone on Earth will think of someone and then within the ensuing five minutes will learn of the person's death (Charpak & Broch, 2004)” (Myers, 2010, p. 283). Students may be assured, then, that dreams are not prophetic.

Both the Myers (2010) and Zimbardo, et al. (2009, p. 550) texts address near-death experiences (NDEs) in such a way as to ensure that students do not harbor any ideas of supernatural causation. Myers (2010) begins with a composite of the NDE stories of many adults and children, explaining that since the components of these descriptions so closely resemble other hallucinatory experiences that can be explained by neural activity, NDEs must also have natural explanations: "Patients who have experienced temporal lobe seizures have reported profound mystical experiences, sometimes similar to those of near-death experiences" (p. 127). A "Test Yourself" follow-up question asks, "In what ways are near-death experiences similar to drug-induced hallucinations" (p. 128)? Even the chapter review reminds students of the similarities between NDEs and hallucinations (p. 130). One may wonder if this phenomenon, widely publicized in media, has such compelling supernatural implications that authors of introductory psychology texts see a particular need to quell the belief that the supernatural is a necessary condition for NDEs.

Still, Myers (2010) shows concerns for students' need for depth. As if in response to students who may feel a loss after learning that science precludes supernatural causation, he offers this consolation: "To feel awe and to gain a deep reverence for life, we need look no further than our own perceptual system and its capacity for organizing formless nerve impulses into colorful sights, vivid sounds, and evocative smells" (p. 285). In other words, sensory observation and the discovery of the natural laws that govern the world are enough. Thus, science rectifies faulty supernatural ideas.

Myers (2010) does not tell students outright that supernatural things do not exist. He even asks, concerning the amazing and fine-tuned universe, "Is there a benevolent superintelligence behind it all?" In answer, he offers Ludwig Wittgenstein's advice: "Whereof one cannot speak,



thereof one must be silent” (p. 169). Myers interprets this to mean that questions such as the superintelligence question above cannot be discovered by the scientific method, and therefore no valid claim can be made about it: "On such matters, a humble, awed, scientific silence is appropriate” (p. 169). Myers’ concern for some of his readers is evident in that he addresses their “fears”—ostensibly the apparent conflict between their supernatural beliefs and what naturalistic psychological science allows. He offers, "Rather than fearing science, we can welcome its enlarging our understanding and awakening our sense of awe" (p. 169). In construing their concerns as fears, Myers implies that belief in supernatural entities might elicit a hesitation to learn new things and accept the discoveries of science. If this is true, and science is the only valid way to discover truth, then belief in supernatural entities could be considered a hindrance to the discovery of truth—perhaps even antiscientific.

**Belief in the supernatural as a hindrance to the discovery of truth.** Gleitman, et al. (2007, p. 81) suggest that Descartes’s proposal that the centralized controller of human behavior is not a machine may have been due to hindrance of this type. Whether or not Descartes himself was hindered by supernatural beliefs, the authors suggest that he might have feared possible condemnation at the hands of the Church, had he proposed that human nature is basically mechanistic. The authors assert that only “as theology’s grip on science loosened” could the scientific account drop any reference to a human soul or a “ghost in the machine” (p. 81). And this strategy, they continue, “of regarding humans as machines, with no mention of a soul in our scientific theorizing, has fostered dramatic breakthroughs in understanding ourselves and our fellow animals.” According to the text, “theology’s grip” kept science from progressing, and its loosening has fostered greater understanding (p. 81).

**Belief in the supernatural associated with inhumanity.** If scientific progress is associated with greater understanding, it may also be associated with greater humanity. The converse may be inferred that “theology’s grip,” associated with less understanding, may be associated with less humanity. Indeed, all three texts discuss a historical association between supernatural beliefs and the brutal treatments of those who suffered from psychopathology (e.g., Gleitman, et al., 2007, pp. 597; Myers, 2010, p. 596, Zimbardo, et al. 2009, p. 533). Prescientific views are contrasted with later views associated with the advancement of science and better, more humane treatments.

Of the three texts, Zimbardo, et al. (2009) explain this view most explicitly: [Anciently] "psychopathology was believed to be caused by demons and spirits that had taken possession of the person's mind and body" (p. 533). The authors point out that “[u]nder the influence of the medieval Church” harsh cures resulted in “thousands of mentally disturbed people [being] tortured and executed all across the European continent” (p. 533). Relief came in the form of a new theory—one that did not involve the supernatural: “People began to perceive individuals with psychological problems as sick (suffering from illness), rather than as demon possessed or immoral. And what a difference a new theory made! Treating mental disorders by torture and abuse no longer made sense” (p. 534). The inference that supernatural beliefs elicit senseless and inhumane treatment seems clear in that torture and abuse “made sense” when the ideas of psychopathology included the supernatural. As science advanced and the developing theories lost their supernatural flavor, treatment became more humane.

**Conclusion.** All three texts, then, to some degree, do not merely reflect the naturalistic feature of rejection of the supernatural. They actively put down or marginalize the idea of the supernatural by casting it as useless and nonsensical, needing correctives to replace it. In addition,

belief in the supernatural is cast as a hindrance to the discovery of truth and is associated with inhumanity. Bringing together the passages of text reflecting these ideas provides a different perspective than that of reading them only within their respective sections of the text, which may not elicit the idea of blatant marginalization. The synthesis provided by this analysis shows how marginalization of the supernatural may further support the claim that naturalism is dogmatic in mainstream psychology.

### **Analysis 3 – Ambiguity**

Whenever a term that hinted at naturalism or non-naturalism was not explained or the meanings of passages seemed to contradict each other, the passages containing these ideas were carefully analyzed for content and compared with other related passages of text. Those passages that were not readily categorizable were designated ambiguous. This analysis will describe possible meanings of these passages, showing whether or not the meanings support the idea of naturalism as a dogmatic philosophy in psychology. Ambiguities related to lawfulness are discussed first.

**Ambiguity regarding lawfulness.** Recall from the results of Analysis 1 how the naturalistic feature of lawfulness is deliberate and explicit in the texts, indicating that the authors want students to understand clearly that scientists seek “to discover general principles and then apply them to the individual case” (Gleitman, et al., 2007, p. 33). Though this section will describe ambiguities regarding lawfulness (the idea that only regular events merit explanation), it will also show whether even these ambiguities ultimately support the claim that naturalism is dogmatic in psychology.

As described in Analysis 1, psychologists seek generalities and universal principles of behavior in order to predict and control behavior. The particularities of singular events may not

be very helpful in the discovery of principles that can be used to predict and control. However, Gleitman, et al. (2007) discuss the importance of one type of singularity: “[I]n some cases, the case study is by itself deeply and richly instructive,” and “provide[s] powerful insights into more general issues and phenomena” (p. 27). The authors say that this singular type of study *does* help in understanding generalities. This important question concerning the feature of lawfulness, then, is not explicitly answered: Does the singular event alone merit explanation—or does it count only insofar as it leads to the discovery of general principles governing replicable events? The authors indicate its importance as to general application, but not as to its own irregularity, in which case it supports the naturalistic feature of lawfulness rather than the non-naturalistic feature of considering truly singular events to merit explanation.

Ambiguity related to lawfulness seems to indicate a conflict between the goals of Western science and the evidence that some people do not seem to follow the rules—at least the known rules. Sometimes events appear to be both singular *and* important, such as when the outcome of a singular event is highly desirable. For example, Zimbardo, et al. (2009) discuss obedience research and real life situations in which the vast majority of the people involved obeyed perceived authority figures to the point of being willing to harm or actually harming others—yet some participants refused to obey under such circumstances (p. 488-494). The authors recognize the importance of this singular behavior yet continue to emphasize the scientific principles that govern general human behavior. They do not explicate whether they view these events as truly singular or rather as events that *seem* to be singular but eventually will be replicated and lead to the discovery of the environmental controls that can be put in place to ensure these desirable outcomes. Underscoring the ambiguity, the authors include this quote: “In the words of Erika Bourguignon (1979), ‘It is one of the major intellectual developments of the

twentieth century to call into question the concept of a universal human nature” (pp. 466-467). If the authors believe that irregular events merit explanation, they do not indicate this—in any case, singular behavior is not included in their scientific accounts of events. In fact, students are often reminded that anecdotes are not scientific evidence (e.g., Myers, 2010, pp. 20, 23, & 663).

Another ambiguous concept is related to prototypes and stereotypes. Gleitman, et al. (2007) discuss the problems in diagnosing a given type of psychopathology, supposed to be a scientific endeavor performed as objectively as possible. Yet “an individual’s traits are likely only to approximate [a] prototype,” they note, calling for balance between diagnosing practically everyone with a disorder and ignoring those who need mental health services (p. 631).

If psychopathology is governed by natural laws, then this diagnostic problem must simply be a case of not yet knowing all the laws. The text refers to contributing factors to pathology that are “best understood in terms of the person’s beliefs or life experiences” (p. 631), leaving the reader unsure as to whether these factors and disorders are completely subject to natural laws or can have truly irregular contexts. However, since in the text beliefs are not themselves considered to be genuinely purposeful because they and the accompanying life experiences are cast as being completely governed by natural laws, diagnosis must be in theory also based on regular events governed by natural laws rather than on any irregular events. Thus this ambiguity ultimately lends support for the naturalistic feature of lawfulness rather than the non-naturalistic feature of considering truly singular events to merit explanation.

While the scientific discussion of lawful disorders produces prototypes, the scientific discussion of attribution produces stereotypes: Zimbardo, et al. (2009) explain the tendency of Americans and Europeans to make the fundamental attribution error (p. 466), which stereotypes these groups as to how they stereotype others. But they also note, “we behave far less

consistently from one situation to another than most had assumed” (p. 468). While the inconsistency between “the way people are” and the observation that in particular instances they are not what they are expected to be could be explained as a phenomenon of the myriad possibilities provided by the interaction of the laws of nature and the laws of nurture, this statement is unclear as to what the authors believe. If they are hinting at irregular behaviors not governed by natural laws, such as genuine purpose, they do not state this. In any case, the text indicates that the goal of psychology is to develop comprehensive explanations of behavior (p. 11) that can be applied to a group of people (p. 18).

A final ambiguity related to lawfulness is the question of whether or not science can ultimately answer all questions concerning the natural world, which includes all human behavior. While Gleitman, et al. (2007) instruct students that science “is a set of procedures designed to let us separate true claims about the world from mere opinion” by putting “beliefs to the test” (p. 13), the authors later reflect, “To understand and appreciate [humanity] is a task too huge for any one field of human endeavor, whether art, philosophy, or science” (p. 33). The authors do not say whether or not the understanding these nonscientific fields of endeavor (ostensibly including many singular works) contribute to a complete picture of humanity must manifest or confirm general naturalistic principles. If they assume that non-naturalistic fields contribute valid and reliable knowledge, then this is a case of non-naturalism. But if the knowledge non-naturalistic fields contribute is considered to be “mere opinion” and not reliable or valid, then a dual order of reality is assumed that relegates the singular works of art and philosophy to the subjective order, while scientific knowledge retains its objective status. The clear meanings of related passages in the text support the latter naturalistic explanation.

**Ambiguity regarding purpose.** Like the ambiguity concerning lawfulness, ambiguity regarding purpose may reflect a conflict between two salient ideas. The first is that the discovery of governing natural principles allows for predictability—ideally, complete predictability—of natural phenomena. The second idea flies in the face of this ideal, because in lived experience, people tend to think they make genuine choices—that they could have acted otherwise even given the same circumstances. This is not a situation that affords complete predictability, yet the near universality of this belief and the implications of rejecting it make it unsettling to reject outright. Perhaps this is the reason why ambiguity concerning these ideas is found in all three texts. This ambiguity can be roughly categorized into the areas of responsibility, choice, and control.

**Responsibility.** All three texts either explicate or imply personal responsibility for one's actions. Of course, if one can be responsible for one's acts, logically one must be able to make genuine choices in the face of which one can be held accountable. In a subtle example of ambiguity, Gleitman, et al. (2007) ask, "Do we (and should we) attribute a person's actions to his dispositional qualities or to the situation" (p. 490)? Apart from the idea that "should" itself implies responsibility, the question implies that it makes a difference whether the situation or the disposition is held responsible. If this mattered only so that the correct environmental or dispositional changes could be applied, then personal responsibility and genuine intention need not be at issue. However, the context is concerned with giving credit where it is due and the unfairness of blaming a person who is not at fault; the statement thus hints at the question of personal responsibility (see also pp. 484-489). The authors never state outright that one is in any way responsible for one's disposition, yet if one is not, then the unfairness of wrongful attribution should not be a concern. If natural laws govern both the situation and the disposition,

neither attribution implies personal responsibility. Since the authors imply that fairness is at issue in attribution, but do not make any case for genuine personal responsibility, it is difficult to tell whether or not personal responsibility is supposed to be genuine.

Zimbardo, et al. (2009) also suggest what people should and should not do (e.g., p. 185), while at the same time explaining all human behavior in terms of the laws of nature and nurture. They indicate that causal influences on “bad behaviors” can be changed when one understands why some people engage in them (p. 517). This idea does not necessarily mean that the person must take responsibility for the actions or for the changes. However, the text explicitly “does not excuse” these individuals, which implies personal responsibility (p. 517). The authors also point out that people disown responsibility and try to justify their bad decisions, which clearly implies the possibility of genuine choice and purpose (pp. 503-504). Further, in a discussion about mental health strategies, they state, “the choice of action is . . . up . . . to the individual who owns the problem” (p. 592). It seems clear who is held responsible here, and if responsible, then that person’s genuine intentions must indeed have causal properties. One is left to wonder, then, why the scientific account of behavior in the texts includes only lawful phenomena.

Similarly, Myers (2010) is clear on the lawful nature/nurture interaction causing all human behavior, yet he includes statements that imply personal responsibility. The ambiguity in the following statement is striking: “As we come to better understand the biological and environmental basis for all human behavior, from generosity to vandalism, when should we—and should we not—hold people accountable for their actions” (p. 601)? These biological and environmental bases are discussed in purely lawful terms with no genuine intention involved (see Analysis 1), but even so the question is posed about when people should be held responsible. Myers also implies the idea of guilt, quoting research and legal documents that concern



adolescent decision-making: “Teens are ‘less guilty by reason of adolescence’” (p. 199). Guilt, either more or less, implies that genuine intention is at least partly responsible for an action, and it also implies morality.

Myers (2010) suggests that morality can be included in an understanding of mind. He asserts, “We are not mere jabbering robots” (p. 81). A robot’s behavior, of course, would not be considered “moral” or otherwise, and the robot would not be held accountable for its behavior, though consequences for its actions may include dismantling or destruction. Rather, the behavior of the programmer of the robot might be considered “moral” or “immoral.” However, if the programmer’s actions were entirely governed by natural laws, then they could not be moral or immoral actions, being devoid of genuine intention. If, on the other hand, genuine intention were a necessary condition for the programmer’s actions, morality would be possible and he or she could be held accountable. Myers’ ambiguity here lies in that he includes morality, responsibility, and guilt but excludes genuine intention from the psychological account of behavior. If the psychological account ultimately reduces all aspects of behavior to law-governed mechanisms, as is indicated by the description of the meanings of related passages of text in Analysis 1, then these terms must be interpreted as having naturalistic meanings that exclude genuine intentions.

**Choice.** All three texts either hint at or assert the idea of human choice without including genuine intentions in the psychological account. Gleitman, et al. (2007) assert that people are capable of true altruism, implying a genuine choice not to follow general principles of self or group interest (p. 501). This kind of choice is also inherent in George Kelly’s personality theory, which the text discusses briefly: People do not need to be pushed and pulled in order to behave, because they interpret and move “on their own accord” (p. 587). That the text does not marginalize this theory indicates that the jury may not be settled as to whether or not genuine

intention is causal. Yet it remains unclear whether the authors think this interpreting and moving “on their own accord” is genuinely intentional or merely an illusion of control, because their psychological accounts of cognition and behavior do not include genuine intention.

Zimbardo, et al. (2009) follow a similar pattern of discoursing on the laws that govern behavior and inserting ambiguous statements about choice. For example, the text asks, "Is it possible to choose to live a long and healthy life? Or will your health be determined by factors out of your hands, such as your genetic background or simply your access to health care" (p. 648)? This choice could be real and entail genuine intention, or it could merely refer to lawful causal chains coming together in a given way, making it seem like real choices are being made. If some factors are “out of your hands,” does this mean other factors are within genuine human control? The text continues with an assertion that people have control over many behaviors, some that result in early deaths (p. 648). “Control” as used here could imply that our behavior has some basis in genuine intention, or it could merely refer to our law-governed capabilities (genes and environment interacting in myriad ways). Finally, the text enjoins people to take control: "we are challenged to change ourselves" (p. 651). Again, it is unclear whether this change is supposed to be made by genuine choice. If not, it remains unclear how any deliberate interaction of causal chains can be initiated without some kind of genuine intention.

Myers (2010) also enjoins people to change their behaviors (p. 679), their appraisals (p. 528), and their responses to daily events (p. 531). In regards to mental disorders, he asserts, “we can break the cycle of depression . . . by reversing our self-blame and negative attributions,” along with other suggestions (p. 621). These seem to require genuine intention, though the principle of learned helplessness is described as a lawful phenomenon (p. 618). Other phenomena, such as suicide clusters (p. 681) and social influence (p. 686), are discussed in terms

of lawful principles. Still, Myers claims, "People aren't billiard balls. When feeling pressured, we may react by doing the opposite of what is expected" (p. 690). The argument here seems to be both for and against genuine choice as a cause of behavior.

Myers seems to realize that his psychological account of behavior leads to the idea that genuine purpose is not causal, because he tries to explain how the two conflicting ideas can coexist:

If nature and nurture jointly form us, are we “nothing but” the product of nature and nurture? Are we rigidly determined? *We are* the product of nature and nurture, but we are also an open system. Genes are all-pervasive but not all-powerful; people may defy their genetic bent to reproduce, by electing celibacy. Culture, too, is all-pervasive but not all-powerful; people may defy peer pressures and do the opposite of the expected. To excuse our failings by blaming our nature and nurture is what philosopher-novelist Jean-Paul Sartre called ‘bad faith’—attributing responsibility for one’s fate to bad genes or bad influences" (pp. 167-168).

The “open system” Myers speaks of in this paragraph is ambiguous. Systems imply lawful processes, yet if people are responsible and should not blame nature and nurture for their own behavior, is genuine intention a real cause of behavior? The problem, then, lies in that his scientific discussion of human behavior excludes genuine intention as causal. If his scientific account of behavior is supposed to be complete as far as scientists have learned, then genuine intention is excluded. This would then support a naturalistic interpretation of the ambiguous passages.

**Control.** Terms related to control, such as will, willpower, and self-control are treated similarly by all of the authors, and there is ambiguity within each text as to whether people are

able to exercise genuinely intentional self-control. For example, Gleitman, et al. (2007) assert that it is “almost certainly a mistake” to blame people for their obesity, because this perspective ignores environmental and genetic forces (p. 54). The authors admit, however, “People do have considerable control over what and how much they eat” (p. 54), and “each of us is far from a passive and helpless player on the social stage” (p. 511). It is not clear whether these terms are meant to indicate that genuine intention at least *partly* causes behavior. At any rate, the psychological account of behavior in the text does not indicate genuinely intentional self-control as a causal factor.

Zimbardo, et al. (2009) consider the idea of willpower to be “a simplistic and scientifically useless concept” (p. 411). The authors prefer the concept of self-control, “a cognitive resource [with a biological basis] that, like physical stamina, can become temporarily depleted” (pp. 418-419). Yet “a little conscious effort” can help people apply psychological principles in coping with problems (p. 650), and most people will not achieve what they potentially could, partly because of “an unwillingness to take the necessary risks” (p. 194). The authors also refer to but do not explain “the resilience of the human spirit” in rebounding from serious life setbacks (p. 288). What is meant by “conscious effort” and “unwillingness” is not explained. Whether or not people are able to control their behavior through genuine intentions could not be made much less clear than it is here.

Myers (2010) seems to agree that willpower is a limited resource: “Exercising willpower can deplete your mental energy,” though given attention and energy, one’s capacity for self-regulation can be developed through practice (p. 579). He asserts that “the recipe for success combines talent with grit” (p. 408) and cites research that shows self-discipline trumps talent as a predictor of success (p. 487). Further, using “the thinking high road” (as opposed to the

emotional low road which operates automatically) is supposed to allow people to “retake some control over [their] emotional life” (p. 507). The definitions of willpower, mental energy, self-regulation, grit, and self-discipline are not clear. The important question concerns whether or not genuine intention is thought to be a real cause of behavior. All related passages in the text (see Analysis 1) show that the psychological account of behavior ultimately leads to the naturalistic idea that laws govern all behaviors and that genuine choice is not causal. The context, then, supports a naturalistic interpretation of these meanings.

**Conclusion.** This analysis describes meanings of passages where terms regarding naturalism are mentioned in the texts but are contradictory or not explained. This ambiguity is important to understanding the meanings of naturalism in the introductory texts because it highlights conflicts between naturalism’s features and lived experience, such as when singular events are important or when people think they are making genuine choices. These ideas do not cohere with naturalism’s mandate of lawfulness, yet they are so important that it may be unsettling to dispense with them entirely. However, comparing these passages with related passages of scientific discourse in the texts shows that whether intended or not, their meanings ultimately lead to naturalism and support the idea of dogmatic naturalism in psychology.

#### **Analysis 4 – Overview**

Featuring a table for each text and a table to synthesize all of the texts, this overview will show where in the texts the passages were found that clearly reflected features of naturalism (see tables 1-4, Appendix) and the sub-areas of psychology corresponding to the chapters of the text. Recall that finding naturalistic meanings across the sub-areas of psychology would indicate naturalism’s pervasiveness in the discipline. In the table for each text (tables 1-3, Appendix), I plotted the subsections of text using numbers to represent the chapters and subsections (Myers’

introductory chapter is the only exception—because it is called a prologue, the designation is P rather than a chapter number). For example, 3.2 refers to the second subsection of chapter 3.

Though the subsections consist of actual subsections from the texts, the numbers should not be considered to represent the quantity of naturalistic passages in the texts. Recall that in reducing the data to a manageable level, passages were selected to represent subsections of text when they reflected the meanings of all the important points in the section, clearly showing the meanings of features and suitable for quoting in order to manifest these meanings. As a result, many other passages were excluded from the analyses. In fact, since those passages that were included are likely to be the *most* clear regarding naturalistic meanings, those not included may contain the most implicit naturalistic ideas. For these reasons, the numbers of subsections for each feature are more reflective of the method of data gathering than of the actual number of instances of each feature of naturalism. Instead, these tables reflect where in the texts—and across the subareas of psychology—the authors, without claiming to assume naturalism or its features, are nevertheless most clear about their naturalistic meanings.

Each subsection designation essentially reflects a passage of text selected to represent the sections of text in the order they appear within a chapter. Tables 5-7 show the chapter and section headings for the subsections plotted in tables 1-4. Some designations refer to more than one subsection heading. For example, 3.2 could be comprised of the actual second subsection of chapter three, or it could refer to the consolidated second, third, and fourth subsections of the chapter. The Gleitman, et al. (2007) text includes 68 subsection designations as shown in Table 1 (headings shown in Table 5), while the Myers (2010) text includes 59 as shown in Table 2 (headings shown in Table 6). The Zimbardo, et al. (2009) text includes 51 subsection designations as shown in Table 3 (headings shown in Table 7). The total number of subsection

designations is 178. Table 4 (appendix) is a synthesis of tables 1-3, and instead of numbers designating chapters and subsections, it plots the total number of these selected passages from the three texts falling within each block of the table. For example, Table 4 shows that half of the selected passages for all three texts combined (89 of 178) fall within the naturalistic feature of exclusion of purpose.

The tables show that in all three texts, there are similarities in the dispersion of the passages reflecting the more explicit meanings of naturalistic features. For example, in all three texts, half of the selected passages reflect the meanings of the naturalistic feature of exclusion of purpose. For each text, these passages are spread similarly across the sub-areas (see tables 1-4), filling virtually every available box. This indicates that for some reason, this feature of naturalism at least somewhat explicitly figures in the discussion of every sub-area. At the other extreme, few passages reflect meanings regarding rejection of the supernatural, indicating a lack of quotable passages for this feature. The supernatural as a necessary condition was neither included nor implied anywhere in the three texts, and where popular beliefs might include it, it was soundly marginalized in all three (see results for Analysis 2). This may indicate that exclusion of the supernatural is so taken for granted in psychology that the idea is rarely considered or acknowledged. Readers and even researchers may overlook the omission because the assumption is so implicit and unquestioned.

Another pattern, evident from Table 4, is that passages reflecting the meanings of all five features of naturalism are found within the Methods/Statistics sub-area of psychology. This suggests that the way the introductory texts describe the business of psychology is supported by a broad spectrum of naturalistic themes. Finally, the tables show that passages of text explicitly reflecting the meanings of the features of naturalism are found across the sub-areas of

psychology. Since these passages were selected from a large volume of quotable material reflecting naturalistic meanings in the texts, what is presented in this project may be similar to the tip of an iceberg. In addition to those other quotable passages not included in this analysis but reflecting naturalistic meanings, all of the less explicit, less quotable passages in the texts cohere with the meanings of naturalism in these selected passages. Thus the volume of implicit naturalism in the texts should be much greater than what is shown in the tables.

### **Conclusion**

The results of this project indicate that the philosophy of naturalism is pervasive across the introductory texts and sub-areas of psychology, and that the features of naturalism are often implicit, though they may be explicitly described. Opposing features of non-naturalism are not found. The psychological explanations found in the texts for the ambiguities discussed in Analysis 3 ultimately point to naturalistic meanings. Since the rest of the material in the texts casts these ideas naturalistically, it seems unlikely that non-naturalism is intended, but rather that the ambiguities reflect conflicts between naturalistic principles and lived experience.

The five features of naturalism are linked by the feature of Western rationality, which aims the efforts of psychological science toward the ends of prediction and control. The other features facilitate these goals by attempting to rid data of biases (objective-subjective dualism) and emphasizing replicable events that reveal regularities (lawfulness), pre-emptively excluding ideas that do not fit these parameters (purpose and the supernatural). Exclusion of purpose is clearly manifested in much of the text, though it is also implicit and ambiguous throughout, perhaps because the commonly accepted idea of genuine intention is not likely to reveal universal principles of behavior. The supernatural is not only rejected because it directly opposes



naturalistic principles, but it is also marginalized as an idea that impedes the progress of psychological science.

### **Discussion**

This project illuminates the conflict between two important claims: 1) Psychological science operates in an objective manner, revealing unbiased information about human phenomena, and 2) A biased and dogmatic philosophy undergirds psychological science so that neither its theories nor its findings can be objective. The results of the analyses of this project are consistent with the view that the philosophy of naturalism pervades psychological science, often implicitly. As such, the assumption of naturalism may be invisible to both students and professionals of psychology. Further, the results are consistent with the assertion of some scholars that all scientific investigations have underlying assumptions that should be recognized and explicated (e.g., Creswell & Plano Clark, 2007; Curd & Cover, 1998). These results also support the claim that naturalism is dogmatic in psychological science, with features of naturalism appearing in the text as authoritative and unquestioned assumptions. While the authors of the introductory texts call into question many theories, findings, and ideas, these challenges concern lack of adherence to the guiding assumptions and methods of naturalistic science. The naturalistic assumptions themselves are never disputed.

While some subdisciplines of psychology embrace weak versions of naturalism (e.g., many existentialists who assume the exclusion of the supernatural also assume genuine purpose), this analysis supports the idea that a strongly reductive naturalism is dogmatic in mainstream psychology. Not only is the supernatural rejected, but all of the reductive features included in this investigation pervade the texts. There is even evidence that the texts actively marginalized the ideas belonging to weak naturalism in favor of these reductive features (e.g., Gleitman, et al.,

2007, pp. 536, 581-585, 659; Myers, 2010, p. 567; Zimbardo, 2009, p. 341), so that only the strongest form of naturalism is presented as unquestioned in the discipline's settled assumptions. The implications include problems for those who profess a weak naturalism. For example, humanists such as Rychlak (2005) and constructionists such as Gergen (2009), who assume a genuine dialectic in human choice, would also appear to be marginalized within the discipline of psychology.

This strong naturalism and its implicitness are ubiquitous in the texts, the features neither directly expressed nor questioned. These findings suggest that naturalism mandates and sets preemptive limits on what is considered to be real, what can be studied, and how psychological research and practice are conducted. The implications of naturalism's unchallenged pervasiveness in these introductory psychology texts are broad and deep, underscoring the need to explicate the philosophy of naturalism so that students and professionals are not only clear about the tenets of their discipline, but also so that consumers of psychology understand the ground from which mainstream psychological findings arise. As these implications differ according to each of the features of naturalism, the features are discussed individually in the order that best facilitates the important themes. These concern various qualities and levels of implicitness, what students of psychology take away from their introductory experience, and ambiguities regarding naturalism (see Analysis 3).

### **Dualism**

At the deep end of implicitness is dualism, the idea of an objective reality that exists apart from subjectivity. It is assumed without question in the texts that good science produces objective knowledge—at least relatively free from biases and values. While the idea of bias-free objectivity may be widely received, it has been contested for many years for its conceptual

problems, such as how the two fundamentally different worlds can be related (e.g., Heidegger, 1926/2010; Ricoeur, 1965; Taylor, 1971). Because objective-subjective dualism is so deeply engrained in the underlying philosophy of naturalism, it may not be recognized as dualism, much less considered a problem. Yet for many non-dualists, it is a problem because they believe that so-called objective facts and methods are laden with values and can only be understood in light of those subjectivities (Slife, Reber, & Faulconer, 2012). Attempts to eliminate values and biases from methods and data may, in the end, result in ignorance of inherent values.

The received idea that psychological scientific methods are objective and produce objective data implies that both method and data are neutral to any philosophical position—that is, they do not take sides when it comes to opinions, beliefs, or allegiances of any kind. Scholars have called this the “myth of neutrality” because they believe humans are unable to invent unbiased and neutral methods or to produce unbiased data—in short, it is impossible for them to separate themselves from their biases (Slife & Whoolery, 2006). If philosophical neutrality is a myth and human activities are inherently biased, then psychological science cannot be an exception, and instructors are under obligation to explicate not only the myth, but also the values that do undergird psychological practice and research.

Unless professional psychologists understand these conceptual problems and the objective-subjective dualism implicit in their discipline, they will not be able to identify them or explain them to their students. It is even less likely that beginning students would be aware of the conceptual problems dualism entails, even while they learned to compartmentalize their own experiences and information into the dual order. Students would likely set aside what is considered subjective as inappropriate for scientific study and hold empirical scientific data in a superior position, one reserved for objective truth that can be reliably drawn from when making

decisions about the world. Therefore, efforts should be made to bring the assumption of dualism in psychological science from its deeply implicit position to the surface where it may be examined and explicated along with inherent biases in research and practice. Where assumptions are implicit in texts, the implicitness itself should be pointed out for students. Students need opportunities to examine these hidden ideas, practices, and values and think critically about them.

### **Exclusion of Purpose**

Only slightly less murky is the implicitness of the naturalistic feature of exclusion of purpose. Genuine purpose is missing from the scientific discussions in all three texts, but the authors never plainly state that genuine intention cannot be a causal factor in behavior or cognitive processes. There are various ways to interpret this implicit exclusion of purpose, and the implications differ for each interpretation. If, for example, the authors think that genuine intention may be causal but is not objective and therefore inappropriate for a scientific discussion, objective-subjective dualism is implied. Another interpretation might be that the authors do not think genuine intention is causal, but they must be cautious about introducing a concept that may be inflammatory to the general public, suggesting a manipulative implicitness. Still another interpretation, one that easily comes to mind on examining the ambiguities concerning purpose in the texts, is that the authors (and perhaps the discipline of psychology itself) are unsettled about the question and would rather not address it directly. In any of these cases, the beginning student is left to guess at the disciplinary principles concerning genuine intentions.

If the authors of these introductory texts mean to say that genuine intention may be causal but is inappropriate for psychological study, it is unclear how they expect a student to respond. Compartmentalizing is one idea, in which genuine intention is set aside as part of the subjective order to be excluded from psychological discourse. This is a problem if behavior *is* in any way

caused by genuine intention and this factor is left out of any aspect of the scientific account of behavior, including the design and interpretation of research. Trying to rid data of subjectivities would then impoverish reality, perhaps in ways critical to a better understanding of behavior. A student is not likely to be aware of this problem unless an instructor explains it.

If, on the other hand, the authors mean to say that genuine purpose is not causal, the implications loom large. There would be no such a thing as “bad” or “good” behavior, since behavior must proceed according to the laws that govern it. No longer could society justify punishment for any crime. Rather than face this problem, it might be tempting to stop short of making the claim that genuine intention is not causal. However, this implicitness is confusing to psychologists, students, and the general public. Rather than avoiding the question, psychological science should address it head-on and openly consider these implications. Introductory students should be made aware of the issue and know the disciplinary stance on genuine intentional causation. If there is none, this should also be made plain, and there should be no disciplinary repercussions against assuming that genuine intention is causal.

In light of the ambiguities regarding purpose (see Analysis 4), beginning students are likely to continue to view people as being responsible for their own behavior, and yet to view causation as stemming from lawful interactions of biological and environmental factors. They are likely to exclude genuine intention from psychological discourse without noticing the discrepancy in an account of behavior that holds responsible that which is not assumed to be causal. These ambiguities do not indicate a non-naturalistic representation in the introductory texts. Rather, they highlight the confusion concerning the issue and underscore the need to examine whether or not naturalism should be the underlying philosophy of psychology. In any

case, these ambiguities and implications should be explicated for beginning students so they can identify and think critically about them.

### **Rejection of the Supernatural**

Though a student may identify marginalization of the supernatural because it is explicit in the introductory texts, one would need to gather information from the scattered sections in order to form a reasonably clear picture of the extent of the marginalization. In addition, the authors do not explicitly state that no reasonable scientist accepts the supernatural, yet one may put together the sections of text in which the idea of the supernatural is explicitly marginalized and ascertain that they consider the idea to be a hindrance to scientific progress. The authors do not say that supernatural causation is always excluded from psychological explanations of any kind, though this is implied by its exclusion and by their suggested alternate explanations wherever popular opinion has attributed causation to the supernatural. If the supernatural is a common belief among beginning psychology students, it is possible that the authors do not wish to plainly state its pre-emptive dismissal. In this case, the complete exclusion of supernatural causation and scattered marginalization of the supernatural would indicate intentional and even manipulative implicitness.

Rather than assuming intentional manipulation, it may be best to assume ignorance of the implicitness and the implications. The APA Council of Representatives (2007, p. 3) claims to be neutral regarding religion. If psychologists, including the authors of the introductory texts, attempt to follow this mandate, then the explicit marginalization of the supernatural in the texts would not be an intentional prejudice against those who believe in the supernatural or in its being a necessary condition for real events. Instead, it may be a prejudice so implicit that those who manifest it are not aware of it.

According to Slife and Reber (2009), mainstream psychological science manifests implicit prejudice against theistic religion. Those who claim to be neutral regarding theism believe they are avoiding prejudice, when in fact, they “discriminate against theism in a host of ways, including not only the obvious omission of theistic considerations from psychology’s mainstream but also the more subtle discrediting of theism as a serious interpretive and explanatory framework” (Slife & Reber, 2009, p. 64). Excluding this perspective from mainstream psychology is not a minor issue, because many people in the world believe a supernatural power is involved in their lives in important ways (see Richards & Bergin, 2005). The texts’ marginalization of the supernatural may be a manifestation of implicit prejudice against these people.

What should introductory students take away from a reading of these texts concerning the supernatural? They may resort to a dualistic compartmentalizing in which the supernatural is simply not considered part of the objective world, and is therefore not appropriate for psychological science. At the other end of the spectrum, they may reject any notion of the supernatural as an impossible and naïve idea, even detrimental to the discovery of truth. These do not appear to be neutral positions, yet students are not likely to view themselves as being biased against those who practice religion and assume that the supernatural is at least a necessary condition for real events, because scientific disciplines are supposed to be unbiased. A scientific stance is supposed to be objective and free from biases. These texts may unwittingly perpetuate implicit religious bias.

It seems obvious that the possibility of this specific bias should be discussed openly—that beginning students deserve to know not only their discipline’s biases but also to be aware of their implications. If, for example, the supernatural is rejected from psychological science, then it

must be considered at best epiphenomenal, and students need to understand that this is a disciplinary tenet. They should also consider that if the supernatural *is* relevant, psychology's rejection of the supernatural limits its own findings, possibly leading to misinformation and ill-informed practices. Its bias against theistic religion, for example, could seriously limit the ways therapists are able to understand and reach clients. These implications should be made explicit for beginning students so they can have the information necessary to examine the tenets of their discipline.

### **Lawfulness**

The elements of the naturalistic feature of lawfulness are described explicitly in the introductory texts, yet a beginning student may have difficulty examining the extent of the meaning because different parts of text must be synthesized in order to understand what is not explicated. The authors indicate often that the goal of psychological science is to discover lawful principles—the more universal, the better. They do not say that only regular events merit explanation. While they include some anecdotal events—events in which behavior differs from what basic principles predict—this possibility of the importance of singular irregular events is mitigated by the authors' suggestions of principle-based hypotheses to explain these anecdotal events with the hope that in time, the laws governing all behavior may be discovered. That is, given the same lawful parameters, these events would also be replicable and regular. The idea that only regular events merit explanation is implied—in fact, one may also infer that all events are regular; they proceed according to natural laws. The authors do not plainly state that everything in the psychological account must be law-governed, although the scientific discussions in the texts include only that which is thought to adhere to laws.



Beginning students reading these texts are likely to assimilate the repeated ideas that only lawful phenomena are included as appropriate for study in psychological science's research and that research must be replicable to be considered scientific. Students may implicitly order the world, unaware themselves that by including some phenomena (regular events) and rejecting others (irregular events) as candidates for scientific study, they are viewing the world dualistically. They may not be aware that naturalism assumes all real events to be lawful—that each aspect of each occurrence in the world is considered to be governed by natural laws. The implications of this assumption are related to those of the features of exclusion of purpose and rejection of the supernatural. Clearly, genuine purpose and the supernatural cannot be causal if natural laws determine all things. Even if beginning students are able to articulate the assumption that laws govern all of nature, they may not completely understand the subsequent implications—that human behavior has no genuine purpose and that a supernatural God cannot be real. Since these implications are likely to be important to many students, it is important that instructors of beginning students explicate them.

### **Western Rationality**

The naturalistic feature of Western rationality is implicit even though its elements are described in the introductory texts. A reader must draw together these elements in order to understand the limits that naturalism places on psychological science. The authors explain often that psychological science favors objective (usually meaning quantitative) data, values replication and regularities, and aims to discover general laws that allow for prediction and control. They also assert that knowledge is only valid when it is obtained using a delimited set of tools following a specific method, and that this method is the only way to do scientific research. At the same time, the authors do not say that these stipulations and goals are accepted as givens

without scientific testing, nor that they limit *all* scientific study to observable, replicable phenomena.

Beginning students are unlikely to possess the sophistication to read between the lines to see how the specifications of Western rationality exclude consideration of genuine non-natural or unlawful phenomena. They are unlikely to question the assumption that non-observables must be forced into observable operationalizations whose meanings could be far removed from what is supposed to be under study. Students may not understand that their religious beliefs and experiences are considered to be epiphenomenal—based only on natural governing laws rather than on experience with genuine supernatural phenomena. They may simply compartmentalize these dualistically as existing outside the objective world of scientific research. Finally, they may not realize that before a psychological study begins or produces any data, the interpretation of the findings is already limited to natural, lawful, and non-purposeful explanations. Instead, students would likely accept the stipulations of Western rationality as givens—the only rational way to understand the world.

As with the other features of naturalism, beginning students will have difficulty recognizing, much less thinking critically about these assumptions without help from an instructor. They need to understand not only which tools they may use in their discipline, but also why other tools and methods are not allowed. Instructors should educate themselves about the assumptions and the alternatives so that they are in a position to help students to think critically about what they are studying. Without this kind of instruction, it is unlikely that students will have a clear concept of naturalism as a philosophy or even be aware that alternative philosophies exist.

## **Limitations**

This study is concerned with understanding how the parts of these introductory psychology texts reflect the wholes and how the texts reflect in some way the discipline to which they belong. While the three texts were analyzed in depth and do reflect what mainstream psychology teaches and assumes, there are many more texts, some of which may have substantial differences. For this reason, the reader should view the finding that naturalism is pervasive and dogmatic in psychology as a real and serious claim, but not as a broad assertion encompassing all of psychology. Rather, the reader might be apprised of this claim and hence be more aware of the possibilities and implications of naturalism in future psychological literary activities.

Because I began this project expecting to find naturalism in the introductory psychology texts, even my awareness of this expectation would not completely prevent expectancy bias. The pre-investigation contrasting a non-naturalistic culture with naturalistic ideas was helpful in providing a more concrete understanding of both naturalism and non-naturalism's manifestations so they could be fairly identified. In order to be open about areas where expectancy biases were likely to come to play, I have attempted to discuss as openly as possible any ambiguous passages (Analysis 4) so that the reader is able to make an informed judgment as to their naturalistic or non-naturalistic meanings.

Though biases are impossible to eradicate, I have attempted to be aware of and explain the values of this project to the reader and to be open to a rupturing of expectations. An example of this rupturing is the finding that in assembling ideas from different parts of a text, a fairly complete and explicit marginalization of the supernatural emerged. It was also surprising to note how implicitness varied both in quality and in level across the five features of naturalism. Another unexpected finding was the number of ambiguities concerning purpose. And perhaps the

biggest surprise of the investigation was that I did not find any of the non-naturalistic features accepted as part of psychological science.

Another limitation of this study is that I had inadequate data from which to surmise what beginning students might take away from their reading of the texts. While this could have been excluded from the discussion, it was included to raise awareness of possibilities because the implications are important. The reader of this study may have different ideas about what students' experiences might be, and clearly this issue is one for further study.

### **Further Research**

Investigating the actual take-away experiences of introductory psychology students in regards to naturalism may underscore important issues of concern for the discipline. Comparing these results to what instructors hope their beginning students learn in regards to naturalism may also be important. Still another need is to investigate the awareness instructors and students have of the implicit features in their texts. Since implicitness is a salient issue in this investigation and important to the claim that naturalism is dogmatic in psychology, the levels and qualities of the implicitness of these features need further study. Of special concern are the ideas of implicitness as manipulative and implicitness due to ignorance, because both suggest serious problems for a science.

Since it seems clear that naturalistic features prevail in these introductory psychology texts, it may be useful to examine other psychology texts to search for naturalistic and non-naturalistic features. Of particular interest is psychotherapy, since these features may directly impact this area of psychology in important ways. For instance, if treatments are closed to the possibility of the supernatural, a theistic client may sense that his or her beliefs are treated only as epiphenomenal and not taken seriously. In addition, a therapist who assumes that genuine

intention is not a cause of behavior may not view clients as agents responsible for their own choices, which is certain to impact the way therapy is practiced.

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## Appendix: Tables A1-A7

**TABLE A1 - GLEITMAN TEXT SUBSECTIONS BY FEATURE AND SUB-AREA (see Table A5 for headings)**

Sub-area of Psychology									
Feature of Naturalism	Method/ Statistics	Biopsychology/ Neuroscience	Learning/ Memory	Developmental	Personality	Social	Experimental	Psychopathology/ Treatment	Totals
Exclusion of Purpose	1.1	2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3	6.4, 7.1	10.4, 10.5, 11.3, 11.4, 11.5, 11.6	15.2, 15.4	13.3	12.2, 13.2, 5.3, 5.4, 8.2, 8.3, 8.5, 9.2, 14.4	16.1, 16.2, 16.3, 17.1, 17.2	33
Lawfulness	1.3, 1.4		6.1, 6.2, 6.3, 6.5, 6.6, 7.2, 7.3	10.1, 10.2, 11.2		12.1, 13.1	9.3		15
Exclusion of Supernatural									0
Dualism	1.2				15.3		4.1, 4.2, 4.3, 4.4, 8.1, 14.3		8
Western Rationality				10.3, 11.1	15.1		5.1, 5.2, 8.4, 9.1, 12.3, 12.4, 14.1, 14.2	17.3	12
Totals	4	7	9	11	4	5	22	6	68

**TABLE A2 - MYERS TEXT SUBSECTIONS BY FEATURE AND SUB-AREA (see Table A6 for headings)**

Sub-area of Psychology									
Feature of Naturalism	Method/ Statistics	Biopsychology/ Neuroscience	Learning/ Memory	Developmental	Personality	Social	Experimental	Psychopathology/ Treatment	Totals
Exclusion of Purpose	P.1, P.2	2.1, 2.2, 2.3, 4.1	7.1, 7.2, 8.1, 8.2	4.4, 5.3	13.3	16.1, 16.2	3.1, 3.4, 10.1, 10.3, 11.1, 11.2, 11.3, 11.5, 12.2, 12.3	14.1, 15.1, 15.4	28
Lawfulness	1.3, 1.4			5.2	13.2			15.3	5
Exclusion of Supernatural				5.1, 5.4			3.3		3
Dualism	1.1		8.4				6.1, 6.4, 6.5, 9.1, 10.2	15.2	8
Western Rationality	1.2	4.2	7.3, 8.3		13.1	4.3, 11.4, 16.3	3.2, 6.2, 6.3, 6.6, 9.2, 12.1	14.2	15
Totals	6	5	77	5	3	5	22	6	59

**TABLE A3 - ZIMBARDO TEXT SUBSECTIONS BY FEATURE AND SUB-AREA (see Table A7 for headings)**

Sub-area of Psychology									
Feature of Naturalism	Method/ Statistics	Biopsychology/ Neuroscience	Learning/ Memory	Developmental	Personality	Social	Experimental	Psychopathology/ Treatment	Totals
Exclusion of Purpose		2.2, 2.3	3.2, 3.3, 4.1, 4.2, 4.3, 4.4	6.2, 6.4	10.1, 10.3	11.2, 11.3	5.1, 5.2, 7.3, 9.2, 9.3, 9.4, 9.5, 14.1, 14.2, 14.3, 14.4	12.1, 13.3, 13.4	28
Lawfulness			3.1	6.3	10.2, 10.4	11.1	5.4, 5.5, 7.2		8
Exclusion of Supernatural	1.3							13.1	2
Dualism	1.1						5.3, 7.1	12.3, 13.2	5
Western Rationality	1.2	2.1		6.1			8.1, 8.2, 8.3, 9.1	12.2	8
Totals	3	3	7	4	4	3	20	7	51

Note: For tables A1-A3, first number represents chapter (or P for prologue). Second number represents subsection.

**TABLE A4 - COMBINED TEXTS NUMBER OF SUBSECTIONS BY FEATURE AND SUB-AREA**

Sub-area of Psychology									
Feature of Naturalism	Method/ Statistics	Biopsychology/ Neuroscience	Learning/ Memory	Developmental	Personality	Social	Experimental	Psychopathology/ Treatment	Totals
Exclusion of Purpose	3	13	12	10	5	7	28	11	89
Lawfulness	4		8	5	3	3	4	1	28
Exclusion of Supernatural	1			2			1	1	5
Dualism	3		1		1		13	3	21
Western Rationality	2	2	2	3	2	3	18	3	35
Totals	13	15	23	20	11	13	64	19	178



**TABLE A5 - CHAPTER AND SUBSECTION DESIGNATIONS FOR GLEITMAN, REISBERG, AND GROSS (2007) TEXT**

*Note:* Subsection number designations are included to facilitate organization in tables 1-4. Underlined terms indicate representative naturalistic/non-naturalistic features and sub-areas of psychology for each subsection. Chapter and subsection titles are from original text. Subsections are consolidated in cases of redundant or non-existent naturalistic or non-naturalistic meanings. There are 68 subsections for this text.

CHAPTER 1 Introduction p2	CHAPTER 4 Sensation p18
1.1 <u>purpose – Method/Stats</u>	4.1 <u>dualism - Experimental</u>
The Breadth of Psychology’s Content p4	The Origins of Knowledge p120
The Diversity of Psychology’s Perspectives p7	4.2 <u>dualism - Experimental</u>
1.2 <u>dualism – Methods/Stats</u>	Psychophysics p122
What is It That Unites Psychology? p12	4.3 <u>dualism - Experimental</u>
The Scientific Method p13	The Functioning of the Senses p127
Observational Studies p23	Hearing p129
Methodological Eclecticism p27	Vision p136
1.3 <u>lawfulness – Methods/Stats</u>	4.4 <u>dualism - Experimental</u>
Generalizing from Research p28	The Active Perceiver p152
Research Ethics p30	
1.4 <u>lawfulness – Methods/Stats</u>	CHAPTER 5 Perception p154
Some Final Thoughts: Science, Art, and the	5.1 <u>Western rationality - Experimental</u>
Individual p32	Distance Perception: Where Is It? p157
	Motion Perception: What Is It Doing? p161
CHAPTER 2 Evolution and the Biological Roots of	Form Perception: What Is It? p164
Behavior p38	Different Perspectives on Perception p169
2.1 <u>purpose – Biopsych</u>	The Classical Approach to Perception p170
The Evolutionary Roots of Motivated Behavior	5.2 <u>Western rationality - Experimental</u>
p40	The Process-Model Approach to Perception p176
2.2 <u>purpose - Biopsych</u>	The Neuroscience Approach to Perception p180
The Achievement of Homeostasis p46	5.3 <u>purpose - Experimental</u>
Eating p49	Perceptual Selection: Attention p184
2.3 <u>purpose - Biopsych</u>	5.4 <u>purpose - Experimental</u>
Threat and Aggression p56	Other Modalities p187
2.4 <u>purpose - Biopsych</u>	Seeing, Knowing, and the Perceiver’s Active Role
Sex p64	p188
Reflections on the Contribution of the Biological	
Perspective p75	CHAPTER 6 Learning p194
	6.1 <u>lawfulness – Learn/Mem</u>
CHAPTER 3 The Brain and the Nervous System p78	The Perspective of Learning Theory p196
3.1 <u>purpose - Biopsych</u>	6.2 <u>lawfulness – Learn/Mem</u>
The Organism as a Machine p80	Habituation p197
How the Nervous System is Studied p81	6.3 <u>lawfulness – Learn/Mem</u>
3.2 <u>purpose - Biopsych</u>	Classical Conditioning p198
The Architecture of the Nervous System p86	6.4 <u>purpose – Learn/Mem</u>
The Cortex p91	Instrumental Conditioning p209
The Origins of the Brain p97	6.5 <u>lawfulness – Learn/Mem</u>
The Building Blocks of the Nervous System p100	Varieties of Learning p222
Communication Among Neurons p102	6.6 <u>lawfulness – Learn/Mem</u>
Interactions Through the Bloodstream p111	The Neural Basis for Learning p227
3.3 <u>purpose - Biopsych</u>	Learning Theory and Beyond p228
Plasticity p113	
Should All Psychological Questions Have	
Biological Answers? p115	

## CHAPTER 7 Memory p232

7.1 purpose – Learn/Mem

Acquisition, Storage, Retrieval p234

Acquisition p235

Storage p245

Retrieval p246

7.2 lawfulness – Learn/Mem

When Memory Fails p248

7.3 lawfulness – Learn/Mem

Varieties of Memory p258

Different Types, But Common Principles p266

## CHAPTER 8 Thinking p270

8.1 dualism - Experimental

Analogical Representations p272

8.2 purpose - Experimental

Symbolic Representations p277

8.3 purpose - Experimental

The Process of Thinking: Solving Problems p280

8.4 Western rationality - Experimental

The Process of Thinking: Reasoning and Decision Making p290

8.5 purpose - Experimental

Executive Control p302

Consciousness p303

The Domains of Cognition p308

## CHAPTER 9 Language p312

9.1 Western rationality - Experimental

The Basic Units of Language p314

How Language Conveys Meaning p319

The Growth of Language in the Child p330

9.2 purpose - Experimental

Language Learning in Changed Environments p338

Language Learning with Changed Endowments p343

9.3 lawfulness - Experimental

Language and Thought p346

Some Final Thoughts: Language and Cognition p351

## CHAPTER 10 Cognitive Development p356

10.1 lawfulness - Developmental

Physical Development p358

Gene-Environment Interactions p360

10.2 lawfulness - Developmental

Cognitive Development p364

What is the Cognitive Starting Point? p367

10.3 Western rationality - Developmental

Cognitive Development in Preschoolers p375

10.4 purpose - Developmental

The Causes of Cognitive Growth p380

10.5 purpose - Developmental

Cognitive Development in Old Age p390

Maturation and Environment p392

## CHAPTER 11 Social Development p396

11.1 Western rationality - Developmental

The Path to Attachment p398

Attachment p399

11.2 lawfulness - Developmental

The Differences Among Children p401

11.3 purpose - Developmental

Parenting p409

Peer Relationships p412

11.4 purpose - Developmental

Emotional Development p414

11.5 purpose - Developmental

Moral Development p416

Sexual Development p421

11.6 purpose - Developmental

Development After Childhood p428

The Need for Multiple Perspectives p433

## CHAPTER 12 Social Cognition and Emotion p436

12.1 lawfulness - Social

Perceiving and Understanding Others p438

12.2 purpose - Social

Perceiving and Understanding Ourselves p447

12.3 Western rationality - Experimental

Attitudes p453

12.4 Western rationality - Experimental

Emotion p462

Cognition, Emotion, and Social Processes p474

## CHAPTER 13 Social Influences and Relationships p478

13.1 lawfulness - Social

Social Influence p480

13.2 purpose - Social

Group Dynamics p492

13.3 purpose - Social

Relationships p501

Final Thoughts: Situations, Construals, and Human Nature p511

## CHAPTER 14 Intelligence p516

14.1 Western rationality - Experimental

Mental Tests p518

Intelligence Testing p523

14.2 Western rationality - Experimental

What Is Intelligence? The Psychometric Approach p526

The Information-Processing Approach p531

14.3 dualism - Experimental

What Is Intelligence? Beyond IQ p533

14.4 purpose - Experimental

Nature, Nurture, and Intelligence p538

Scientific Evidence and Democratic Values p548

## CHAPTER 15 Personality p552

15.1 Western Rationality - Personality

The Trait Approach: Defining Our Differences  
p554

15.2 purpose - Personality

The Psychodynamic Approach: Probing the  
Depths p566

15.3 dualism - Personality

The Humanistic Approach: Appreciating Our  
Potential p581

15.4 purpose - Personality

The Social-Cognitive Approach: Seeing the Power  
of Construal p585

The Need for Multiple Approaches p590

## CHAPTER 16 Psychopathology p594

16.1 purpose – Psychopathology/Treatment

Different Conceptions of Mental Disorder p596

The Modern Conception of Mental Disorder p599

16.2 purpose – Psychopathology/Treatment

Classifying Mental Disorders p601

Schizophrenia p605

Mood Disorders p613

Anxiety Disorders p620

Dissociative Disorders p626

Developmental Disorders p628

16.3 purpose - Psychopathology/Treatment

Personality Disorders p630

Psychopathology and Physical Medicine p631

## CHAPTER 17 Treatment of Mental Disorders p634

17.1 purpose – Psychopathology/Treatment

Biomedical Therapies p636

17.2 purpose – Psychopathology/Treatment

Psychotherapies p642

17.3 Western rationality – Psychopathology/Treatment

Evaluating Therapeutic Outcome p657

Far, But Not Yet Far Enough p665

**TABLE A6 – CHAPTER AND SUBSECTION DESIGNATIONS FOR MYERS (2010) TEXT**

*Note:* Subsection number designations are included to facilitate organization in tables 1-4. Underlined terms indicate representative naturalistic/non-naturalistic features and sub-areas of psychology for each subsection. Chapter (including prologue) and subsection titles are from original text. Subsections are consolidated in cases of redundant or non-existent naturalistic or non-naturalistic meanings. There are 59 subsections for this text.

PROLOGUE p1	CHAPTER 4 Nature, Nurture, and Human Diversity p133
P.1 <u>purpose – Methods/Stats</u> What is Psychology? p2	4.1 <u>purpose – Biopsych</u> Behavior Genetics: Predicting Individual Differences p134
P.2 <u>purpose - Methods/Stats</u> Contemporary Psychology p6-12	4.2 <u>Western rationality – Biopsych</u> Evolutionary Psychology: Understanding Human Nature p143
CHAPTER 1 Thinking Critically with Psychological Science p15	Parents and Peers p149
1.1 <u>dualism – Methods/Stats</u> The Need for Psychological Science p15	4.3 <u>Western rationality - Social</u> Cultural Influences p153
1.2 <u>Western rationality – Methods/Stats</u> How do psychologists ask and answer questions p21	4.4 <u>purpose - Developmental</u> Gender Development p159
1.3 <u>lawfulness – Methods/Stats</u> Statistical reasoning in everyday life p33	Reflections on Nature and Nurture p166
1.4 <u>lawfulness – Methods/Stats</u> FAQ's p38	CHAPTER 5 Development Through the Life Span p173
CHAPTER 2 The Biology of Mind p47	5.1 <u>supernatural - Developmental</u> Prenatal Development and the Newborn p173
2.1 <u>purpose - Biopsych</u> Neural Communication p48	5.2 <u>lawfulness - Developmental</u> Infancy and Childhood p177
2.2 <u>purpose - Biopsych</u> Nervous System p55	5.3 <u>purpose – Developmental</u> Adolescence p196
The Endocrine System p58	5.4 <u>supernatural - Developmental</u> Adulthood p206
2.3 <u>purpose – Biopsych</u> The Brain p60	CHAPTER 6 Sensation & Perception p229
CHAPTER 3 Consciousness & the Two-Track Mind p85	6.1 <u>dualism - Experimental</u> Sensing the World: Some Basic Principles p230
3.1 <u>purpose - Experimental</u> The Brain and Consciousness p86	6.2 <u>Western rationality - Experimental</u> Vision p236
3.2 <u>Western rationality - Experimental</u> Sleep and Dreams p91	Hearing p245
3.3 <u>supernatural - Experimental</u> Hypnosis p108	6.3 <u>Western rationality - Experimental</u> Other Important Senses p252
Near Death experiences p126	6.4 <u>dualism – Experimental</u> Perceptual Organization p263
3.4 <u>purpose – Experimental</u> Drugs and consciousness p112	6.5 <u>dualism – Experimental</u> Perceptual Interpretation p272
	6.6 <u>Western rationality – Experimental</u> Is There Extrasensory Perception? p282

## CHAPTER 7 Learning p291

7.1 purpose – Learn/Mem

How Do We Learn p291

Classical Conditioning 294

7.2 purpose – Learn/Mem

Operant Conditioning p304

7.3 Western rationality – Learn/Mem

Learning by Observation p317

## CHAPTER 8 Memory p327

8.1 purpose – Learn/Mem

The Phenomenon of Memory p327

Studying Memory: Information-Processing Models  
p3288.2 purpose – Learn/Mem

Encoding: Getting Information In p330

Storage: Retaining Information p337

8.3 Western rationality - Learn/Mem

Retrieval: Getting Information Out p345

Forgetting p349

8.4 dualism – Learn/Mem

Memory Construction p356

Improving Memory p364

## CHAPTER 9 Thinking and Language p369

9.1 dualism – Experimental

Thinking p369

9.2 Western rationality - Experimental

Language p382

Thinking &amp; Language p391

Animal Thinking &amp; Language p395

## CHAPTER 10 Intelligence p405

10.1 purpose - Experimental

What Is Intelligence? p405

10.2 dualism - Experimental

Assessing Intelligence p415

10.3 purpose – Experimental

The Dynamics of Intelligence p422

Genetic and Environmental Influences on  
Intelligence p427

## CHAPTER 11 Motivation and Work, p443

11.1 purpose - Experimental

Motivational Concepts p444

11.2 purpose - Experimental

Hunger p465

11.3 purpose - Experimental

Sexual Motivation p465

11.4 Western rationality – Social

The Need to Belong p478

11.5 purpose - Experimental

Motivation at Work p481

CHAPTER 12: Emotions, Stress, and Health, pp497-  
55212.1 Western rationality – Experimental

Theories of Emotion p498

Embodied Emotion p499

Expressed Emotion p507

12.2 purpose - Experimental

Experienced Emotion p514

12.3 purpose - Experimental

Stress and Health p527

Promoting Health p538

## CHAPTER 13 Personality p553

13.1 Western rationality – Personality

The Psychoanalytic Perspective p554

The Humanistic Perspective p564

13.2 lawfulness – Personality

The Trait Perspective p567

13.3 purpose - Personality

The Social-Cognitive Perspective p576

Exploring the Self p584

## CHAPTER 14 Psychological Disorders p593

14.1 purpose - Psychopathology/Treatment

Perspectives on Psychological Disorders p594

14.2 Western rationality - Psychopathology/Treatment

Anxiety Disorders p601

Somatoform Disorders p608

Dissociative Disorders p609

Mood Disorders p611

Schizophrenia p621

Personality Disorders p628

Rates of Psychological Disorders p630

## CHAPTER 15 Therapy p637

- 15.1 purpose - Psychopathology/Treatment  
The Psychological Therapies p638
- 15.2 dualism - Psychopathology/Treatment  
Evaluating Psychotherapies p650
- 15.3 lawfulness - Psychopathology/Treatment  
The Biomedical Therapies p660
- 15.4 purpose - Psychopathology/Treatment  
Preventing Psychological Disorders p668

## CHAPTER 16: Social Psychology p673

- 16.1 purpose – Social  
Social Thinking p673
- 16.2 purpose - Social  
Social Influence p680
- 16.3 Western rationality – Social  
Social Relations p691

**TABLE A7 – CHAPTER AND SUBSECTION DESIGNATIONS FOR ZIMBARDO, JOHNSON, AND MCCANN (2009) TEXT**

*Note:* Subsection number designations are included to facilitate organization in tables 1-4. Underlined terms indicate representative naturalistic/non-naturalistic features and sub-areas of psychology for each subsection. Chapter and subsection titles are from original text. Subsections are consolidated in cases of redundant or non-existent naturalistic or non-naturalistic meanings. There are 51 subsections for this text.

CHAPTER 1 Mind, Behavior, and Psychological Science p4

- 1.1 dualism – Methods/Stats  
What is Psychology and What Is it Not? p4
- 1.2 Western rationality – Methods/Stats  
How Do Psychologists Develop New Knowledge? p11
- 1.3 supernatural – Methods/Stats  
What Are Psychology's Six Main Perspectives? p23

CHAPTER 2 Biopsychology, Neuroscience, and Human Nature p43

- 2.1 Western rationality – Biopsych  
How Are Genes and Behavior Linked? p46
- 2.2 purpose – Biopsych  
How Does the Body Communicate Internally? p53
- 2.3 purpose – Biopsych  
How Does the Brain Produce Behavior and Mental Processes? p65

CHAPTER 3 Learning and Human Nurture p90

- 3.1 lawfulness – Learn/Mem  
What Sort of Learning Does Classical Conditioning Explain? p94
- 3.2 purpose – Learn/Mem  
How Do We Learn New Behaviors by Operant Conditioning? p102
- 3.3 purpose – Learn/Mem  
How Does Cognitive Psychology Explain Learning? p115

CHAPTER 4 Memory p133

- 4.1 purpose – Learn/Mem  
What Is Memory? p135
- 4.2 purpose – Learn/Mem  
How Do We Form Memories? p139
- 4.3 purpose – Learn/Mem  
How Do We Retrieve Memories? p152
- 4.4 purpose – Learn/Mem  
Why Does Memory Sometimes Fail Us? p157

CHAPTER 5 Thinking and Intelligence p175

- 5.1 purpose – Experimental  
What Are the Components of Thought? p177
- 5.2 purpose – Experimental  
What Abilities Do Good Thinkers Possess? p185
- 5.3 dualism – Experimental  
How Is Intelligence Measured? p196
- 5.4 lawfulness – Experimental  
Is Intelligence One or Many Abilities? p205
- 5.5 lawfulness – Experimental  
How Do Psychologists Explain IQ Differences Among Groups? p213

CHAPTER 6 Development Over the Lifespan p299

- 6.1 Western rationality – Developmental  
What Innate Abilities Does the Infant Possess? p232
- 6.2 purpose – Developmental  
What Are the Developmental Tasks of Childhood? p243
- 6.3 lawfulness – Developmental  
What Changes Mark the Transition of Adolescence? p260
- 6.4 purpose - Developmental  
What Developmental Challenges Do Adults Face? p268

CHAPTER 7 Sensation and Perception p287

- 7.1 dualism - Experimental  
How Does Stimulation Become Sensation? p289
- 7.2 lawfulness – Experimental  
How Are the Senses Alike and How Different? p294
- 7.3 purpose – Experimental  
What Is the Relationship Between Sensation and Perception? p312

## CHAPTER 8 States of Consciousness p335

- 8.1 Western rationality – Experimental  
How Is Consciousness Related to Other Mental Processes? p337
- 8.2 Western rationality – Experimental  
What Cycles Occur in Everyday Consciousness? p344
- 8.3 Western rationality – Experimental  
What Other Forms Can Consciousness Take? p357

## CHAPTER 9 Emotion and Motivation p377

- 9.1 Western rationality – Experimental  
What Do Our Emotions Do for Us? p379
- 9.2 purpose – Experimental  
Where Do Our Emotions Come From? p383
- 9.3 purpose – Experimental  
How Much Control Do We Have Over Our Emotions? p392
- 9.4 purpose – Experimental  
Motivation: What Makes Us Act as We Do? p397
- 9.5 purpose – Experimental  
How Are Achievement, Hunger, and Sex Alike? Different? p404

## CHAPTER 10 Personality: Theories of the Whole Person p429

- 10.1 purpose – Personality  
What Forces Shape Our Personalities? p431
- 10.2 lawfulness – Personality  
What Persistent Patterns, or Dispositions, Make Up Our Personality? p435
- 10.3 purpose – Personality  
What Mental Processes Are at Work within Our Personalities? p443
- 10.4 lawfulness – Personality  
What “Theories” Do People Use to Understand Themselves and Others? p463

## CHAPTER 11 Social Psychology p477

- 11.1 lawfulness – Social  
How Does the Social Situation Affect Our Behavior? p479

11.2 purpose – Social

Constructing Social Reality: What Influences Our Judgments of Others? p499

11.3 purpose – Social

How Do Systems Create Situations that Influence Behavior? p515

## CHAPTER 12 Psychological Disorders p529

- 12.1 purpose – Psychotherapy/Treatment  
What Is Psychological Disorder? p531
- 12.2 Western rationality – Psychotherapy/Treatment  
How Are Psychological Disorders Classified in the DSM-IV? p538
- 12.3 dualism - Psychotherapy/Treatment  
What Are the Consequences of Labeling People? p558

## CHAPTER 13 Therapies for Psychological Disorders p569

- 13.1 supernatural – Psychotherapy/Treatment  
What Is Therapy? p571
- 13.2 dualism - Psychotherapy/Treatment  
How Do Psychologists Treat Psychological Disorders? p576
- 13.3 purpose – Psychotherapy/Treatment  
How Is the Biomedical Approach Used to Treat Psychological Disorders? p593
- 13.4 purpose - Psychotherapy/Treatment  
How Do the Psychological Therapies and Biomedical Therapies Compare? p602

## CHAPTER 14 Stress, Health, and Well-Being p615

- 14.1 purpose–Experimental  
What Causes Stress? p617
- 14.2 purpose–Experimental  
How Does Stress Affect Us Physically? p630
- 14.3 purpose–Experimental  
Who Is Most Vulnerable to Stress? p639
- 14.4 purpose–Experimental  
How Can We Reduce the Impact of Stress on Our Health? p64