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'Real Processes' and the Explanatory Status of Repression and Inhibition

Simon Boag

The recent interest in neuroscientific psychodynamic research ('neuropsychodynamic research') has meant that empirical findings are emerging which allow greater public scrutiny of psychodynamic concepts. However, Malcolm Macmillan has claimed that the psychoanalytic cornerstone, repression, is a circular explanatory concept and incapable of referring to a "real process." This paper discusses Macmillan's criticism and finds that repression is a coherent explanatory term and is not precluded from referring to real processes. Specifically, 'neural inhibition,' triggered by social factors, can account for Freudian repression, without succumbing to circular explanation. Recent developments in neuroscience suggest that a plausible mechanism of inhibition exists, providing testable avenues for the 'cornerstone' of psychoanalysis. Evidence of the role of the frontal lobes, a brain area that appears to mediate the influence of social factors upon impulse control, demonstrates that repression is plausible within a dynamic neural framework.

Keywords: Explanation; Sigmund Freud; Frontal Lobes; Neuro-psychodynamic research; Neuroscience; Malcolm Macmillan; Neural Inhibition; Psychoanalysis; Repression

1. Introduction

Unbeknownst to the wider academic psychological community, a notable development in psychoanalytic research has been gathering momentum over the past decade. Once rejected by critics as an untestable, unfalsifiable, pseudoscience (Eysenck, 1986; Gellner, 1985; Popper, 1963), and even labeled a religion (Webster, 1995), some proponents of psychoanalysis have been embracing neuroscience as a means of substantiating psychodynamic claims. Evidence for this is seen in the recent surge of publications focusing on 'neuropsychodynamic research,' and even the founding of a journal

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dedicated specifically to this field (*neuropsychanalysis*). The significance of this direction for psychoanalysis cannot be overstated. Over 100 years have elapsed since Freud first described his key theoretical terms, and although psychoanalysis as a therapy still flourishes, the strength of the underlying theory remains in doubt. In particular, psychoanalysis's reliance upon case studies for supporting evidence has meant that although practitioners claim that the theory receives empirical support, independent, public evidence has remained mostly inaccessible to the wider scientific community. The venture into neuroscience makes possible the further evaluation of some of the fundamental concepts within psychoanalytic theory.

One such concept is that of *repression*. Freud (1914) declared that the "theory of repression is the corner-stone on which the whole structure of psycho-analysis rests" (p. 16). At its most basic, repression refers to a defensive act of an individual preventing certain information from becoming known (Freud, 1915b, p. 147). However, although it is tempting to think that evaluating the theory of repression is simply a matter of comparing the theory against the relevant neuroscientific evidence, the issue of precisely which evidence is relevant is, itself, a conceptual issue that needs addressing before the empirical evaluation can be undertaken. Here a serious philosophical concern arises involving the explanatory and ontological status of repression. According to Malcolm Macmillan (1991), repression is a vacuous explanatory construct and "has no potential for referring to real processes" (p. 166). This paper aims to evaluate Macmillan's claim, and in so doing elucidate possible means for conceptualizing a mechanism of repression. The paper first discusses Macmillan's claim and then presents Freud's theory of repression to determine whether Freud's account can refer to 'real processes' and provide a satisfactory explanatory account. Repression is then discussed in relation to recent findings from neuroscientific research discussing neural inhibition. The frontal lobes, which appear to mediate social influences upon impulse control, and the "winner-takes-all" mechanism attributed to the basal ganglia, are then discussed.

2. The Explanatory Status of Repression

Freud (1925) once wrote, it "is possible to take repression as a centre and bring all the elements of psycho-analytic theory into relation with it" (p. 30). One reason for the theory's centrality is its apparent explanatory status in accounts of psychopathology. Both advocate and critic alike appreciate that the theory of repression is "the key explanatory theory of psychoanalysis" (Cohen, 1985, p. 165), and Grünbaum (1983) writes, "[the] repression-aetiology of psychoneuroses... is *the* major pillar of the Freudian structure" (p. 149, original italics). Indeed, some claim that repression forms "the basis for any general theory of psychopathology" (Cohen & Kinston, 1983, p. 420; cf. Maze & Henry, 1996), and this theoretical significance extends to clinical psychoanalytic practice: "Repression theory is not only intimately interwoven with other fundamental psychoanalytic concepts, but is considered central to clinical work" (Cohen & Kinston, 1983, p. 411).

However, Macmillan (1991) claims that the explanatory status of repression is dubious, since repression is “uncharacterised and only expresses a relation. We know what it *does* but we do not know what it *is*” (p. 160, original italics):

Repression is an uncharacterised theoretical term which has been substituted for the relation Freud wanted to explain. It tells us only what the repression is supposed to *do*, not what it *is* and has no potential for referring to real processes. (Macmillan, 1991, p. 166, original italics)

There are two significant and interrelated claims here. The first relates to the explanatory power of repression, whilst the second addresses its ontological status. Turning to the first, Macmillan is claiming here that Freud only tells us the supposed effects of repression, without providing an account of the actual causal mechanism leading to the effect. The problem here is that if repression means nothing more than a ‘failure of awareness,’ then to say that repression causes a ‘failure of awareness’ is vacuous, providing only a circular pseudo-explanation (*a* causes *b*, when *a* = *b*). The problem of circularity arises because the concept of repression itself is bound conceptually with the effect it is said to explain, and as such stands simply as a redescription of what is in need of explanation. As such, the explanatory ‘power’ succumbs to circularity, since the effect is used to explain itself.

Macmillan is proposing a valid philosophical point here, one with its roots in Hume’s injunction that cause and effect must be logically distinct. As Mackay (1996) notes: “Causation is a relation between two independent events. For event or process *C* to be a cause of an event *E*, the effect, *C* must exist independently of *E*, and *E* cannot happen before it. They must be events or processes separate in space and time” (p. 10). That is, the cause of an effect must be describable by reference to its own intrinsic properties, independent of the effect itself (Mackay, 1996; Maze, 1983), for to say otherwise is to be left saying that the cause somehow brings itself about, which reduces cause–effect relationships to nonsense. The way to avoid such circularity is, in principle, simple. Whatever is purported to be a cause must be capable of description independently of the effect it is said to explain, so if repression is said to be capable of explaining a ‘lack of awareness,’ then a mechanism of repression independent of that effect must be provided (that is, if *a* causes *b*, then *a* must not include *b*). In other words, to explain a ‘failure of awareness’ requires an explanation independent of that failure of awareness.

If this issue of circularity is not a big enough problem for the Freudian account, Macmillan (1991) further claims that repression “has no potential for referring to real processes”; repression, he says, is a theoretical term, and it is only “those theoretical terms whose characteristics or attributed properties can be investigated that have the potential for referring to real processes” (p. 149). The problem with repression, he believes, is that it “cannot be sensed or observed directly” (p. 147), since it is simply a *post hoc* inference derived from the observation of certain effects, and thus has no potential for referring to a real process. In fact, since repression is discussed in terms of its effects, rather than in terms of causes, Macmillan believes that repression is “uncharacterised” (pp. 160, 165), and is subsequently logically

precluded from referring to a real process, since the concept cannot escape the issue of circularity discussed above. Accordingly, believes Macmillan, repression has no potential for referring to a real process, since it is both unobservable and uncharacterized.

Since to characterize anything requires spelling out the particular terms involved and how they stand *vis-à-vis* one another (i.e., how the terms relate), to evaluate Macmillan's claim requires determining whether the mechanics of repression (the terms and operations involved) can be identified. It is clear, from the outset, that Macmillan may have a valid point, since on the face of it, at least, it appears that some accounts of repression do not adequately characterize the terms and operations involved. Consider, for instance, Madison's (1961) account of Freudian repression:

Repression and defence should be thought of as referring, theoretically, to unseen and unseeable events—to an imaginatively represented interplay of instinctual forces and anti-forces within the person. This interplay results in varied behavioural effects which *are* observable—resistances, symptoms, dreams, distortions of conscious representation, amnesia, inhibitions, and childhood fears. (p. 14, original italics)

Whilst Madison's general presentation of the Freudian account is accurate (an achievement in itself given the abundance of inaccurate portrayals; see Boag, 2006), he stumbles in this description of repression. If repression is literally "unseeable," which in this context can be taken to mean "unknowable," then no one could characterize repression, and reference to an "imaginative interplay" would be simply vacuous. However, there is an important difference if such processes are simply "unseen." As Hopkins (1988) notes, any account of behavior typically invokes "unseen" processes (such as motives and beliefs), which we typically infer on the basis of effects (i.e., sequences of apparently motivated movements) (p. 38). In this respect repression is not dissimilar to other processes or entities afforded scientific status; the "pre-eminent" scientific domain of physics invokes presently unobservable processes or entities based on manifested effects: "the physicist surmises the existence of electrical particles of atoms by the effects they produce" (Beres, 1962, p. 309). That being said, Macmillan does, however, draw attention to an important issue; if we are to give a coherent account of repression then we must be capable of characterizing it through identifying the terms and relations involved, independently of the effects that they are said to explain. What is needed then is a clear theoretical exposition of repression, before comparison with the available neuroscientific evidence can begin.

2.1. Making Sense of Freudian Repression

Although repression is commonly conceived of in terms of "motivated forgetting," such a conception is an oversimplification, since it fails to appreciate that to understand repression (and perhaps every other concept in Freudian psychoanalysis, for that matter) requires understanding the concept's respective position within the dynamics of the personality as a whole. Repression is premised upon Freud's

postulated general motivating principle forming the basis of both normal and pathological behavior. He writes in the posthumously published *Project for a Scientific Psychology*: “The nervous system has the most decided inclination to a *flight from pain*” (Freud, 1895, p. 307, original italics). For Freud “pain” or “unpleasure” is the motivating basis of all *defensive* responses, and the earliest defensive efforts are movements away from painful stimuli, whether via motor or psychical means (cf. Sperling, 1958, p. 27). Just like a reflex response away from a painful physical stimulus, says Freud, “psychical activity draws back from any event which might arouse unpleasure” (Freud, 1911, p. 219), and repression is comparable to a “flight-reflex in the presence of painful stimuli” (Freud, 1901, p. 147), involving a *turning away*, or withdrawal of attention from unpleasurable perceptions (Freud, 1900, p. 600, 1911, p. 219).

A hierarchy of such defensive responses, of course, occur as a part of daily life. Placing one’s hand on a hot stove will cause a reflex response that removes the hand from the painful stimulus, whilst walking down the road and observing a revolting sight may cause one to turn away. Repression, in turn, is comparable to a psychical turning away from disturbing stimuli (i.e., a withdrawal of attention), acting as a form of defense operating through denying awareness to offensive targets (i.e., rendering targets unconscious), a primitive response that occurs before more sophisticated defensive activities can commence, such as “reasoned rejections”: “Repression may, without doubt, be correctly described as the intermediate stage between a defensive reflex and a condemning judgment” (Freud, 1905, p. 175). Repression is thus an ordinary, nonmystical process, comprehensible within a framework of pain-avoiding activities.

The primary target in Freud’s mature theory of repression is the “wish” and, as Pataki (2000) notes, the German ‘*Wunsch*’ (‘wish’) has a greater association with action than the English equivalent, evident in Freud’s claim that “nothing but a wish can set our mental apparatus working” (Freud, 1900, p. 567). The terms ‘wish’ and ‘desire’ can generally be used interchangeably, and in Freud’s view, wishes develop in relation to “needs” (Freud, 1900, p. 598), acting instrumentally to inform the organism about actions believed to lead to either gratification or frustration. The motivational bases of the needs themselves are the “drives” (the German ‘*Triebe*’, though often translated as ‘instincts’), conceptualized as the *somatic* systems generating thought and action, of which, now much neurophysiological evidence exists (see Bancroft, 1995; Blundell & Hill, 1995; Panksepp, 1999, 2003; Pfaff, 1999; Sowards & Sowards, 2003). Freud (1915a) recognizes that to avoid postulating drives *ad hoc* and *ad libitum* required identifying drives by their physiological bases (or *sources*), and although he never directly set out to establish specifically which physiological sources exist, preferring to remain on psychological ground (Freud, 1900, 1913), he felt that a drive account could be justified *in principle*. Simply put, a mechanistic and deterministic account of any behavior requires the postulation of a driving mechanism, for to say otherwise would be analogous to attempting to explain a car’s operation in the absence of its having an engine (see Maze, 1983 for further discussion here).

Insofar as repression targets wishes, it targets the *ideational representative* (or psychological component, the “wish for *p*”) of the physiological drives. Here, “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). The pivotal question, of course, is why should we need to deny awareness of our own desires? On Freud’s account, repression occurs when the satisfaction of an impulse would “cause pleasure in one place and unpleasure in another” (Freud, 1915b, p. 147). That is, the gratification of an impulse, though pleasurable in itself, would also lead to other consequences that were considered unpleasurable (and which outweigh the anticipated pleasure). A young child’s desire to harm a younger sibling, for instance, might be considered from the child’s point of view as a source of satisfaction if acted upon, but also a source of frustration, since it may also lead to further dissatisfying consequences such as the caregivers’ wrath. Thus, Freud (1915b) writes: “It has consequently become a condition for repression that the motive force of unpleasure shall have acquired more strength than the pleasure obtained from satisfaction” (p. 147). This situation invariably results from conflicting instinctual aims, whose major source is externally situated in the form of parental injunctions: “[Repression] can almost never be achieved without the additional help of upbringing, of parental influence . . . which restricts the ego’s activity by prohibitions and punishments, and encourages or compels the setting-up of repression” (Freud, 1940, p. 185). For repression to occur, the young child evaluates that a desire leads to severe punishment, generating anxiety and motivating repression, which prevents acting upon the desire (Freud, 1915b, p. 157).

As such, repression is a product of social influences during early childhood. As Freud repeatedly notes, humanity’s biological heritage and social constraints underlie instinctual renunciation and repression. The human infant’s state of helplessness and dependence upon caregivers for satisfaction and survival means that anything threatening to take away the parents’ providence (such as the loss of the parents’ love) constitutes a *situation of danger* to the developing organism (Freud, 1926, pp. 154–155), generating an expectation of helplessness and anxiety (Freud, 1926, pp. 137–138). Since parental affection is urgently sought and generally contingent upon suppression of behaviors disapproved of by the caregivers, behaviors displeasing the parents (such as aggressive and sexual behaviors) become viewed as a threat to the interests of the remaining drives (cf. Maze, 1983). The salience of the anxiety response to the threat takes priority over the other responses prompting the threat, preventing both awareness of, and acting upon, the threatening desires. This has enormous social implications, since as Freud notes, it is partly due to the “renunciation of instinct” that human beings can coexist. During socialization the “unruly,” developing human being has constraints imposed upon the satisfaction of its “selfish,” aggressive and sexual desires:

... it is impossible to overlook the extent to which civilization is built upon a renunciation of instinct, how much it presupposes precisely the non-satisfaction

(by suppression, repression or some other means?) of powerful instincts. This “cultural frustration” dominates the large field of social relationships between human beings. (Freud, 1930, p. 97)

3. Freud's Accounts of Maintaining Repression

Thus far Freud has provided an account of the motives underlying repression (unpleasure and anxiety), the targets (wishes), and even the environmental circumstances leading to its onset (socialization and threat). However, we are yet to be told precisely what the mechanism is underlying “repression,” which explains the effects (diminished awareness of our own desires). At this point, to be fair to Freud, we could simply say that there are many psychological phenomena that we have little to no understanding of their mechanism, yet we accept them to be ‘real processes’ nonetheless. As Freud’s early colleague Josef Breuer writes:

We cannot, it is true, understand how an idea can be deliberately repressed from consciousness. But we are perfectly familiar with the corresponding positive process, that of concentrating attention on an idea, and we are just as unable to say how we effect *that*. (Breuer & Freud, 1895, p. 214, original italics)

However, there is an important difference between attention and repression. *Attention* is a phenomenon that might be said to be readily observable, and so no dispute arises concerning its existence. The existence of repression, on the other hand, is the very matter at issue, and critics, such as Macmillan, will not be easily silenced without some form of hard evidence that repression exists. Furthermore, without some account of the mechanism of repression it is not even clear that acts of repression are even possible, and so repression’s ontological status remains dubious. Subsequently, it is this issue of mechanism that is central to a Freudian defense against Macmillan’s claim that repression has no potential for referring to real processes. Unless Freudian theory can give some indication of the mechanisms involved it remains uncharacterized, and so succumbs to Macmillan’s criticism.

3.1. Freud's Early Mechanism: Affect–Idea Dissociation

Freud’s earliest published account of the mechanism of repression involved what could be called *affect–idea dissociation*. To appreciate what Freud means here requires a brief excursion into Freud’s philosophical position concerning memories and thought (“ideas”), which appears to derive, in part, from the work of the Austrian philosopher Franz Brentano (1838–1917) who Freud knew personally and whose lectures he had attended at the University of Vienna (Frampton, 1991; Jones, 1953). Freud appears to have adopted Brentano’s (1874/1973, p. 5) concept of *Vorstellungen* (‘presentations’), translated by Freud’s editor Strachey as ‘idea’, covering the English terms ‘idea’, ‘image’ and ‘presentation’ (Freud, 1915c, p. 174). Brentano distinguishes

mentality from physical objects through the notion of *intentionality*; all mental acts such as judgments and emotions take (or *intend*) objects:

Every mental phenomenon includes something as an object within itself, although they do not do so in the same way. In presentation something is presented, in judgment something is affirmed or denied, in love loved, in hate hated, in desire desired and so on No physical object exhibits anything like it. We can, therefore, define mental phenomena by saying that they are those which contain an object intentionally within themselves. (Brentano, 1874/1973, pp. 88–89)

This position influenced Freud's understanding of the "idea" being what a mental act was directed at or about (i.e., its *object*) (McIntosh, 1986). At the same time, Freud contrasted an "idea" with "affect," the latter generally conceptualized as the experienced dimension of the hypothesized excitations of psychical energy (Freud, 1894, pp. 48–49):

. . . in mental functioning something is to be distinguished—a quota of affect or sum of excitation—which possesses all the characteristics of a quantity (though we have no means of measuring it), which is capable of increase, diminution, displacement and discharge, and which is spread over the memory-traces of ideas somewhat as an electric charge is spread over the surface of a body. (Freud, 1894, p. 60)

Taken literally, this theory of affects must be rejected, since there is no evidence of any substantive "psychical energy" within the nervous system, as postulated above (see Linke, 1998). However, to dismiss Freudian theory in such a manner is itself problematic since it fails to appreciate the role of metaphor in Freud's work, and, without claiming universal consensus on this point, the position adopted here understands Freud's physicalist terms as metaphors *describing* subjective experience. The "quantity of psychic energy" refers simply to the "intensity" of investment directed at the intended object of a mental act. As McIntosh (1986) writes: "Motivation admits of degrees of magnitude . . . urges are more or less strong, desires more or less intense. The term 'psychic energy' means simply 'magnitude of urge or desire'" (p. 431). Conceptualized as such, psychical energy appears to be a metaphor for the amount or intensity of attention, and when discussing emotions, the intensity of feeling directed towards an object.

In Freud's theory the economic feature of affects gives ideas their strength or intensity and influences their position in associative thinking (Breuer & Freud, 1895, p. 165). The bond between affects and ideas is not indissoluble, however, and the affect attached to one particular idea could be displaced onto another, as occurs in some cases of psychopathology where a "false connection" is created (Breuer & Freud, 1895, p. 67; Freud, 1894, pp. 52–53), a theme developed throughout Freud's work (cf. Freud, 1909, pp. 175–176, 1915b, pp. 152–153). For instance, in Freud's (1909) "Rat Man" case, hostility was deflected from one object (the father) to a substitute (the brother). Accordingly, the relationship between affects and ideas is one of attachment and detachment, providing Freud with a particular conceptualization of the mechanism of repression. Repression is said to dissociate

the affect from the idea so that it becomes “weak” and thereafter incapable of becoming conscious: “. . . we can infer in what the process of defense consisted: it consisted in turning a strong idea into a weak one, in robbing it of its affect” (Breuer & Freud, 1895, p. 280; cf. Freud, 1894, pp. 48–49). After repression the affect and idea undergo separate vicissitudes. The idea is no longer known and is “excluded from association” (Breuer & Freud, 1895, p. 11), whilst the affect is channeled onto a substitute (which, in some cases, leads to symptom formation).

Macmillan (1991) correctly observes that this account is problematic, since the actual mechanism of dissociation is still unaccounted for: “. . . it is more correct to say that the detachment *is* repression. What Freud does not tell us is how it comes about” (p. 161). That is, Freud still needs to provide a mechanism of affect–idea dissociation, since again, the account simply tells us the effect (the dissociation), and although the social factors and personality dynamics leading to the effect are to some extent stipulated, how the affect–idea dissociation occurs specifically is not made clear.

Moreover, Macmillan believes that there is a “fatal inconsistency” in this account, involving the relationship between idea, affect, and the undoing of repression (*abreaction*):

For an affect to be converted and for its idea to become unconscious the separation of the two has to be complete or near complete. However, for abreaction to take place, the idea has to be recovered with its affect still attached. Symptom formation thus requires repression to separate the idea from its feeling but symptom removal requires they remain attached. (Macmillan, 1991, p. 161)

Macmillan’s argument here somewhat oversimplifies the issue, however, since as the quote above observes there need only be a “near complete” separation between idea and affect and so the criticism is not as “fatal” as Macmillan believes. Having said this, a major logical problem does exist within this particular account. Specifically, if it is accepted that repression operates via severing the affect from the idea and rechanneling the affect elsewhere, then a repressed idea should remain unconscious simply due to the fact that it is incapable of becoming conscious. Having lost all (or most) of its affect the idea then should have little or no impetus to become conscious and so no account of *maintaining* repression is needed. The problem with this, though, is that it conflicts with Breuer and Freud’s main clinical finding that unconscious ideas actively persist and exert a powerful effect upon behavior. Breuer admits such a difficulty:

What seems hard to understand is how an idea can be sufficiently intense to provoke a lively motor act, for instance, and at the same time not intense enough to become conscious. (Breuer & Freud, 1895, p. 223)

Moreover, this leads Breuer to contradict the notion that repressed ideas are weak at all:

Ideas such as these which, though current, are unconscious, not because of their relatively small degree of liveliness, but in spite of their great intensity, may be

described as ideas that are “inadmissible to consciousness.” (Breuer & Freud, 1895, p. 225)

Thus the affect–idea dissociation account fails logically since it contradicts the phenomenon it is supposed to explain. If maintaining repression cannot be explained through appealing to affect–idea dissociation then an explanation is still required of how ideas remain unconscious after repression.

3.2. *Anticathexis and Counter-Pressure*

Freud later proposes what he terms “anticathexes” or “counter-cathexes” (*Gegenbesetzungen*). Simply turning away from an impulse, “as though in an attempt at flight” (1915c, p. 182), effects only a short-term solution, since the target of repression rises from the individual’s own endogenous sources of motivation (1915c, p. 180). Instead, says Freud, after the initial act of repression (or withdrawal of attention or “cathexis”), an anticathexis, often described in terms of “pressure,” prevents the repressed idea breaking through into conscious thought: “[Since] the repressed exercises a continuous pressure in the direction of the conscious . . . this pressure must be balanced by an unceasing counter-pressure” (Freud, 1915b, p. 151; cf. Freud, 1917, p. 225, 1926, p. 157). This unceasing counter-pressure “represents the permanent expenditure [of energy] . . . which also guarantees the permanence of that repression” (Freud, 1915c, p. 181; cf. Freud, 1916–1917, p. 411):

The first act of repression involved further consequences. In the first place the ego was obliged to protect itself against the constant threat of a renewed advance on the part of the repressed impulse by making a permanent expenditure of energy, an *anticathexis*, and it thus impoverished itself. (Freud, 1925, pp. 29–30, original italics)

The concept of anticathexis, itself, has received little attention in psychoanalytic writings subsequent to Freud. When it is referred to it is typically postulated as a necessary hypothesis. For example, Shevrin (1990) accepts that if we are to explain repression then this “more or less permanent counterforce must be conjectured to exist” (p. 105). However, metaphors such as “counterforce” and “pressure” need fleshing out, since they are precisely the type of ambiguous terms that may conceal explanatory gaps within a theory. Consider, for example, Madison’s account of anticathexis as “pure counterforce”:

Anticathexis is pure counterforce. It represents a quantity of energy with a certain direction (opposed to instinct), but has no fixed content. This counterforce becomes manifest in certain situations that do have a characteristic behavioural content, such as resistance behaviour, defence, or greater impulse expression in dreams, but in its most abstract form it is the pure force of the repression tendency. (Madison, 1961, p. 126)

Madison is invoking anticathexes here to explain repression, inferred from the behavior it is said to explain, but without any indication of how an anticathexis or “pure force” is to be characterized, and subsequently the account is open to

Macmillan's (1991) criticism. In fact, other authors have noted the descriptive capacity of the term 'anticathexis'. For example, Gillett (1987) proposes dropping the notion of 'anticathexis' altogether: "whenever the term 'anticathexis' appears, just substitute 'force of repression', with 'force' metaphorically as the quantitative intensity needed to balance the intensity of the repressed content" (p. 545). However, 'force' itself still needs to be characterized in terms independent of what it is trying to explain, since otherwise 'force' or 'anticathexis' remain as metaphors, providing only a vacuous "explanation." Therefore, Freud still needs to provide an adequate mechanism for maintaining repression.

4. A Mechanism of Repression? Clues From Modern Neuroscience

Given this failure of Freud's proposed "mechanisms," the question arises whether this precludes repression from referring to real processes, and so conceding to Macmillan's criticism. There are reasons, however, to believe that this is not necessarily the case, since others have noted that it may be more accurate to consider repression as a form of "impulse control" or response inhibition (Cunningham, 1924; Dollard & Miller, 1950; Harris, 1950), a conceptualization that allows comparison with conceptions in contemporary scientific literature. At the outset, however, it must be kept in mind that the problem of circularity is not limited to the term 'repression', and 'inhibition' itself needs to be carefully formulated to avoid the same conceptual pitfalls. As Macmillan (1996) correctly observes, 'inhibition' itself may be open to the same charge of circularity as repression, since to simply say that a person is incapable of knowing a particular desire "due to inhibition" remains circular, if inhibition simply means being incapable of knowing that desire. As a consequence, trying to rescue Freudian repression merely by substituting 'inhibition' in its place would fail to circumvent Macmillan's criticism of repression, unless 'inhibition' itself can be understood independently of what it attempts to explain. To prevent this problem, and provide an actual explanatory account, 'inhibition' must accordingly be describable in terms that are independent of the effects that it is said to cause.

An avenue towards achieving this was provided by Freud himself. Freud proposed another account for the mechanism of repression, though not published during his lifetime, and although problematic in detail (as we shall presently see), it does provide an indication of how we might possibly characterize the mechanism of repression, independent of what it is attempting to explain. In Freud's aforementioned *Project for a Scientific Psychology*, repression is "described generally as *inhibition*" operating via a neural mechanism termed a "side-cathexis" (Freud, 1895, p. 323, original italics). Unfortunately for Freud's theory this mechanism is both simply logically unworkable (see Macmillan, 1992; Maze, 1983), and finds no empirical neuroscientific support (McCarley, 1998). Be that as it may, there is no reason why Freudian repression needs to be restricted to Freud's failed, unpublished, neural account, and if alternative inhibitory neural mechanisms can be identified

then we have a potential *real* process that qualifies for the mechanism of repression. As such, specific brain mechanisms may possibly provide a tangible account of understanding repression independent of the effects that it is said to cause. One such neural mechanism, proposed by Maze and Henry (1996), posits that with repression intense anxiety during childhood leads to *neural inhibition* (or “affective blocking”), which prevents the threatening desire from becoming known. These authors propose, following Kissin (1986), that since any specific mental act is mediated by a distinctive neural process peculiar to it (termed an “engram”), to recollect that mental act must include some form of reactivation of that neural process. With repression, threat evaluation and intense anxiety sets up a “neural condition” preventing that engram from activation and so preventing the mental act from becoming known (Maze & Henry, 1996, p. 1095). However, a limitation of this account is that this would only mean that knowledge of the wish is prevented, and there would be nothing to stop the wish from being acted upon (see Linke, 1998). Freud, on the other hand, indicates that repression results also in a “motor fettering of the impulse” (Freud, 1915b, p. 157), so that such neural inhibition must not only prevent knowledge of the repressed wish (i.e., prevent a certain degree of self-awareness), but also prevent the motor responses that would be involved in acting upon the repressed wish. Conceptually, this account circumvents both the charge of circularity, and the charge that repression is incapable of existing as a “real process,” since it provides an identifiable mechanism for mediating the effect of repression independent of those same effects. Moreover, whilst it is too early to assess such an account empirically, it is clear from a review of the neuroscientific literature that such inhibitory mechanisms, or a species thereof, are entirely plausible.

4.1. *The Emerging Dynamic Neuroscientific View of “Persons”*

It may come as a surprise to learn that a dynamic view of “persons” is emerging with our increased understanding of neuroscience and brain mechanisms. Rather than a rational “self” freely choosing behavior, the human individual emerges as a complex machine driven by multiple biomechanical motivational systems, whose behavioral responses may at times conflict with one another as part of everyday functioning (Paulus & Frank, 2003; Redgrave, Prescott, & Gurney, 1999). The recognition of the fundamental significance of biological drives is also becoming appreciated (e.g., Damasio, 1994), and the importance of affects, such as anxiety, in guiding and shaping behavior is gaining wide appeal (e.g., the “somatic-marker” hypothesis; see Bechara, Damasio, & Damasio, 2000; Damasio, 1994, 1998, 2001). Furthermore, it is recognized by nonpsychodynamic researchers that, given the multiple sources of motivation, some responses must be prevented from occurring for an organism to operate smoothly, indicating “the importance of inhibitory mechanisms for the efficient functioning of the organism” (Thayer & Friedman, 2002, p. 123; cf. Redgrave et al., 1999). In fact, the notions of “impulse control” and “response inhibition” are dynamic ones, and an area of the brain particularly associated with such activity, as well as the influence of social relationships, is the frontal lobes.

Sometimes referred to as the “organ of civilization” (Miller, Galanter, & Pribram, 1960, p. 207; cf. Lezak, 1995; Luria, 1973), the frontal lobes appear to play an important role in the social regulation of behavior, since damage to the prefrontal cortex is associated with, amongst other things, a breakdown of the influence of social attitudes on behaviors (Grattan & Eslinger, 1991; Lezak, 1995). Frontal lobe damage patients may “experience little or no anxiety, and . . . be impulsive and unconcerned about social conventions” (Lezak, 1995, p. 95), and as Damasio and Anderson (1993) report, after damage to the prefrontal cortices (especially the ventromedial sector), persons may “develop abnormal social conduct, which repeatedly leads to punishing consequences, in spite of their maintained conventional memory and intelligence” (p. 449). This breakdown can be partly conceived of in terms of “behavior disinhibition,” involving a “disregard for the recognized social restrictions and/or an inability to disinhibit actions” (Stuss & Benson, 1986, p. 134), and further entailing “an inability . . . to appreciate the impact one makes on others, or to size up a social situation appropriately” (Lezak, 1995, p. 95). Additionally, damage to the frontal lobes results in difficulties in suppressing response tendencies and impulsivity, and consequently leading to both “associated behavior problems such as aggressive outbursts and sexual promiscuity” (Lezak, 1995, p. 94), as well as “difficulties in holding back a wrong or unwanted response, particularly when it may either have a strong association value or be part of an already ongoing response chain” (Lezak, 1995, p. 95; cf. Mateer & Williams, 1991; Thayer & Friedman, 2002).

Here the ventral frontal cortex is particularly significant, since it “appears to be mostly involved in certain aspects of response control, particularly the suppression or inhibition of interfering tendencies” (Mateer & Williams, 1991, pp. 370–371). The notion of “interfering tendencies” is consistent with a psychodynamic conceptualization (i.e., “conflict”), and as the above review indicates, the control of such tendencies appears to be intimately bound up with social influences mediated by areas of the frontal lobes. Moreover, there is some indication that a connection between drives and frontal lobe inhibitory mechanisms exists (Lezak, 1995; Thayer & Friedman, 2002), as would be a necessary postulation for the Freudian account, whilst the relation between the frontal lobe and the amygdala (the “basal forebrain”) in fear conditioning and inhibitory avoidance (Fanselow & Poulos, 2005; Tinsley, Quinn, & Fanselow, 2004) parallels a connection that would also be predicted. However, whilst the above evidence is suggestive, it needs to be treated with caution. Much is known about the frontal lobes through damage and resulting deficit, and “localizing” any brain activity within a specific brain region runs the risk of falling into the “phrenological trap” (Damasio, 2000, p. 129). Furthermore, such prefrontal mechanisms have, as yet, only been shown to involve short-term inhibitory effects, rather than the longer-term effects postulated in accounts of repressive inhibition discussed earlier (e.g., Maze & Henry, 1996). However, there is no logical reason to preclude such longer-term inhibition from occurring, and the issue ultimately remains an empirical one. Furthermore, the above review does suggest that there is an important connection between social influences and

response inhibition, which is precisely the framework necessary to understand repression.

4.2. *The “Winner-Takes-All” Mechanism*

Although the frontal lobes, as indicated above, may be instrumental in response inhibition and the selection of behavior, a specific mechanism has still not been provided for how a response may in fact be inhibited. Moreover, other subcortical structures may also need to be taken into account. A model proposed by Redgrave et al. (1999), posits that the basal ganglia contains both the structures and neural connections necessary for a mechanism mediating “the competition between incompatible inputs” (p. 1016). As in Freud’s account, Redgrave et al. propose that biological needs, stemming from a multiplicity of motivating systems, initiate behavioral responses, and that these multiple responses can at times conflict with one another. In their view, any mammalian organism is capable of a variety of responses, some of which may involve approaching aspects of the environment (e.g., finding food and eating), whilst others involve avoiding certain environmental stimuli (e.g., fleeing from a bear). These responses all need to be coordinated within a single organismic apparatus, and as Redgrave et al. note, depending upon the relevant causal factors which relate to both endogenous sources of motivation and external stimuli, different responses will take precedence over one another in varying circumstances. For example, eating behavior might occur when “hunger” is somatically activated and food available (and in the absence of immediate threat). However, should a threat arise, a response to the threat could be expected to take priority over eating, causing the termination of eating behavior and the activation of fleeing behavior. Redgrave et al. call this switching of behavior the “selection problem,” and their proposal is that the “salience” of the competing behaviors, determined neurophysically although altered by the impact by the environment, is the determining factor as to which response takes priority. The neural workings of a “winner-takes-all” mechanism allows the most motivationally salient response to emerge as the dominant response, causing the basal ganglia to act as a “central selection mechanism to resolve conflict between competing system” (Redgrave et al., 1999, p. 1009), shutting off competing responses and allowing the dominant response exclusive access to the motor systems of the brain. The details of this mechanism involve neurophysical properties, but the important point to appreciate here is that these authors provide a workable deterministic mechanism for understanding both the selection and inhibition of responses, which would be necessary for repression to occur.

Although the basal ganglia’s involvement in response inhibition is still a matter of empirical dispute (see Aron & Poldrack, 2005), and prefrontal activation, as discussed earlier, may be a more important candidate (Aron & Poldrack, 2005; Chee, Sriram, Soon, & Lee, 2000; Konishi, Jimura, Asari, & Miyashita, 2003), it can be seen that this provides a template for repression to operate as a “real process,” which under specified conditions (childhood, socialization, fear evaluation) leads to response inhibition and prevention of knowledge of one’s own desires. Since this

knowledge is prevented via a neural mechanism, cause and effect are distinct, such that neural inhibition causes response inhibition and lack of knowledge, and thus fulfilling the requirements of an explanatory account.

5. Conclusion

So, what is left of Macmillan's (1991) claim that repression is explanatorily vacuous and has no potential for referring to real processes? The account of repression presented here specifies the motivational sources (the drives defined physiologically), the targets (e.g., "wishes"), the types of contexts that repression could be expected to occur within (e.g., social situations in childhood where acting upon desires is believed to lead to threat), *and* a possible mechanism (e.g., a species of neural inhibition) which is conceptually distinct from the effect it is attempting to explain. Therefore, Macmillan's (1991) claim that repression is nonexplanatory and "has no potential to refer to real processes" comes to nothing, since the terms and operation of the repressive relation are stipulated. However, this is not to deny that Macmillan's claim has a *prima facie* legitimacy. As the earlier discussion demonstrates, some accounts of repression are vacuous, and it is arguably fair to further say that circular reasoning saturates modern psychology generally, especially in accounts of intelligence and personality traits (see, e.g., Howe, 1990). Thinking through the issue of circular explanation puts the onus on the theorist to demonstrate how the theory is *not* circular (i.e., identifying the terms and relations involved and how they operate to produce effects), and by doing this the theorist develops not only a more clear and exact theory, but also improved knowledge of how best to test the theory under consideration. This is clear from the case of repression above, and as a result, one implication from this account is that possible research avenues are identified in terms of understanding the neural mechanisms implicated in repression (and response inhibition in general). Although the question concerning which structures mediate behavior selection and inhibition is ultimately empirical, it is clear that as our understanding of inhibiting processes increases, so, too, will evidence emerge either for or against Freudian repression.

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