

Freudian Dream Theory, Dream Bizarreness, and the Disguise-Censor Controversy

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One particular area of contention in discussions of Freudian dream theory and its relation to the neuroscientific evidence is the notion of “disguise-censorship” and its relation to dream bizarreness. The discussion to date, however, has neglected the conceptual basis of repression and disguise-censorship, and this paper aims to clarify the role of repression in dreaming and its contribution to dream bizarreness. An analysis of disguise-censorship and repression reveals two competing accounts in Freud’s theory. Freud’s account of the “dream-censor”, acting as an agency intentionally disguising cognitive content, is found to be problematic. However, Freud’s alternative account of repression, in terms of cognitive inhibition instigated by motivational conflict, is developed and discussed in relation to neural inhibition. On this view, dream bizarreness arises, in part, through interdrive competition preventing direct expression of wishes and the subsequent formation of substitute aims. Resolution of certain contradictions and inconsistencies between the neurological evidence and Freudian dream theory is discussed.

One area where Freud’s theory is still actively debated is in the area of dream theory and its relation to the neuroscientific evidence. Although much of the dispute to date has concerned the relation of *rapid eye-movement* (REM) sleep and dreaming (see Hobson, 1999; McCarley, 1998; Solms, 1999, 2000a, 2000b), a key unresolved area of contention concerns “disguise-censorship”. Disguise-censorship is generally considered by those critical of Freud to be “the heart of Freudian dream theory” (Hobson, 1999, p. 170; cf. Hobson, 1988; Hobson & Pace-Schott, 1999). On this view, “the psychic censor acts to screen and block wishes unacceptable to consciousness” (McCarley & Hobson, 1977, p. 1218; cf. Domhoff, 2004, p. 11), and here it is claimed there is not “the faintest modicum of support” (Hobson, 1999, p. 157). Given this supposed centrality, these authors believe that if disguise-censorship is false then Freudian dream theory as a whole can be rejected:

After all is said and done, disguise-censorship is closer to the heart of the Freud–Solms dream model than wish-fulfilment. . . . The problem . . . is that if disguise-censorship is explicitly renounced . . . there is really nothing left to the Freudian dream theory. [Hobson & Pace-Schott, 1999, pp. 211–212]

Part of the dispute here arises in connection with explaining the bizarre characteristics of dreams. Ac-

ording to those critical of Freud, dreams are “bizarre because of the loss of the organizing capacity of the brain, not because of an elaborate disguise mechanism that rids an internal stimulus of an unacceptable meaning . . .” (Hobson & Pace-Schott, 1999, p. 211). These authors instead argue that dreams are not “disguised” but tend to be emotionally transparent (Hobson, 1988, 1999; Hobson & Pace-Schott, 1999; Hobson, Stickgold, & Pace-Schott, 1998; McCarley, 1998; cf. Braun, 1999; Domhoff, 2004).

On the other hand, some proponents of Freudian theory acknowledge the concept of “censorship”, but the notion holds a somewhat ambiguous position conceptually. This censoring activity is at times equated with the inhibitory functions of the mind related to the prefrontal divisions of the frontal lobes (ventromesial frontal cortex) (Solms, 1999, 2000b; Kaplan-Solms & Solms, 2000). However, whether a brain area associated with *inhibition* is synonymous with the “censor of dreams” is not entirely clear, and Braun (1999) claims that Solms’s defense of Freudian theory is lacking in this respect:

Solms never really addresses what Hobson refers to as “censorship and disguise,” and indeed seems to minimize these features in his discussion of Freud’s model. This represents a major failure in his argument (and his defence of Freud). [p. 199]

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In fact, Solms (2000b) also suggests that “the neuroscientific data do not seem to require the hypothesis of an active distorting agency” (p. 194; cf. Yu, 2001), and later Solms and Turnbull (2002) propose that regression to primary-process mentation alone may explain dream bizarreness:

The apparent illogicality and bizarreness of dreams may be due to the inherently “regressive” nature of the dream process. The mere fact that the system is forced to function in the way that it does, where the executive systems of the frontal lobes cannot program, regulate, and verify the output of the posterior forebrain, may well produce the difference between the latent and manifest contents—*with no need to introduce the additional function of censorship*. [p. 215, emphasis added]

Other psychoanalytic authors also tend to downplay the role of censorship in dreaming (e.g., Mancina, 1999) or distance themselves from the proposition of censorship altogether. For instance, Been (1997) claims that current psychoanalytic theory views “the dream as an integrated holistic narrative” that reveals rather than hides (p. 644). However, before discussing whether censorship occurs in dreaming, the important conceptual task involves clarifying exactly what is being referred to when discussing a “censor” or “censorship”. The aim of this paper is to clarify the role of repression in dreaming and its contribution to dream bizarreness. Freud’s “censor of dreams” metaphor is evaluated and demonstrated to be problematic. However, an alternative account of repression in Freud’s theory based on motivational conflict is discussed in relation to dreams and recent neuroscientific findings.

Freud’s theory of “censorship”

Freud first introduces the concept of censorship by comparing it to political oppression in late nineteenth-century Russia:

Have you ever seen a foreign newspaper which has passed Russian censorship at the frontier? Words, whole clauses and sentences are blacked out so that the rest becomes unintelligible. A *Russian censorship* of this kind comes about in psychoses and produces the apparently meaningless *deliria*. [Letter to Fliess dated 22 December 1897, in Masson, 1985, p. 289, emphasis in original; cf. Freud, 1900, p. 529]

We learn from Jacobus (1996) that this analogy pertains to a period in Russia where the ruling class prevented the populace from knowing foreign ideas considered by them to be threatening. Later, Freud compares the censorship to a “watchman,” barring access from one

room containing “the unconscious” wishes to another, “the preconscious,” where consciousness resides:

on the threshold between these two rooms a watchman performs his function: he examines the different mental impulses, acts as a censor, and will not admit them into the drawing room if they displease him. [Freud, 1916–17, p. 295]

Though obviously metaphorical and figurative, the same functional relation holds in Freud’s more technical metapsychological papers: “the rigorous censorship exercises its office at the point of transition from the *Ucs.* to the *Pcs.* (or *Cs.*)” (Freud, 1915c, p. 173; cf. Freud, 1900, pp. 177, 553, 617; 1915b, p. 153; 1915c, pp. 191–194; 1917, p. 225), and at times Freud indicates that there may be a second censorship between the *Pcs.* and *Cs.* (Freud, 1900, pp. 615, 617–618; 1915c, p. 191). This censorship also has a peculiar connection with dreams: “the censorship between the *Ucs.* and the *Pcs.*, the assumption of whose existence is positively forced upon us by dreams, deserves to be recognised and respected as the watchman of our mental health” (Freud, 1900, p. 567).

Freud’s use of metaphor and analogy when describing the mind’s workings is notoriously open to diverse interpretations. Gouws (2000) correctly remarks that Freud’s clearly metaphorical treatment of the censorship makes constructing a complete and coherent model difficult, and though he finds “Freud’s metaphor of the censorship irresistible . . . there are some major ambiguities, if not contradictions” (Gouws, 2000, p. 228). In particular, Freud appears to hold two seemingly contrary pictures of mind, one explicable in terms of mechanistic operations, the other in terms of agency and “persons” (Gouws, 2000; Grossman & Simon, 1969; Nagel, 1959; Sartre, 1956; Thalberg, 1982).

This matter is not made clearer by examining Freud’s choice of terminology. Freud most commonly uses the German word “*Zensur*” (“censorship”), referring either to the act of censoring or the censoring force, but on several occasions, though still relatively infrequently, he uses the personal or specific word “*Zensor*” (“censor”), suggesting that the censoring activity (“*Zensur*”) is the work of an agent, the censor (“*Zensor*”) (cf. Strachey, in Freud, 1914, p. 97n). This is apparent in the instances where both words for censor and censorship occur:

We know the self-observing agency as the ego-censor [*Zensor*], the conscience; it is this that exercises the dream-censorship [*Zensur*] during the night, from which the repressions of inadmissible wishful impulses proceed. [Freud, 1916–17, p. 429]

The censor, here, can be distinctly recognized as an

agency exercising a censoring activity. However, Freud also writes:

I hope you do not take the term [censorship] too anthropomorphically, and do not picture the “censor of dreams” as a severe little manikin or a spirit living in a closet in the brain and there discharging his office; but I hope too that you do not take the term in too “localizing” a sense, and do not think of a “brain-centre”, from which a censoring influence of this kind issues, an influence which would be brought to an end if the “centre” were damaged or removed. For the time being it is nothing more than a serviceable term for describing a dynamic relation. [Freud, 1916–17, p. 140]

On this view, the censor is merely one side of the repressing forces, or a description of a dynamic relation, a viewpoint similarly expressed by Jones:

considerable objection has been raised . . . to Freud’s use of the word Censor, but so far as I can see it is rather to the word than to the conception. It is not to be imagined that Freud understands by this term anything in the nature of a specific entity; to him it is nothing more nor less than a convenient expression to denote the *sum total of repressing inhibitions*. [Jones, in Wohlgenuth, 1923, p. 84, emphasis in original]

However, Jones is not consistent on this point either. He writes, concerning the “compartments” of the topographical systems: “There would appear to be a selective agency at work on which depends the admission of a given thought from one of the mental compartments to another” (Jones, 1949, p. 28). If this is *not* to be conceptualized as a “specific entity,” then the problem remains exactly how this “selective agency” should be understood.

Furthermore, Freud’s reference to a censoring “agency” is not translated from the German equivalent “*Agentur*” but, rather, “*Inстанz*”, a judicial term pertaining to a court of justice, as found in the phrase “a Court of First Instance” or court of primary jurisdiction (Strachey, in Freud, 1900, p. 537; Baumann, 1910). In relation to the censoring agency, this term implies an authority judging what is or is not permissible (cf. Laplanche & Pontalis, 1973, p. 16), and this is exactly the position presented in Freud’s “watchman” analogy (Freud, 1916–17, p. 295). Though the account is obviously metaphorical, it is clear that an *examining* function (the “watchman”) cognizes and evaluates other mental processes (impulses and desires) before either allowing or forbidding them. Furthermore, Freud indicates that the censorship is selective since “the censorship acts with varying intensity in each particular case, . . . [and] it treats each element of a dream with a different degree of severity” (Freud, 1916–17, p. 218). Additionally, this cognizing agency must, in fact,

be separate from the ego, since if it is to decide what may or may not pass into conscious awareness, it must know the material prior to, and independent of, the conscious knower:

[The study of dreams] enables us to detect the operation in the mind of a play of forces which was concealed from our conscious perception. We find that there is a “censorship”, a testing agency, at work in us, which decides whether an idea cropping up in the mind shall be allowed to reach consciousness, and which, so far as lies within its power, ruthlessly excludes anything that might produce or revive unpleasure. [Freud, 1913b, pp. 170–171; cf. Freud, 1932, p. 221]

However, the censoring agency is not only a cognizing subject. Freud’s metaphors clearly reflect the censoring agency as both *deliberate* and *strategic* in its actions since it “disguises” content before it reaches conscious awareness. To this end, the censoring agency deliberately changes appearances of the target into an acceptable form, independent of the ego’s reasoning: “the second agency (censorship) allows nothing to pass without exercising its rights and making such modification as it thinks fit in the thought which is seeking admission to consciousness” (Freud, 1900, p. 144). Thus, the censoring agency operates here as a sophisticated, *rational* agent, “having beliefs and desires and exercising rational capacities” (Gardner, 1993, p. 49; cf. De Sousa, 1976; Gouws, 2000); it must know which wishes and desires are forbidden and acceptable and also know appropriate strategies for censoring and distorting repressed material in such a way as to make the offensive material appear innocuous to the conscious system.

Variations and development of the censor

Freud’s censor is also at times equated with the superego [*Über-ich*], and Frank (1999), in fact, writes: “Originally, Freud did not have a concept of *Über-Ich* . . . ; he referred to a ‘censor’” (p. 448). This is apparent when Freud distinctly treats the superego as an active agent, with its own intentions and capable of cognition:

I might simply say that the special agency which I am beginning to distinguish in the ego is conscience. But it is more prudent to keep the agency as something independent and to suppose that conscience is one of its functions and that self-observation, which is an essential preliminary to the judging activity of conscience, is another of them. And since when we recognize that something has a separate existence we give it a name of its own, from this time forward I will describe this

agency in the ego as the “*super-ego*”. [Freud, 1933, p. 60, emphasis in original; cf. Freud, 1914, p. 95; 1916–17, pp. 428–429]

Subsequently, many endorse the view that the superego is a separate agency (e.g., Cohen, 1985; Eisnitz, 1980, 1991; Jacobson, 1965; O’Shaughnessy, 1999; Silberman, 1986), and some specifically equate the super-ego with the repressing agency (Cohen, 1985; Eisnitz, 1991; Sperling, 1958). In a similar fashion, others equate the censor with what Freud (1923) calls the “unconscious ego”, acting as an entirely separate agency from the “conscious ego” (Gillett, 1997, pp. 484–485; 2001, pp. 272–273):

The *conscious ego* concept I endorse is similar to that of a central executive, a familiar concept in cognitive psychology. The *unconscious ego* is also a central executive with functions limited to those required for the regulation of defence. I regard the conscious ego as distinct from the unconscious ego because it has no knowledge of the operations of the unconscious ego. Although both perform as “central executives,” I see no theoretical justification for assuming they are different aspects of a single system. [Gillett, 1997, p. 482, emphasis in original]

In further developments since Freud, the censor concept is often found under different terminology. For example, Sandler and Joffe (1969) posit a “scanning function” operating as a censor through evaluating material before it becomes conscious:

we can make use of the concept of a *scanning function* which operates to guide the apparatus to some sort of action. . . . This scanning function is the internal sense organ of the apparatus. It is part of the non-experiential realm, but a major part of its function is to scan the material of the experiential realm *before it reaches consciousness*. [Sandler & Joffe, 1969, p. 83, emphasis in original]

In fact, accounts proposing independent censors have proliferated in the psychoanalytic literature (e.g., Anspaugh, 1995, p. 428; Johnson, 1998, p. 304), prompting Gillett (1987) to write:

I believe that there is general agreement today that all mental contents must pass some kind of censorship before becoming conscious. Questions remain over the number and location of the censorships. [p. 540]

An example of multiple censors is the “two censorship” model of Sandler and Sandler (1983), which posits censors acting independently of, and protecting, the conscious knowing subject. What these accounts have in common is the view that independent of the ego is at least one cognizing, intentional agency screening

mental content before allowing it to become known by the ego, and this is the “censor of dreams” attacked variously by McCarley and Hobson (Hobson, 1988, 1999; Hobson & Pace-Schott, 1999; Hobson, Stickgold, & Pace-Schott, 1998; McCarley, 1998; McCarley & Hobson, 1977). Here the following scheme emerges: (i) a wish becomes known by the censoring agency prior to the ego knowing it (i.e., while it is technically unconscious); (ii), the censoring agency knows that the wish is either permissible or forbidden and desires to act as censor (here the censoring agency must have its own beliefs concerning what is or is not permissible, since it cannot be informed by the ego if the ego is to remain ignorant of the repressed—cf. Maze & Henry, 1996); (iii) if the wish is not permissible, then the censoring agency either (a) inhibits the wish such that it cannot become conscious (omission), or (b) disguises the wish, making it appear innocuous to the conscious system.

Insofar as the censoring agency is a cognising agency capable of knowing unconscious and conscious thoughts, it must have free access and be able to traverse all the sections of the mind. Furthermore, the censor must have a special capacity for transcending the need to sleep and remaining vigilant (“awake”) while the conscious system sleeps:

It has been shown that a part of the attention which operates during the day continues to be directed towards dreams during the state of sleep, that it keeps a check on them and criticizes them and reserves the power to interrupt them. It has seemed plausible to recognize in the mental agency which thus remains awake the censor [*“Zensor”*] to whom we have had to attribute such a powerful restricting influence upon the form taken by dreams. [Freud, 1900, p. 505, added 1914; cf. Freud, 1914, pp. 97–98; Hobson, 1988, p. 54]

Additionally, since the censoring agency is responsible for distorting mental content to deceive the conscious system, it must be capable of manipulating cognitive content. For example, Freud writes that the censoring agency creates “limitations and omissions in the dream-content” and “interpolations and additions to it” (Freud, 1900, p. 489; cf. Freud, 1933, p. 15). The censoring agency is even said to employ symbolism in order to disguise the forbidden content:

It is plausible to suppose, however, that the dream-censorship finds it convenient to make use of symbolism, since it leads towards the same end—the strangeness and incomprehensibility of dreams. [Freud, 1916–17, p. 168]

In this respect, the censoring agency “must have a greater capacity than any other part of the mind for (i)

representing the contents of other mental parts, and (ii) controlling mental events” (Gardner, 1993, p. 48). Hence, the censoring agency must be *superior* to the conscious system (or ego) and be a *transcendental agency*, standing above the different mental systems and traversing them at will (cf. Gardner, 1993; Sartre, 1956). The censoring agency can thus perform activities that no other part of the mind is capable of performing. Accordingly, the censoring agency is superior to the ego and equivalent to a transcendental, omnipotent figure inhabiting the mind.

Criticism and rejection of accounts proposing censoring agencies

Maze and Henry (1996) simply dismiss Freud’s theory here, since “we cannot believe in such knowing little internal men as the censor” (p. 1088). However, there are two questions, which, if adequately addressed, may provide a case for positing such an agency—namely, *what are the characteristics of the censor*; and *how does such a censor originate?* As a knower and doer, the censor must have its own qualities and characteristics, independent of the acts of knowing and censoring. The immediate problem here for Freud’s account of the censor is that it is metaphorical and without clear indication of what the metaphor exactly refers to. In fact, the only evidence for the censor is the act of censorship itself. Here Anspach (1998), following Sartre, argues that Freud’s account of the censor appears to reify censoring activity into an “autonomous consciousness”, solely inferred from the act of censoring: “to say that the unconscious drive is repressed by an agent of repression called the ‘censor’ amounts to no more than putting a name on the phenomenon to be explained” (Anspach, 1998, p. 67; or in Sartre’s words, “a mere verbal terminology”—Sartre, 1956, p. 53). That is, the censoring agency appears to simply be an *ad hoc* device invoked to explain censorship while no evidence is provided to characterize the censoring agency independently of the functions it is said to perform. One possible solution to this problem is to posit particular brain mechanisms (e.g., the prefrontal cortex) to characterize the censor. However, such a suggestion is problematic with respect to both the supposed superiority of the censor and discerning the origins of such an agency. Freud, for example, must explain how an agency that transcends the need to sleep originates within the personality. Such agencies cannot be present at birth without postulating that at the beginning of life there exists a sophisticated cognizing agency that is independent of the infant’s own primitive, developing

psyche. Neither is it clear how a superior agency could develop throughout the life cycle. Although introjected internal objects may be imbued with omnipotence, this fact alone does not explain how such internalized figures actually become so. Consequently, the “censor of dreams,” posited as a separate, superior agency, is implausible and should be rejected.

Freud’s alternative account of repression

Although the anthropomorphic censor account was prominent in Freud’s writings, particularly in relation to dreams, Freud provided a clear alternative account of repression that is both more parsimonious and consistent with his theory as a whole. This account of repression follows from a consideration of Freud’s theory of mental conflict and the instinctual drives. A fundamental element of the Freudian account of personality is the appreciation of the ubiquity of mental conflict in human life (cf. Brenner, 1994). Here the mind is pictured as an economy of competing motives attempting to find equilibrium. This motivational conflict is not between a censor and a forbidden impulse *per se*, but is described variously by Freud as a “volition . . . opposed by a counter-volition” (1900, p. 337), a “complication of motives” (1905a, p. 60), “opposing tendencies” (1909, p. 192; cf. 1905c, p. 267), or “two motive forces” (1900, p. 157). Neurotic symptoms represent compromises “between two mental currents” (1906, pp. 276–277) or “two opposing impulses” (1909, p. 192), the outcome determined by the relative strength of the impulses and their ability to dominate one another (1905b, p. 135; 1910a [1909], p. 50). This conflict is particularly evident in dreams:

When I have reconstructed the dream-thoughts, I habitually find the most intense psychical impulses in them striving to make themselves felt and struggling as a rule against others that are sharply opposed to them. [Freud, 1900, p. 467]

The Freudian account of anxiety dreams is similarly explained in terms of “counter-wish dreams” (1900, p. 157) where “the non-fulfilment of one wish meant the fulfilment of another” (1900, p. 151; cf. 1916–17, p. 219). Here, as Mackay (1996) makes explicit, wishes have negative variants, such as a desire for something *not* to occur, the latter translated into fear and hate of the object. Accordingly, anxiety in dreams is not *prima facie* evidence against the Freudian theory of wish-fulfilment, as has been claimed (Hobson, 1999; see also the remarks by Domhoff, 2004, in this respect), and the claim that “Freud was never able to deal with

the problem of bad dreams” (Hobson, 1999, p. 174) simply reflects a lack of serious research with regard to what Freud actually had to say on the matter (e.g., Freud, 1900, chap. 4; 1916–17, pp. 215–216; 1940, pp. 170–171). In fact, the claim that certain dream plots “all *satisfy* the driving emotion, anxiety . . .” (Hobson, Stickgold, & Pace-Schott, 1998, R3, emphasis added) could be taken to provide partial *prima facie* support here for Freud’s theory.

In Freud’s account these competing motives and impulses arise from independent “instincts”, translated from “*Trieb*” (which approximates as “drive,” although there is no single English equivalent). Freud’s editor Strachey translated this instead as “instinct”, a not unproblematic choice given the common usage of “instinct” to mean unmodifiable or stereotyped species-specific behavior patterns (Laplanche & Pontalis, 1973; Ritvo & Solnit, 1995), and Strachey himself states that “*Trieb*” has a greater sense of urgency than the English “instinct” (in Freud, 1920, p. 35n). The preferred translation here, following Maze (1983), McIntosh (1986), and Zepf (2001), is “instinctual drives”. “Instinctual” refers here to a biological or innate foundation, rather than to a “stereotyped” or “unmodifiable” character, and “drive” refers to an “impelling” factor, since the verb *treiben* means “to put in motion” (Baumann, 1910, p. 967).

Freud stipulates that instinctual drives must be identified by their somatic *source* to circumvent postulating instinctual drives *ad hoc* and *ad libitum* (Freud, 1915a, pp. 123–124; 1940, p. 148). Compared to the behaviors and cognitions emanating from the drives, “the source is relatively constant and is therefore the best qualified to serve as a basis for a classification of the instincts” (Bibring, 1969, p. 295; cf. Freud, 1933, p. 97). Incidentally, this circumvents Popper’s (1963) objection that psychoanalysis is unfalsifiable (or, conversely, Frank’s claim that drives “cannot be proven”—Frank, 1996, p. 422), since if the instinctual drives are defined physiologically, they are then, in principle, identifiable, and hence propositions concerning them are potentially falsifiable (i.e., they either do, or do not, exist). Although Freud’s (1920) life and death instincts account is problematic with respect to identifying physiological sources (see Maze, 1983, pp. 143–144), much physiological evidence exists for multiple motivational systems (Panksepp, 1999, 2001, 2003; Solms & Turnbull, 2002), including both “hunger” (Blundell & Hill, 1995) and “sexuality” (Bancroft, 1995) (cf. Freud’s early distinction between “hunger” and “love”—Freud, 1910b, p. 215). These motivational systems provide a physiological foundation for competing motives and psychological conflict.

The ego and repression

Somewhat paradoxically, some authors (e.g., Hobson, 1999; Hobson & Pace-Schott, 1999; McCarley & Hobson, 1977) use the failings of Freud’s “Project” (Freud, 1950 [1895]), unpublished during his lifetime, to reject Freudian dream theory. As mentioned earlier, these authors also attribute a central role in Freudian dream theory to the censor of dreams. However, Freud’s “Project” does not contain a “censor”. Rather the “ego” is said to initiate repression, and there is a clear line of thought in Freud’s work that puts forward the “ego” (*Ich*) as the instigator of repression (Freud, 1895, p. 269; 1896, p. 170; 1917, p. 233; 1923, p. 17; 1933, p. 57; 1950 [1895], p. 323). In Freud’s account (1923, 1940), the development of the ego occurs within a social context that is hostile to the expression of certain aims. The unsocialized infant may have a variety of desires and behaviors that are incompatible with the norms of socialization (e.g., aggressive and sexual aims) and are subject to punishment and withdrawal of the caregiver’s affection. Given the infant’s helplessness and need of parental protection, such impulses become associated with danger (Freud, 1933, p. 89; cf. Freud, 1926, pp. 137–138, 146–147, 166; 1939, pp. 116–117). This evaluation generates anxiety, which motivates repression of the offending wish. Freud considers repression to be a development of the “flight-reflex” away from threatening stimuli (Freud, 1923, p. 57; cf. Freud, 1900, p. 600; 1901, p. 147; 1905b, p. 175; 1911, p. 219). As a result of this attempt at flight, the threatening mental content is incapable of becoming known or reflected upon (i.e., incapable of becoming the object of a second mental act):

the essence of the process of repression lies, not in putting an end to, in annihilating, the idea which represents an instinct, but in preventing it from becoming conscious. [Freud, 1915c, p. 166]

Furthermore, repression also prevents acting upon the desire:

The rejection of the *idea* from the conscious is, however, obstinately maintained, because it entails abstinence from action, a motor fettering of the impulse. [Freud, 1915b, p. 157, emphasis in original]

From this ego proceeds the repressions, too, by means of which it is sought to exclude certain trends in the mind not merely from consciousness but also from other forms of effectiveness and activity. [Freud, 1923, p. 17]

Although the development of ego-psychology minimized the relation between the ego’s motivational

sources and the drives (e.g., Hartmann, 1950, 1958; Hartmann, Kris, & Loewenstein, 1949; Ritvo & Solnit, 1995; White, 1963), there is a view, following Freud (1923, 1940), that posits the ego as an extension of the drives (or id): “The ego is not sharply separated from the id; its lower portion merges into it” (Freud, 1923, p. 24; cf. Maze, 1983, 1987, 1993). Developing this view, the ego can be viewed as the dominating set of drive expressions, which emerges in competition with, and inhibiting (or repressing), those drive expressions that threaten the withdrawal of the parents’ affection (or are believed to lead to other forms of danger). Conceptually, the important point here is that repression involves a conflict between motivational systems and not between an impulse and a superior, transcendental censor. As Freud (1908) writes:

symptoms arise as a compromise between two opposite affective and instinctual impulses, of which one is attempting to bring to expression a component instinct or a constituent of the sexual constitution, and the other is attempting to suppress it. [p. 164]

As such, the protagonists of the conflict are *qualitatively* similar insofar as they reflect the activity of differing motivational systems.

Repression and neural inhibition

Repression in the “Project” is “described generally as *inhibition*”, operating by a mechanism of “side-cathexis” (Freud, 1950 [1895], p. 323, emphasis in original). In this respect, repression is comparable to a form of “impulse control” or behaviour inhibition (cf. Cunningham, 1924; Friedman & Miyake, 2004; Harris, 1950; Smith, 1992), initiated by one drive’s anxiety response to another drive’s wish (rather than proceeding from an executive agent, like a censor). Freud’s conceptualization of side-cathexis, however, is neither logically coherent (Maze, 1983) nor empirically supported (McCarley, 1998). The concept of *inhibition*, though, is an important concept in neuroscientific research and theory (see Clark, 1996; Houghton & Tipper, 1996; Nigg, 2000; Smith, 1992), and although Freud’s claim concerning the neural substrate of repression in the “Project” is problematic, it is not fatal to the Freudian account since other neural mechanisms could feasibly explain repression. For instance, there is evidence of “selective inhibitory processes” and mechanisms preventing degrees of awareness (see Brass, Derrfuss, & von Cramon, 2005; Clark, 1996; Fox, Henderson, Marshall, Nichols, & Ghera, 2005; Houghton & Tipper, 1996), and a variety of brain areas are implicated in this respect (see Nigg, 2000, 2001), and different varieties

of inhibition appear to have different neural correlates depending upon the target of inhibition (Nigg, Butler, Huang-Pollock, & Henderson, 2002). Following Maze and Henry (1996), one such mechanism proposes that repression is mediated by neural inhibition consequent on intense anxiety and comparable to a “reversible lesion” (cf. Epstein, 1998, p. 505), preventing a wish from being known and acted upon. Such an account is not incompatible with Solms’s conception of inhibition (Solms, 1999, 2000b) and has the advantage of providing a tangible approach to understanding psychodynamics in relation to recent neuroscientific findings.

Inhibition of aims and dream bizarreness

Rather than an active censor deliberately disguising and distorting dream content, the present account of repression explains dream bizarreness in terms of inhibition of aims and substitute satisfactions. In Freud’s view, the ultimate aim of drives is satisfaction, although the conditions and means necessary for satisfaction vary (Freud, 1915a, p. 122). The aims that are believed to be the most direct route to satisfaction may be considered the *primary aims* or objects of the instinctual drive (cf. Petocz, 1999). However, since these primary aims may lead to punishment, they may be repressed out of anxiety, with substitute secondary aims forming as compromise routes to satisfaction: “The instinctual demands forced away from direct satisfaction are compelled to enter on new paths leading to substitutive satisfaction . . .” (Freud, 1940, p. 201; cf. Freud, 1920, p. 11). Here, since direct expression is prevented, indirect expressions become the *modus operandi* of the motivational system in question. For instance, a child’s wish to harm a younger sibling may be repressed, since it may lead to a loss of the caregiver’s affection. However, if the desire to harm persists, it may be replaced by an indirect expression, such as a desire to hurt animals, or other substitute objects for the primary target (cf. the Rat Man’s hostility towards his brother substituting for hostility towards his father—Freud, 1909). If this substitute wish is also evaluated as a threat in a similar manner to the primary aim (i.e., it is also believed to lead to loss), then it may also be subject to further repression. Consequently, an ensuing struggle emerges:

The instinctual desire is constantly shifting in order to escape from the *impasse* and endeavors to find substitutes—substitute objects and substitute acts—in place of the prohibited ones. In consequence of this, the prohibition itself shifts about as well, and extends to any new aims which the forbidden impulse may adopt. Any fresh advance made by the repressed libido

is answered by a fresh sharpening of the prohibition. Freud, 1913a, p. 30]

If so, even more remote expressions of the wish might develop (for instance, extending the example above, a game involving a mock battle between toy soldiers reflecting both sides of the conflict). On the other hand, if the indirect expressions are not evaluated as threats, then this may possibly become the dominant expression of the particular drive in question, replacing the original desire. In any case, the degree of distortion is determined by threat evaluation, and, depending upon the degree of anxiety in response to substitute aims, the associative connection between the indirect expression and the repressed material may no longer be apparent.

In terms of dreams, the apparent bizarreness could result not from a censor deliberately disguising content, but, instead, from inhibition of direct drive expressions consequent on threat, and the formation of substitute aims. An overly simplistic, linear scheme for understanding such repressive inhibition within dreams can hence be presented as follows: There is a desire that p is inhibited and prevented from direct expression due to threat. A substitute q , based on learned association, forms as an indirect, substitute expression. If this, in turn, is also perceived as a threat, then r , also based on association, may form, and so on, until an indirect expression forms that satisfies both the frustrated drive (albeit not to the extent of the primary aim) and the threatened drive, resulting in the formation of a compromise. Depending on the remoteness to the original aim, the final form of the dream-wish may share little obvious connection with the primary aim that it substitutes.

However, as others point out (e.g., Yu, 2001; Solms, 1999), Freud did not claim that repression was the only factor contributing to dream distortion, as some of Freud's critics seem to suggest (e.g., Hobson, 1988; Hobson & Pace-Schott, 1999). According to Freud, dreams reflect a regression to primary-process thinking and, as such, are subject to primitive associations and visual representation, which also distorts the underlying thoughts (Freud, 1900, pp. 534, 598; 1905a, p. 61; 1915c, p. 186; 1916–17, pp. 180, 213; 1940, pp. 168–169). Accordingly, Freud writes, “even if the dream-censorship was out of action we should still not be in a position to understand dreams, the manifest dream would still not be identical with the latent dream-thoughts” (1916–17, p. 149). In fact, since in Freud's account primary-process mentation involves displacement and condensation, where associations “are much more mobile” (1915c, p. 186), the finding that “all dreams are hyperassociative” (Hobson & Pace-Schott,

1999, p. 207) actually provides some support for Freud here. However, whether repressive inhibition contributes to dream bizarreness is an empirical question, one that can be answered, in part, from a consideration of the neuroscientific debate.

Some implications for Freudian dream theory and the neuroscientific debate

This analysis has several important implications for the neuroscientific debate concerning Freudian dream theory and disguise-censorship. To begin with, this analysis clarifies an apparent internal contradiction—which Braun (1999) draws attention to—in Solms's neurological model. Solms equates the ventromedial frontal cortex with “executive inhibition . . . of which censorship is a special variety” (Solms, 1999, p. 192; cf. Kaplan-Solms & Solms, 2000, pp. 230–231). The problem here, according to Braun (1999), is that the ventromedial frontal cortex is said to be both the “censoring” part of the brain while also constituting the area of the brain involved with “wishes”: “It seems odd that he [Solms] places the seat of the appetitive drives and craving in the same tissue as the behavioural censor” (Braun, 1999, p. 200). Thus, Braun believes that there is a contradiction here, since “censoring” and “motivation” should be physiologically distinct. However, as the account of repression presented here demonstrates, a relationship between motivation and “censoring” (inhibiting) would, in fact, be predicted. Repression involves motivational conflict, not a distinct “censor”, and “censoring” is just as motivationally driven as the “forbidden wish” (i.e., there is no difference in kind between a wish that p occur and a wish that p not occur). In fact, since inhibition occurs in relation to motivational conflict, it would be expected that the areas of the brain associated with inhibition would also be areas associated with motivation. Solms is accordingly justified in making such a connection.

Furthermore, the analysis of repression as inhibition clarifies the relation of some neurological findings taken as evidence against Freudian theory. For the most part, the criticisms of Freudian dream theory have directly attacked the “censor of dreams” and have little or no bearing on Freud's alternative account of repression as inhibition. For example, Hobson and Pace-Schott (1999) claim:

The hypothetical censor, which makes fine distinctions between acceptable and unacceptable wishes, is imbued by psychoanalysts with powers incompatible with its hypothesized weakened condition in sleep especially given the now replicated relative inactivity

of executive frontal areas in both REM and NREM sleep. [p. 208]

That is, according to Hobson and Pace-Schott, the “relative inactivity of executive frontal lobes” provides no justification for positing the hypothetical censor, which, as demonstrated earlier, is viewed as a superior, transcendental agency within the mind. However, having rejected this hypothetical censor on logical grounds, there is no contradiction between the reported finding of “relative inactivity of executive frontal areas” and Freud’s alternative account of repression in terms of inhibition (and its extension, neural inhibition), although evidence of *no* inhibition would be problematic for the account of repression here. As the last part of the quote indicates, the “*relative* inactivity of the executive frontal areas” is consistent with Freud’s view that repression or inhibition still occurs during sleep but is diminished (Freud, 1900, pp. 542, 567–568; 1932, p. 221; cf. Solms & Turnbull, 2002, p. 214).

As a final point, although the possibility remains that dream bizarreness could be explained in terms of primary-process mentation alone, there are good reasons to suspect that dynamic factors also contribute to the content of dreams. In fact, it is not disputed, even by those critical of Freud, that motivational conflict contributes to dreams:

For the activation-synthesis theorist, conflict may enter into the plot construction of a dream. But conflict is only one of several factors used in constructing a dream plot and, as such, is neither necessary nor sufficient to account for the dream-fabrication process, as Freud assumed. [Hobson, 1988, p. 219]

As noted earlier, Freud did not claim that conflict was either necessary or sufficient for distortion, since dreams also reflect primary-process mentation. However, if motivational conflict does shape the dream, in any part, then there is a tentative basis for the Freudian account. Moreover, there is relevant neurological evidence as well. The basal ganglia, which are clearly implicated in both REM and NREM stages of sleeping (Braun et al., 1997; Hobson, 1999; Hobson, Stickgold, & Pace-Schott, 1998), are postulated as a behaviour-mediating device, acting as a noncognitive mechanism mediating “the competition between incompatible inputs” (Redgrave, Prescott, & Gurney, 1999, p. 1016; cf. Kawagoe, Takikawa, & Hikosaka, 2004; Prescott, Redgrave, & Gurney, 1999). That is, the basal ganglia may be instrumental in the inhibition of some responses while allowing others to occur, such as would occur in motivational conflict and repression. Furthermore, since repression typically targets knowledge and memory of motivationally and emotionally relevant stimuli

(i.e., threatening desires), the areas of the brain relevant to emotional processing should also be implicated in dreaming. The amygdala—which according to Hobson et al. is clearly implicated in dreaming (Hobson, 1999, 2004; Hobson, Stickgold & Pace-Schott, 1998)—is particularly significant here, since it is involved in both fear and appetitive conditioning (Holland & Gallagher, 2003; Lindgren, Gallagher, & Holland, 2003) and “is probably the structure most implicated in emotional processing” (Cardinal, Parkinson, Hall, & Everitt, 2002, p. 328; see also Blundell, Hall, & Killcross, 2001; Grelotti, Gauthier, & Schultz, 2002; Kalavas & Nakamura, 1999; Lindgren, Gallagher, & Holland, 2003; Parkinson et al., 2001; Phillips, Ahn, & Howland, 2003; Stern & Passingham, 1996). Accordingly, the neural correlates that would be expected to be involved in repression are implicated in dreaming, providing a tentative basis for the Freudian account.

The aim of this paper was to clarify the role of repression in dreaming and its contribution to dream bizarreness. Although the neurological findings presented above provide only tentative support, the evidence, far from contradicting the Freudian account of repressive inhibition, is clearly in the expected direction of a neuro-psychodynamic model of dreams. Accordingly, it is possible to claim, following Solms (2000b), that “the neuroscientific data do not seem to require the hypothesis of an active distorting agency” (p. 194; cf. Yu, 2001) without contradicting the claim that repression, as inhibition, contributes to dream distortion.

Summary

A key unresolved area of contention in the debate concerning Freudian dream theory and its relation to the neuroscientific evidence involves the notion of “disguise-censorship” and its contribution to dream bizarreness. One reason for the lack of resolve is that the precise meaning of “censor” and “censorship” in Freudian theory is ambiguous. Freud’s metaphor of the “censor of dreams”, which distorts and censors impulses and wishes before allowing these to be known by the ego, entails a censoring agency standing prior to the ego and determining what can and cannot become conscious. This account should be rejected since no evidence is provided to characterize the censoring agency independently of the functions it performs, and the origins of such a superordinate, transcendental agency are inexplicable. However, Freud provides an alternative account of repression based on motivational conflict, which is both more parsimonious and consistent with his theory as a whole. Repression here can be conceived

of in terms of repressive inhibition, mediated by neural inhibition, which prevents wishes from being known and acted upon. Conceptualizing repression in these terms fleshes out the “censor” metaphor and provides a tangible approach to understanding psychodynamics. Viewed in this manner, dream bizarreness results from both primary-process mentation and the inhibition of direct drive expressions, leading to the formation of substitute aims. After comparing this account of repression with the neuroscientific evidence, there is tentative support for repressive inhibition contributing to the bizarre character of dreams.

REFERENCES

- Anspach, M. R. (1998). Madness and the divided self: Esquirol, Sartre, Bateson. In: *Self-Deception and Paradoxes of Rationality*, ed. J.-P. Dupuy. Stanford, CA: CSLI Publications, pp. 59–86.
- Anspaugh, K. (1995). Repression or suppression? Freud’s interpretation of the dreams of Irma’s injection. *Psychoanalytic Review*, 82: 427–441.
- Bancroft, J. (1995). Sexual motivation & behaviour. In: *Emotion and Motivation*, ed. B. Parkinson & A. M. Colman. London: Longman, pp. 58–75.
- Baumann, H. (1910). *Muret-Sanders Encyclopaedic English–German and German–English Dictionary, Part 2*. Berlin: Langenscheidtsche Verlagsbuchhandlung.
- Been, H. (1997). Dreams: The convergence of neurobiologic and psychoanalytic perspectives. *Journal of the American Academy of Psychoanalysis*, 25: 639–654.
- Bibring, E. (1969). The development and problems of the theory of the instincts. *International Journal of Psychoanalysis*, 50: 293–308.
- Blundell, J. E., & Hill, A. J. (1995). Hunger & appetite. In: *Emotion and Motivation*, ed. B. Parkinson & A. M. Colman. London: Longman, pp. 22–37.
- Blundell, P., Hall, G., & Killcross, S. (2001). Lesions of the basolateral amygdala disrupt selective aspects of reinforcer representation in rats. *Journal of Neuroscience*, 21: 9018–9026.
- Brass, M., Derrfuss, J., & von Cramon, Y. (2005). The inhibition of imitative and overlearned responses: A functional double dissociation. *Neuropsychologia*, 43: 89–98.
- Braun, A. (1999). Commentary on “The New Neuropsychology of Sleep: Implications for Psychoanalysis.” *Neuro-Psychoanalysis*, 1: 196–201.
- Braun, A. R., Balkin, T. J., Wesensten, N. J., Carson, R. E., Varga, M., Baldwin, P., Selbie, S., Belenky, G., & Herscovitch, P. (1997). Regional cerebral blood flow throughout the sleep–wake cycle: An H₂¹⁵O PET study. *Brain*, 120: 1173–1197.
- Brenner, C. (1994). The mind as conflict and compromise formation. *Journal of Clinical Psychoanalysis*, 3: 473–488.
- Cardinal, R. N., Parkinson, J. A., Hall, J., & Everitt, B. J. (2002). Emotion and motivation: The role of the amygdala, ventral striatum, and prefrontal cortex. *Neuroscience & Biobehavioral Reviews*, 26: 321–352.
- Clark, J. M. (1996). Contributions of inhibitory mechanisms to unified theory in neuroscience and psychology. *Brain & Cognition*, 30: 127–152.
- Cohen, J. (1985). Trauma and repression. *Psychoanalytic Inquiry*, 5: 163–189.
- Cunningham, K. S. (1924). The relation of repression to mental development. *Australian Journal of Psychology & Philosophy*, 2: 96–103.
- De Sousa, R. (1976). Rational homunculi. In: *The Identities of Persons*, ed. A. O. Rorty. Berkeley, CA: University of California Press, pp. 217–238.
- Domhoff, G. W. (2004). Why did empirical dream researchers reject Freud? A critique of historical claims by Mark Solms. *Dreaming*, 14: 3–17.
- Eisnitz, A. J. (1980). The organization of the self-representation. *Psychoanalytic Quarterly*, 49: 361–392.
- Eisnitz, A. J. (1991). Some superego issues. In: *The Concept of Structure in Psychoanalysis*, ed. T. Shapiro. Madison, CT: International Universities Press, pp. 137–163.
- Epstein, A. W. (1998). Neural aspects of psychodynamic science. *Journal of the American Academy of Psychoanalysis*, 26: 503–512.
- Fox, N. A., Henderson, H. A., Marshall, P. J., Nichols, K. E., & Ghera, M. M. (2005). Behavioural inhibition: Linking biology and behaviour within a developmental framework. *Annual Review of Psychology*, 56: 235–262.
- Frank, G. (1996). Beliefs and their vicissitudes. *Psychoanalytic Psychology*, 13: 421–431.
- Frank, G. (1999). Freud’s concept of the superego: Review and assessment. *Psychoanalytic Psychology*, 16: 448–463.
- Freud, S. (1895) (with Breuer, J.). *Studies on Hysteria. Standard Edition*, 2.
- Freud, S. (1896). Further remarks on the neuro-psychoses of defence. *Standard Edition*, 3.
- Freud, S. (1900). *The Interpretation of Dreams. Standard Edition*, 4/5.
- Freud, S. (1901). *The Psychopathology of Everyday Life. Standard Edition*, 6.
- Freud, S. (1905a). Fragment of an analysis of a case of hysteria. *Standard Edition*, 7.
- Freud, S. (1905b). *Jokes and Their Relation to the Unconscious. Standard Edition*, 8.
- Freud, S. (1905c). On psychotherapy. *Standard Edition*, 7.
- Freud, S. (1906). My views on the part played by sexuality in the aetiology of the neuroses. *Standard Edition*, 7.
- Freud, S. (1908). Hysterical phantasies and their relation to bisexuality. *Standard Edition*, 9.
- Freud, S. (1909). Notes upon a case of obsessional neurosis. *Standard Edition*, 10.
- Freud, S. (1910a [1909]). Five lectures on psycho-analysis. *Standard Edition*, 11.
- Freud, S. (1910b). The psycho-analytic view of the psychogenic disturbance of vision. *Standard Edition*, 11.
- Freud, S. (1911). Formulations on the two principles of mental functioning. *Standard Edition*, 12.
- Freud, S. (1913a). *Totem and Taboo. Standard Edition*, 13.
- Freud, S. (1913b). The claims of psycho-analysis to scientific interest. *Standard Edition*, 13.
- Freud, S. (1914). On narcissism: An introduction. *Standard Edition*, 14.
- Freud, S. (1915a). Instincts and their vicissitudes. *Standard Edition*, 14.

- Freud, S. (1915b). Repression. *Standard Edition*, 14.
- Freud, S. (1915c). The unconscious. *Standard Edition*, 14.
- Freud, S. (1916–17). *Introductory Lectures on Psycho-Analysis*. *Standard Edition*, 15/16.
- Freud, S. (1917). A metapsychological supplement to the theory of dreams. *Standard Edition*, 14.
- Freud, S. (1920). *Beyond the Pleasure Principle*. *Standard Edition*, 18.
- Freud, S. (1923). *The Ego and the Id*. *Standard Edition*, 19.
- Freud, S. (1926). *Inhibitions, Symptoms and Anxiety*. *Standard Edition*, 20.
- Freud, S. (1932). My contact with Josef Popper-Lynkeus. *Standard Edition*, 22.
- Freud, S. (1933). *New Introductory Lectures on Psycho-Analysis*. *Standard Edition*, 22.
- Freud, S. (1939). *Moses and Monotheism*. *Standard Edition*, 23.
- Freud, S. (1940). *An Outline of Psycho-Analysis*. *Standard Edition*, 23.
- Freud, S. (1950 [1895]). A project for a scientific psychology. *Standard Edition*, 1.
- Friedman, N. P., & Miyake, A. (2004). The relations among inhibition and interference control functions: A latent-variable analysis. *Journal of Experimental Psychology: General*, 133: 101–135.
- Gardner, S. (1993). *Irrationality and the Philosophy of Psychoanalysis*. Cambridge: Cambridge University Press.
- Gillett, E. (1987). The relationship of repression to the unconscious. *International Journal of Psychoanalysis*, 68: 535–546.
- Gillett, E. (1997). Revising Freud's structural theory. *Psychoanalysis and Contemporary Thought*, 20: 471–499.
- Gillett, E. (2001). Signal anxiety from the adaptive point of view. *Psychoanalytic Psychology*, 18: 268–286.
- Gouws, A. (2000). Will the real Freud please stand up? The distribution of power between the unconscious and the preconscious according to the *Traumdeutung*. *International Journal of Psychotherapy*, 5: 227–239.
- Grelotti, D. J., Gauthier, I., & Schultz, R. T. (2002). Social interest and the development of cortical face specialization: What autism teaches us about face processing. *Developmental Psychobiology*, 40: 213–225.
- Grossman, W. I., & Simon, B. (1969). Anthropomorphism: Motive, meaning, and causality in psychoanalytic theory. *Psychoanalytic Study of the Child*, 24: 78–111.
- Harris, H. I. (1950). Repression as a factor in learning theory. *Psychoanalytic Quarterly*, 19: 410–411.
- Hartmann, H. (1950). Comments on the psychoanalytic theory of the ego. *Psychoanalytic Study of the Child*, 5: 74–96.
- Hartmann, H. (1958). *Ego Psychology and the Problem of Adaptation*. New York: International Universities Press.
- Hartmann, H., Kris, E., & Loewenstein, R. M. (1949). Notes on the theory of aggression. *Psychoanalytic Study of the Child*, 3: 9–36.
- Hobson, J. A. (1988). *The Dreaming Brain*. New York: Basic Books.
- Hobson, J. A. (1999). The new neuropsychology of sleep: Implications for psychoanalysis. *Neuro-Psychoanalysis*, 1: 157–183.
- Hobson, J. A. (2004). A model for madness? Dream consciousness: Our understanding of the neurobiology of sleep offers insight into abnormalities in the waking brain. *Nature*, 430: 21.
- Hobson, J. A., & Pace-Schott, E. F. (1999). Response to commentaries. *Neuro-Psychoanalysis*, 1: 206–224.
- Hobson, J. A., Stickgold, R., & Pace-Schott, E. F. (1998). The neuropsychology of REM sleep dreaming. *NeuroReport*, 9: R1–R14.
- Holland, P. C., & Gallagher, M. (2003). Double dissociation of the effects of lesions of basolateral and central amygdala on conditioned stimulus-potentiated feeding and Pavlovian-instrumental transfer. *European Journal of Neuroscience*, 17: 1680–1694.
- Houghton, G., & Tipper, S. P. (1996). Inhibitory mechanisms of neural and cognitive control: Applications to selective attention and sequential action. *Brain & Cognition*, 30: 20–43.
- Jacobson, E. (1965). *The Self and the Object World*. London: Hogarth Press.
- Jacobus, M. (1996). “Russian tactics”: Freud's “Case of homosexuality in a woman”. In: *Freud and the Passions*, ed. J. O'Neill. Pennsylvania, PA: Pennsylvania University Press, pp. 111–126.
- Johnson, A. (1998). Repression: A reexamination of the concept as applied to folktales. *Ethos*, 26: 295–313.
- Jones, E. (1949). *What Is Psycho-Analysis?* London: Allen & Unwin.
- Kalavas, P. W., & Nakamura, M. (1999). Neural systems for behavioural activation and reward. *Current Opinion in Neurobiology*, 9: 223–227.
- Kaplan-Solms, K., & Solms, M. (2000). *Clinical Studies in Neuro-Psychoanalysis: Introduction to a Depth Psychology*. London: Karnac.
- Kawagoe, R., Takikawa, Y., & Hikosaka, O. (2004). Reward-predicting activity of dopamine and caudate neurons—a possible mechanism of motivational control of saccadic eye movement. *Journal of Neurophysiology*, 91: 1013–1024.
- Laplanche, J., & Pontalis, J.-B. (1973). *The Language of Psychoanalysis*. London: Karnac, 1988.
- Lindgren, J. L., Gallagher, M., & Holland, P. C. (2003). Lesions of the basolateral amygdala impair extinction of CS motivational value, but not of explicit conditioned responses, in Pavlovian appetitive second-order conditioning. *European Journal of Neuroscience*, 17: 160–166.
- Mackay, N. (1996). The place of motivation in psychoanalysis. *Modern Psychoanalysis*, 21: 3–17.
- Mancia, M. (1999). Psychoanalysis and the neurosciences: A topical debate on dreams. *International Journal of Psychoanalysis*, 80: 1205–1213.
- Masson, J. M. (Ed.) (1985). *The Complete Letters of Sigmund Freud & Wilhelm Fliess, 1887–1904*. Cambridge: Belknap Press.
- Maze, J. R. (1983). *The Meaning of Behaviour*. London: Allen & Unwin.
- Maze, J. R. (1987). The composition of the ego in a deterministic psychology. In: *Current Issues in Theoretical Psychology*, ed. W. J. Baker, M. E. Hyland, H. Van Rappard, & A. W. Staats. North Holland: Elsevier Science Publishers, pp. 189–199.
- Maze, J. R. (1993). The complementarity of object-relations and instinct theory. *International Journal of Psychoanalysis*, 74: 459–470.
- Maze, J. R., & Henry, R. M. (1996). Problems in the concept of

- repression and proposals for their resolution. *International Journal of Psychoanalysis*, 77: 1085–1100.
- McCarley, R. W. (1998). Dreams: Disguise of forbidden wishes or transparent reflections of a distinct brain state? In: *Neuroscience of the Mind on the Centennial of Freud's Project for a Scientific Psychology*, ed. R. M. Bilder & F. F. LeFever. New York: New York Academy of Sciences, pp. 116–133.
- McCarley, R. W., & Hobson, J. A. (1977). The neurobiological origins of psychoanalytic dream theory. *American Journal of Psychiatry*, 134: 1211–1221.
- McIntosh, D. (1986). The ego and the self in the thought of Sigmund Freud. *International Journal of Psychoanalysis*, 67: 429–448.
- Nagel, E. (1959). Methodological issues in psychoanalytic theory. In: *Psychoanalysis, Scientific Method and Philosophy*, ed. S. Hook. Washington Square: New York University Press, pp. 38–56.
- Nigg, J. T. (2000). On inhibition/disinhibition in developmental psychopathology: Views from cognitive and personality psychology and a working inhibition taxonomy. *Psychological Bulletin*, 126: 220–246.
- Nigg, J. T. (2001). Is ADHD a disinhibitory disorder? *Psychological Bulletin*, 127: 571–598.
- Nigg, J. T., Butler, K. M., Huang-Pollock, C. L., & Henderson, J. M. (2002). Inhibitory processes in adults with persistent childhood onset ADHD. *Journal of Consulting and Clinical Psychology*, 70: 153–157.
- O'Shaughnessy, E. (1999). Relating to the super-ego. *International Journal of Psychoanalysis*, 80: 861–870.
- Panksepp, J. (1999). Emotions as viewed by psychoanalysis and neuroscience: An exercise in consilience. *Neuro-Psychoanalysis*, 1: 15–38.
- Panksepp, J. (2001). The long-term psychobiological consequence of infant emotions: Prescriptions for the 21st century. *Infant Mental Health Journal*, 22: 132–173.
- Panksepp, J. (2003). At the interface of the affective, behavioural and cognitive neurosciences: Decoding the emotional feelings of the brain. *Brain & Cognition*, 52: 4–14.
- Parkinson, J. A., Crofts, H. S., McGuigan, M., Davorka, T. L., Everitt, B. J., & Roberts, A. C. (2001). Role of the primate amygdala in conditioned reinforcement. *Journal of Neuroscience*, 21: 7770–7780.
- Petocz, A. (1999). *Freud, Psychoanalysis, and Symbolism*. Cambridge: Cambridge University Press.
- Phillips, A. G., Ahn, S., & Howland, J. G. (2003). Amygdalar control of the mesocorticolimbic dopamine system: Parallel pathways to motivated behavior. *Neuroscience & Biobehavioral Reviews*, 27: 543–554.
- Popper, K. (1963). *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge & Kegan Paul.
- Prescott, T. J., Redgrave, P., & Gurney, K. (1999). Layered control architectures in robots and vertebrates. *Adaptive Behavior*, 7: 99–127.
- Redgrave, P., Prescott, T. J., & Gurney, K. (1999). The basal ganglia: A vertebrate solution to the selection problem? *Neuroscience*, 89: 1000–1023.
- Ritvo, S., & Solnit, A. J. (1995). Instinct theory. In: *Psychoanalysis: The Major Concepts*, ed. B. E. Moore & B. D. Fine. New Haven, CT: Yale University Press, pp. 327–333.
- Sandler, J., & Joffe, W. G. (1969). Towards a basic psychoanalytic model. *International Journal of Psychoanalysis*, 50: 79–90.
- Sandler, J., & Sandler, A.-M. (1983). The “second censorship”, the “three box model” and some technical implications. *International Journal of Psychoanalysis*, 64: 413–425.
- Sartre, J.-P. (1956). *Being and Nothingness*, trans. H. E. Barnes. New York: Philosophical Library.
- Silverman, M. A. (1986). The male super-ego. *Psychoanalytic Review*, 73: 427–444.
- Smith, R. (1992). *Inhibition: History and Meaning in the Sciences of Mind and Brain*. London: Free Association Books.
- Solms, M. (1999). Commentary on “The New Neuropsychology of Sleep: Implications for Psychoanalysis.” *Neuro-Psychoanalysis*, 1: 183–195.
- Solms, M. (2000a). Dreaming and REM sleep are controlled by different brain mechanisms. *Behavioural & Brain Sciences*, 23: 793–1121.
- Solms, M. (2000b). J. Allan Hobson & Edward Pace-Schott's response. Commentary. *Neuro-Psychoanalysis*, 2: 193–201.
- Solms, M., & Turnbull, O. (2002). *The Brain and the Inner World: An Introduction to the Neuroscience of Subjective Experience*. New York: Other Press.
- Sperling, S. J. (1958). On denial and the essential nature of defence. *International Journal of Psychoanalysis*, 39: 25–38.
- Stern, C. E., & Passingham, R. E. (1996). The nucleus accumbens in monkeys (*Macaca fascicularis*): II. Emotion and motivation. *Behaviour Brain Research*, 75: 179–193.
- Thalberg, I. (1982). Freud's anatomies of the self. In: *Philosophical Essays on Freud*, ed. R. Wollheim & J. Hopkins. Cambridge: Cambridge University Press, pp. 241–263.
- White, R. W. (1963). Ego and reality in psychoanalytic theory. In: *Psychological Issues, Vol. 3*, Monograph 11. New York: International Universities Press.
- Wohlgemuth, A. (1923). *A Critical Examination of Psychoanalysis*. London: Allen & Unwin.
- Yu, C. K.-C. (2001). Neuroanatomical correlates of dreaming: The supramarginal gyrus controversy (dream work). *Neuro-Psychoanalysis*, 2: 47–59.
- Zepf, S. (2001). Incentives for a reconsideration of the debate on metapsychology. *International Journal of Psychoanalysis*, 82: 463–483.