Looking for Skinner and Finding Freud

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Sigmund Freud and B. F. Skinner are often seen as psychology's polar opposites. It seems this view is fallacious. Indeed, Freud and Skinner had many things in common, including basic assumptions shaped by positivism and determinism. More important, Skinner took a clear interest in psychoanalysis and wanted to be analyzed but was turned down. His views were influenced by Freud in many areas, such as dream symbolism, metaphor use, and defense mechanisms. Skinner drew direct parallels to Freud in his analyses of conscious versus unconscious control of behavior and of selection by consequences. He agreed with Freud regarding aspects of methodology and analyses of civilization. In his writings on human behavior, Skinner cited Freud more than any other author, and there is much clear evidence of Freud's impact on Skinner's thinking.

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Without two men, Sigmund Freud (1856–1939) and B. F. Skinner (1904–1990), the psychology of the 20th century would have looked very different. Freud and Skinner are found at, or very close to, the top of every list of influential or eminent psychologists (e.g., Haggbloom et al., 2002; Hoefer, Warnick, & Knapp, 2003). Though they both belonged to the universe of psychology, their home regions are often assumed to be so far apart that contact is virtually unthinkable. Skinner was an American behaviorist with his roots in animal experimenting and the functionalist tradition, whereas Freud was a continental European brought up on German philosophy and the budding medical science of the late 19th century.

Textbooks tend to concentrate on the differences between Skinner and Freud (e.g., Passer & Smith, 2004; Smith, Nolen-Hoeksema, Fredrickson, & Loftus, 2003), and Skinner has been dubbed "one of the least psychoanalytic thinkers in twentieth-century psychology" (Westen, 1997, p. 530). Other authors have also been unable to see that the two had anything whatsoever in common (e.g., Gardner, 1979; Stanovich, 1992). In outlining a system designed to unify psychology theoretically, Henriques (2003) used the Freudian and the Skinnerian perspectives as the two poles of his system—perspectives, he said, that "appear to be wholly incompatible," as "there is not currently [i.e., before Henriques's, 2003, own attempt] a way to blend the insights of the two together in a coherent fashion" (Henriques, 2003, p. 152).

Freud's research and Skinner's research were in different fields. To the extent that their domains overlapped, there are many obvious disagreements. However, behind the differences in theory, application, and terminology, a string of similarities between Freud and Skinner appears—some of which have seldom, if ever, been discussed.

Freud and Skinner would be expected a priori to have things in common. They are dead White men who were professors at first-rate Western universities, and for a period of almost 10 years, they were simultaneously active in psychological research. Though there is no evidence that Freud knew about Skinner, Skinner knew Freud's work quite well. Indeed, in his writings on human behavior, Skinner cited Freud more often than any other author (cf. Richelle, 1993). As we shall see, it seems very clear that many similarities were not coincidental. Skinner was influenced by Freud.

Psychoanalysis and Behaviorism

Years before Henriques (2003), Dollard and Miller (1950) made a well-known attempt to unite the outlooks of psychoanalysis and behaviorism—although the behaviorism that was the starting point of Dollard and Miller's group was not Skinner's radical version, but that of Clark L. Hull, which was different in many ways.

Attempts to integrate psychoanalysis and behaviorism did not start with Dollard and Miller (1950), however. As early as 1916, John B. Watson, the very first behaviorist, informed his readers that "I have been for some years an earnest student of Freud (and other psychoanalysts)," and "I am convinced of the truth of Freud's work" (Watson, 1916, pp. 589–590). Watson then proceeded to attempt a translation of what he saw as important psychoanalytical insights into other terms, on the basis of the conviction that the time had "come for describing 'mental diseases' wholly in terms of twisted habits" (Watson, 1916, p. 594).

In the same year that Dollard and Miller (1950) published their book, Mowrer (1950) also published a book interpreting Freudian concepts in terms of learning theory, claiming (among other things) that although trial-and-error problem solving is guided by the pleasure principle, the

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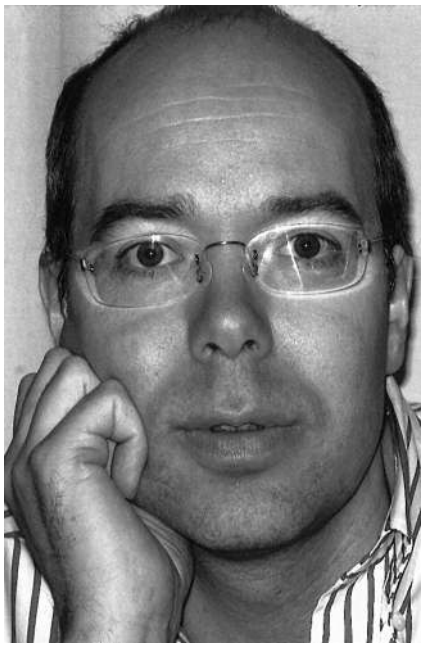

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reality principle is appropriate to classical conditioning—thus disagreeing with Dollard and Miller.

Hilgard's (1956) classic textbook on learning further underlined the fact that psychoanalysis was seen as acceptable, even interesting, by researchers close to or within behaviorism. Indeed, in his book, called *Theories of Learning*, Hilgard discussed theorists such as Thorndike, Guthrie, Skinner, Hull, Tolman—and Freud. In his chapter on Freud, Hilgard began by discussing correspondences between learning theories and psychoanalysis, pointing out the "resemblance between the tension-reduction interpretation of the law of effect . . . and the pleasure principle, with the caution, however, that learning theories have not fully incorporated the fantasy-production feature of the Freudian principle" (Hilgard, 1956, pp. 292–293). In a long and thorough discussion of Freudian concepts, Hilgard went on to state, among other things, that "the facts of amnesia . . . make abundantly clear that repression occurs . . . therefore experiments are not needed to establish the phenomena of repression" (Hilgard, 1956, p. 318).

Few psychologists worked more closely with Skinner than did Charles B. Ferster, their partnership culminating in the publication of *Schedules of Reinforcement* (Ferster & Skinner, 1957). Skinner (1981a) called theirs "a near-perfect collaboration, undoubtedly the high point in my life as a behavioral scientist" (p. 259). Ferster's career was dedicated to behavior analysis, the Skinnerian brand of behaviorism. Yet, he too took a considerable interest in psychoanalysis—to the extent of being psychoanalyzed himself, collaborating with psychoanalysts, and using behavioral theory to understand and extend psychodynamic concepts (see Ferster, n.d.).

Nevertheless, by his own account, Skinner seems unlikely to have been affected much by Freud or by any other psychologist for that matter. "I find it very difficult to incorporate anybody's thinking in psychology in my own. I almost never read any psychology," he said in an unpublished interview with psychologist Anne Roe (Roe, 1950, p. 16). However, Skinner read Freud, and as I discuss later, he incorporated some of Freud's thinking into his own.

Two Positivists

To understand Skinner, one must understand the environment in which his view of science was shaped. In an interview with his biographer, Daniel Bjork, Skinner maintained that his "intellectual genealogy" could be traced from Ernst Mach to Jacques Loeb to the Harvard physiologist William Crozier (Bjork, 1993, p. 65). Mach was an important figure in 19th-century physics, as well as in physiology and the philosophy of science. Not only did Mach make important insights and discoveries, he also opposed the atomic theory of physics. Because atoms were too small to be observed directly, the atomic hypothesis seemed to Mach unwarranted by experimental observations (see Kockelmans, 1968). The behaviorist attitude to mental representations seems related.

Loeb, a German physiologist who immigrated to the United States, was influenced by Mach, with whom he carried on an extended correspondence. Loeb was interested in the movement of the whole animal, not in the activity of its isolated parts, and he opposed the use of mentalistic language in the study of lower as well as higher organisms (e.g., Loeb, 1900). His account of animal movement was objectivist, mechanistic, and focused on the determinants rather than the meaning of the animal's behavior. Loeb's way of attacking physiological problems owed much to Mach's portrayal of scientific endeavor as the pursuit of tools for the control of life problems rather than a search for timeless truths (see Pauly, 1987).

In graduate school at Harvard University, the young Skinner found a mentor in the chairman of the new Department of Physiology, William Crozier (Vargas, 2004). Though Crozier never worked with Loeb, much of Crozier's early work was based on Loeb's contributions (Andersen, 2004). In Rachlin's (1995) view, Crozier was to Skinner what Jacques Loeb had been to John B. Watson, a source of support for a biologically based psychology divorced from introspection.

In 1912, a group of prominent scholars and scientists had decided to establish the *Gesellschaft für positivistische Philosophie*—the Society for Positivistic Philosophy. They marked the occasion by authoring a manifesto focusing on the unity of science by way of positivist philosophy and practice. Among the signatories was Albert Einstein, at the time a professor in Prague. More interesting to us, however, are three other signatory founders, namely, Skinner's two intellectual ancestors, Mach and Loeb, as well as one S. Freud, of Vienna (see Fulgêncio, 2000). Freud, in other words, shared with Skinner's two intellectual forefathers a view of himself as a positivist. Not unexpectedly, given his intellectual genealogy, Skinner through his entire career approached behavior, his subject matter, with a Machian-style positivist outlook.

It is no secret that Skinner and Freud, both positivists emphasizing that research should be empirically driven, still developed into fairly wild speculators. Indeed, even in what the two researchers regarded as their most important works, *Verbal Behavior* (Skinner, 1957) and *The Interpretation of Dreams* (Freud, 1900/1950), there are very few data to support the far-reaching conclusions drawn.

Consciousness and Civilization

Freud's and Skinner's careers followed much the same path, in the sense that after making a name for themselves in a limited area of psychology, they both moved on to analyze many aspects of language and the broad domain of civilization itself. They both took a rather bleak view of the way people treat their fellow humans and themselves, as seen, for example, in *Civilization and Its Discontents* (Freud, 1930/1961) and in *Beyond Freedom and Dignity* (Skinner, 1971) or "Why We Are Not Acting to Save the World" in *Upon Further Reflection* (Skinner, 1987). Freud and Skinner even emphasized the same basic causes of the human predicament: To a large extent, people are controlled by forces of which they are not conscious. Civilization creates conflicts between unconsciously controlled tendencies on the one hand and cultural rules and practices on the other. These conflicts are solved in ways that are far from optimal, and humanity may not adopt better solutions in the foreseeable future.

Those pondering the human condition (as well as many simply doing psychology) have long been aware that thinking and knowledge can reasonably be regarded as being of two main types: One kind that can be talked about and modified through argument and reason and another kind that is inaccessible to consciousness or at least difficult to access, but which may still exert powerful control over feelings and behavior.

Skinner (1969, pp. 169–171) discussed 16 classical pairs of terms relating to this fundamental difference. Following this tradition, Kahneman (2003; cf. Stanovich & West, 2000) spoke of System 1, called *intuition,* which he associated with fast, automatic, and emotional processing, and System 2, or *reasoning,* which is slow, rule governed, and neutral.

Freud and Skinner both acknowledged the existence of two different systems that govern behavior. They both described how the one may interfere with the functioning of the other and how the system operating outside of awareness may have a powerful effect on a person's thinking, feelings, and behavior, without the person necessarily understanding how and why.

Historically, many psychologists have emphasized the psychology of the conscious. As opposed to this, Skinner and Freud shared a strong emphasis on causes of behavior that tend not to be available to consciousness. The source of Skinner's insights into many areas of human behavior was his research on contingency-shaped behavior, that is, operant behavior shaped directly by its consequences, not by verbalizations or conscious thinking (e.g., Skinner, 1938, 1969).

There are clear and obvious differences between the unconscious realm described by Freud and that described by Skinner. However, an important element in Freud's psychology is his differentiation between the kind of cognition characteristic of the unconscious mind (i.e., primary process thinking) and the kind of cognition characteristic of the preconscious and the conscious mind (i.e., secondary process thinking). Primary process thinking is often irrational and motivated by the pleasure principle. Secondary process thinking attempts to achieve rationality and operates according to the reality principle, often resulting in delay of gratification (see Freud, 1900/1950, 1911/1958).

Skinner and Freud were in broad agreement when it came to describing the system that is primarily conscious. They agreed that it uses thinking to look for logical connections and that, to a great extent, the system operates verbally. Much of this is what Skinner (1969), in his analysis of problem solving, called rule-governed behavior, whereas Freud (1900/1950, 1911/1958), as described earlier, spoke of secondary process thinking. Skinner also shared Freud's assumption that conscious thinking exists to result in delay of gratification—an important point in Skinner's description of rule-governed behavior.

Notwithstanding the differences between Freud's and Skinner's unconscious, Skinner in many ways echoed Freud's description of primary and secondary processes in his description of rule-governed (conscious) and contingency-shaped (unconscious) behavior. According to Skinner (1969), even the distinction between surface and depth that is sometimes made in psychology can be reduced to that between rule-governed and contingency-shaped behavior: "Rule-governed behavior is superimposed upon men. It is the veneer of civilization. Depth psychology is concerned with the 'real' contingencies" (Skinner, 1969, p. 169). Skinner even drew direct parallels to psychoanalysis, pointing out, for instance, that "Freud assigned contingency-shaped behavior to the unconscious" (Skinner, 1969, p. 170). Trying to understand why Freud never stopped smoking, Skinner (1980) asked whether Freud might have felt a need "to acknowledge that the habit was 'bigger than he was'—that contingency-shaped behavior (the 'unconscious') prevailed against rule-governed ('the rational conscious mind')" (p. 341).

Rule-governed behavior may be behind at least one Freudian defense mechanism, said Skinner. He pointed out that a man may consciously believe he has understood the causes of his behavior. "He may be wrong, however; he may invent a set of variables. He is particularly likely to do so if the actual variables are grounds for punishment. This is rationalization in the Freudian sense" (Skinner, 1969, p. 165). Skinner's theoretical assertions regarding the effect of rules versus contingencies on human behavior have given rise to an increasing amount of research in recent years, and the field remains vigorous (e.g., Podlesnik & Chase, 2006; Torgrud, Holborn, & Zak, 2006).

Skinner and the Freudian Dynamisms

On a number of occasions, Skinner pointed to agreement between his and Freud's analyses of human behavior.

Moreover, Skinner acknowledged the quality of Freud's observations on a limited number of patients (cf. Richelle, 1993). Both Freud and Skinner preferred in-depth studies of individual organisms to methods averaging responding within or across groups.

Skinner (1957) also pointed out the similarity between his own explication of metaphor use in verbal behavior and Freud's analysis of symbols. For example, a musical composition can symbolize sexual behavior, in Skinner's view, "if it is reinforcing because of a similarity in temporal pattern and if it is emitted in place of such behavior because it is different enough to escape punishment" (Skinner, 1953, p. 293).

Even more interesting, perhaps, is the fact that when identifying the causes behind dream symbols, Skinner (1953) saw no critical difference between Freud's explanation and his own. "The principal realm of the symbol is the dream which occurs when we are asleep" (Skinner, 1953, p. 293). He continued, "Freud could demonstrate certain plausible relations between dream and variables in the life of the individual. The present analysis is in essential agreement with his interpretation" (Skinner, 1953, p. 293).

As already seen, Skinner felt that some types of behavior could be elucidated by appealing to defense mechanisms. Skinner (1953) also suggested that phobias may be caused by displaced fear (p. 362) and that religious zeal may stem from reaction formation (p. 357), as may any excessively vigorous behavior (p. 365).

Skinner (1953) made clear that his view of therapy was "quite different" (p. 375) from that of Freud. He went on, however, to discuss the effect of more defense mechanisms, and he did not attempt to hide that he saw these phenomena in ways that owed a lot to Freud.

Skinner (1953, p. 184) also claimed that central aspects of his own analysis of punishment concurred with the central Freudian concept of repression. Indeed, Skinner appears to have believed quite strongly in the reality of repression. In *Science and Human Behavior*, he discussed how repression may lead to denial (Skinner, 1953, p. 291). In *Verbal Behavior*, treating the phenomenon of automatic writing, he said this phenomenon "frequently suggests an escape from powerful repressing forces" (Skinner, 1957, p. 388).

Skinner did more than simply support such Freudian thinking, however. He wanted to measure whatever it was that escaped the repressing forces. In 1936, he described an invention called the *verbal summator* (Skinner, 1936), a phonograph repeatedly playing meaningless patterns of vowel sounds, "like speech heard through a wall" (Skinner, 1979, p. 175). The summator, he said, could be used in studying several aspects of verbal behavior, as well as functioning as a projective test. Verbal responding occasioned by the summator could be "'significant' in the Freudian sense. The patterns would be something like auditory inkblots" (Skinner, 1979, p. 175).

Around the time Skinner, then a junior fellow at Harvard, invented his auditory inkblot test, Henry Murray, of the Harvard Psychological Clinic, was busy developing another projective instrument, the Thematic Apperception Test (Morgan & Murray, 1935). Skinner contacted Murray, who was very supportive, and Skinner started gathering data by administering the summator at the Harvard clinic and later to patients at Worcester State Hospital (see Rutherford, 2003).

Skinner was not content, however, with gaining a little clinical understanding of psychodynamics by administering the verbal summator. He subjected himself to Rorschach testing and reported seeing things like "shark's fins," a "Greek mask of comedy," and "vaginal lips and vulva at the top, too" (Roe, n.d., p. 1). He also found he might profit from undergoing psychoanalysis himself. "My motives are complex," Skinner wrote, "but first among them is the belief that in extrapolating to human behavior (as I find myself doing more and more), I stand to gain from first hand experience with the Freudian point of view" (Skinner, n.d., cited in Rutherford, 2003, p. 374). In his autobiography, Skinner (1983) explained,

> I took a necessary first step by applying to the Boston Psychoanalytic Society and Institute. . . . I was interviewed by three analysts, one of them Helene Deutsch, but an unusually large number of applicants were being considered (the government were paying for analyses under the GI Bill of Rights), and a year or so later I was asked to withdraw my application. (p. 18)

Death of a Brother

In 1923, when Skinner was 19, he lost his only sibling—a younger brother with whom he did not get on very well. In 1950, he discussed his brother's death with Anne Roe. "I think I must have had feelings of guilt in the Freudian sense," he said (Roe, 1950, p. 1).

Some years later, Skinner (1967, p. 388) recounted the following:

> He proved to be much better at sport and more popular than I, and he teased me for my literary and artistic interests. When he died suddenly . . . I was not much moved. I probably felt guilty because I was not. I had once made an arrowhead from the top of a tin can . . . the arrow . . . struck my brother in the shoulder, drawing blood. I recalled the event with shock many years later when I heard Lawrence [sic] Olivier speaking Hamlet's lines:
>
> . . . . Let my disclaiming from a purpos'd evil
> Free me so far in your most generous thought,
> That I have shot mine arrow o'er the house,
> And hurt my brother.

In his 1953 book, Skinner suggested that studying sibling rivalry permits observations of several defense mechanisms. According to Skinner, these mechanisms may play a role in dealing with aggression arising from such rivalry. In Skinner's view, a man may support a philosophy of brotherly love, but because of reaction formation, he may actually injure his brother and rationalize it by claiming it was for the sibling's own good—or he may dream of killing someone who symbolizes his brother. He may identify with characters in a sadistic movie or in stories about men who injure or kill their brothers (Skinner, 1953, pp. 376–378). "He will be reinforced by such stories and will report this fact . . . by saying he 'enjoys' them" (Skinner, 1953, p. 378). Skinner went on to

catalogue several additional defense mechanisms, like displacement and projection.

Skinner (1953) also suggested, among other things, that because of repressed aggression, a person "may develop certain physical symptoms, especially when he is with his brother," and that "he may respond aggressively in a Freudian *slip*—for example, by saying, 'I never said I didn't hate my brother' instead of 'I never said I hated my brother'" (p. 378).

On the one hand, said Skinner (1953), reactions such as those above are "reasonable consequences" (p. 378) of early punishment of aggressive behavior toward a brother. On the other hand, he went on to underline that he had not swallowed Freud whole: Such Freudian dynamisms, he said, "are not the clever machinations of an aggressive impulse struggling to escape . . . restraining censorship . . . , but the resolution of complex sets of variables" (Skinner, 1953, p. 378).

Skinner's Flexibility

There is no doubt that in principle, Skinner was very skeptical about introducing unobservable variables into an explanation of behavior. In discussing specific problems, however, he was often rather flexible about this and referred repeatedly to inner way stations that cannot be observed directly (cf. Zuriff, 1979). Regarding Freud's psychology, Skinner went further, and it seems he sometimes came very close to accepting, at least for a while, central aspects of Freud's mental apparatus. For instance, Skinner (1953) mused,

> To what extent, for example, is the superego aware of the behavior of the id? The contingencies which set up the superego as a controlling system involve stimulation from the behavior of the id, but they do not necessarily establish responses of knowing about the behavior of the id. It is perhaps even less likely that the id will know about the superego. The ego can scarcely deal with conflicts between the other selves without responding to the behavior attributed to them, but this does not mean that the ego possesses a repertoire of knowing about such behavior in any other sense. (p. 288)

It does not seem that Skinner ever voiced any understanding for the hypothetical entities or processes used in cognitive psychology (like models of memory, perceptual mechanisms, decision-making processes) or for humanists' concepts of free will and authentic choice (e.g., Skinner, 1971, 1977, 1990; but see Overskeid, 1995). It seems clear by now, however, that Skinner regarded many of Freud's supposed mechanisms and entities with more sympathy.

In his last major theoretical article, Skinner (1981b) pointed to the importance of selection by consequences, not only in evolution, but also in the shaping of behavior and the progression of cultures. He contended that most psychologists had failed to grasp this principle but that "the three personae of psychoanalytic theory are in many respects close to our three levels of selection" (Skinner, 1981b, p. 504).

In *Science and Human Behavior,* Skinner (1953) underlined the importance of intellectual honesty, of the ability to accept facts even when they are opposed to one's wishes. When he wrote that book, the phenomenon of confirmation bias was already well known. It had been described by classic writers, such as Bacon (cf. Quinton, 1980) and Darwin (1887), and had been studied experimentally by Forer (1949) and Kelley (1950) among others. In discussing the phenomenon, Skinner (1953) still gave most of the credit to Freud: "Thoughtful men have perhaps always known that we are likely to see things as we want them instead of as they are, but thanks to Sigmund Freud we are today much more clearly aware of 'wishful thinking'" (p. 12). Perhaps not surprisingly, one of the few books Skinner publicly said he admired was E. B. Holt's (1915) *The Freudian Wish and Its Place in Ethics* (see Skinner, 1979, p. 102).

In an analysis that was not uncritical of Freud, Skinner (1954) still concluded that Freud made a "great contribution to Western thought" (p. 300). Furthermore,

> Freud demonstrated that many features of behavior hitherto unexplained—and often dismissed as hopelessly complex or obscure—could be shown to be the product of circumstances in the history of the individual. Many of the causal relationships he so convincingly demonstrated had been wholly unsuspected—unsuspected, in particular, by the very individuals whose behavior they controlled. Freud greatly reduced the sphere of accident and caprice in our considerations of human conduct. (Skinner, 1954, p. 300)

Conflict and Harmony

In histories of psychology, schools of thought are often important categories: One psychologist belonged to this group, and another was in that group. Good reasons often exist for such categorizing. Consider the fact, however, that the stereotypical view of psychoanalysts is quite different from that of radical behaviorists—and once a person is assigned a group membership, common assumptions about the group may color the way researchers see that individual (see Myers, 2005). This could affect the way psychologists see B. F. Skinner.

There is also evidence that people find negative phenomena, like conflict, more interesting than harmony. A survey of more than 17,000 research articles in psychology showed that 69% of the articles dealt with phenomena that were in some sense bad or problematic, conflicts among them, whereas 31% treated good or positive issues (Czapinski, 1985). Furthermore, once we have formed an opinion, the mechanisms collectively known as confirmation bias tend to strengthen that opinion, even if evidence exists that should cast doubt on it (see Nickerson, 1998). A preference for focusing more on conflicts than on harmony may also have affected the way we have seen the relation between Freud's and Skinner's psychologies.

Differences between Skinner and Freud have been emphasized to the extent that important similarities have disappeared from view. It thus seems a more nuanced account is called for—not just because we need to know how one important psychologist influenced another—but also because conflict, of which psychology has too much as it is, should not be allowed to dominate unduly our picture of history. Harmony, it appears, can sometimes be found where one might not expect it.

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