

# A psychobiographical analysis of Brian Douglas Wilson

## Creativity, drugs, and models of schizophrenic and affective disorders.

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### Abstract

The suggestion of a relationship between creativity and mental disorder has existed for centuries, and has been advocated by many psychological researchers. The present analysis offers a consideration of the nature of mental disorder present in Brian Wilson, an individual recognised as one of the most creative figures in 20th century popular music. Using converging biographical evidence, and the diagnostic program Opcrit, Wilson's diagnosis is concluded to be schizoaffective. Employing details of his drug abuse, various models of schizoaffective spectra are examined, in particular a reconsideration of the LSD model of schizophrenia. The model is shown to be useful for positive schizophrenic symptoms including overinclusion, a potentially key element of creativity. In doing so, this psychobiographical analysis allows examination of potential relationships between mental disorder and creativity, the effects of various narcotics on creativity and various elements of mental disorder, the efficacy of various drug models of psychotic disorders, and the overlap between psychotic and affective disorders.

**Keywords:** Schizoaffective, Bipolar, LSD, Drugs, Creativity

# Introduction to creativity, mental disorders and psychobiography

Precedents for psychobiographical analyses of creative musicians exist, but the area is not as heavily researched as it might be. Studies across various disciplines (e.g. creative writing, music, politics, philosophy) have previously suggested a connection between creative potential and the presence of affective disorders (Andreasen, 1987; Ludwig, 1995). Other work suggests links between creativity and various psychotic traits, but the absence of perfect correlations precludes equating psychological disorder with creative talent (Brod, 1997). More recently, Nettle (2001) has made an attempt to draw these ideas together, suggesting that elements of emotional and psychotic disorders overlap and interact, with both being associated with creative potential. At present though, there does not exist any substantial body of work attempting to methodically validate these ideas. Furthermore, the specific consideration of musical creativity remains underrepresented in extant research.

Wills (2003) examined psychopathology in eminent jazz musicians, and found high rates of affective and psychotic disorders, as well as substance abuse/addiction in virtually the entire sample. The study is somewhat of a rarity in reviewing psychopathology and musical creativity in contemporary artists; literature on the relationship between creativity and mental disorder far more commonly concerns either historical musicians (Post, 1994) or non-musical artists (Claridge, Pryor & Watkins 1990). Given the exponential increase in mass media during the twentieth century, a far more intense and accurate degree of analysis is now possible for contemporary artists. The musician Brian Wilson presents an exemplary case for such an analysis, having produced many renowned works, as well as being the subject of a wealth of readily available biographic information.

## Brian Wilson: an introduction

Brian Douglas Wilson is a composer, arranger, producer, vocalist and multi-instrumentalist, most famous for his work as a member of The Beach Boys. He grew up in a Californian suburb with his parents and younger brothers and fellow Beach Boys Carl and Dennis. From the establishment of The Beach Boys, Brian took the role of bandleader and creative force behind the group, though he often came up against opposition from his father and manager, Murry Wilson. Relationships between the two never seem to have been particularly warm, especially in light of allegations of physical and emotional abuse levelled at the Wilson patriarch by his children. Brian Wilson remains musically active at present, both in touring and composing new works.

## Creativity and unusual thinking

Sternberg and Lubart (1999) highlight novel ideas, flexible approaches and appropriateness of outcomes as criteria for creative acts. This emphasises that while creative and psychopathological thinking are both unusual, only the former generates ideas that are recognised as meritorious by other individuals. Not all psychologically ill people are creative geniuses, and the majority of creative individuals show no signs of mental illness (Juda, 1949). Therefore, especial consideration should be given to Sternberg and Lubart's suggestion that the discriminatory factor of creative value is evident from peer attitudes towards creative products. Creativity can be described as novel or unusual approaches that are appreciated by people other than the creator.

Brian Wilson employed musical techniques that inspired contemporaries both within his field (MacDonald, 1998) and without (Ligerman & Leaf, 2004). At the same time, his work garnered commercial success via a string of high-charting singles and million-selling albums, whilst nevertheless retaining integrity in peer reviews (Rolling Stone, 2003). That Wilson employed novel approaches in composition is evident from his use of unconventional instrumentation and compositional methods, which make heavy use of bizarre and idiosyncratic harmonic progressions (Wegman, 2005). Interestingly, his unusual approach to instrumentation seems linked to strange and emotional associations to sounds, e.g. remarking that the sound of the theremin (a rare instrument, which he championed) put him in mind of 'weird facial expressions - almost sexual' (Wilson & Gold, 1991, p. 82). Unusual

thoughts such as these provide the basis for speculation of a link between creativity and mental illness.

In later years, Wilson's song-writing and arranging skills developed to such an extent that he was consistently named as one of the most creative and influential figures in popular music in the latter half of the twentieth century. Unfortunately, as his fame and musical prowess progressed from the year 1964, so too did a range of psychological problems, including heavy drug use. Wilson has been (at different times and by different individuals) said to suffer from unspecified schizophrenia, paranoid schizophrenia, depression, schizoaffective disorder and bipolar depression. Part of the scope of this analysis is to examine how valid these diagnoses were and how any symptoms he shows might best be conceptualised. This is of particular importance in trying to identify characteristics of mental disorder that may impact on creativity when we consider the vast heterogeneity of symptoms present in schizophrenia and related disorders (Buchanan & Carpenter, 1994), of which schizoaffective disorder is an example (Gershon, DeLisi, Hamovit, Nurnberger, Maxwell, Schreiber, Dauphinais, Dingman & Guroff, 1988).

## Consideration of sources

Though various accounts have been given of Wilson's life, these have not necessarily all been reliable: parts of his 1991 autobiography (Wilson & Gold, 1991) have latterly been criticised by biographers and the Wilson estate as being largely ghost-written, supposedly editing details so as to portray Wilson's then psychiatrist/business manager Dr. Eugene Landy in a better light (Carlin, 2006). Though these remarks are oriented more towards how Landy's techniques and business decisions are described in the book (mostly in the second half), it is possible that there is also some fabrication of accounts of Wilson's mental states and biographical details. At the time of the book's publication Wilson was still under the care of Dr. Landy, who was later proven to have taken an exploitative measure of control over Wilson's life. Accordingly, any information used in this analysis has been included only when referred to by two or more biographical sources, and all information from the autobiography has been treated with especial scrutiny, bordering on scepticism. Sources used were: Wilson & Gold (1991), Carlin (2006), Gaines (1995), Ligerman & Leaf (2004), Abbott (2001), Webb (2001), King (2004), Gabel (2000) and (sparingly, and where appropriate) the liner notes to the re-issued albums by The Beach Boys (2000-2001): 'Pet Sounds', 'Smiley Smile/Wild Honey', 'Sunflower/Surf's Up', and 'Beach Boys' Party!/Stack-O-Tracks'.

## Accounts of Wilson's psychological disorders

### Nature and onset of hallucinations

Potentially psychotic aspects of Wilson's disorders are straightforward enough to identify: he suffers from auditory hallucinations, and has also held various paranoid beliefs and delusions. He first reported hearing indistinct voices and screaming in his sleep in 1963 (at age 21), reporting that he was able to stop himself from hearing them as long as he kept working and producing music. This claim ties in with Wilson's reports that at about this age he felt 'a compulsion' to write music constantly, becoming sick and anxious when he did not do so (Wilson & Gold, 1991, p. 72; Ligerman & Leaf, 2004). Compulsion to write music may also be an early indication of safety behaviours and attempts to regain control of his environment, given that Wilson has often made reference to experiencing anxiety in the presence of others, as well as reticence in engaging in interpersonal relations.

His strange behaviours deepened with time: by 1964, he would often become obsessed with tiny details (e.g. counting the number of tiles on a floor, the number of peas on a plate, the number of stitches on an aeroplane seat), and by 1966 he would conduct important conversations only in his home swimming pool, as he believed his house was filled with hidden recording devices. More overtly psychotic symptoms gradually worsened as Wilson entered his mid-twenties, particularly his auditory hallucinations which went from indistinct recollections of hypnagogic experiences to fully formed speech that reminded him of critical remarks made by his father (Carlin, 2006). As Wilson

grew older, the voices he heard grew more frightening; in 2004 he reported that when he experienced them, they would threaten to kill him and his family (Ligerman & Leaf, 2004).

Though these hallucinations are clear indication of some sort of psychiatric disorder, there is conflicting evidence regarding Wilson's drug use relative to the onset and development of such symptoms. His autobiography claims that he was hearing hallucinatory critical remarks in the second person by 1964, though more recent interviews place the beginning of these episodes after he had first used d-lysergic acid diethylamide-25 (LSD) in 1965. This distinction is crucial, given the ambiguous relationship that LSD has with psychotic symptoms: in a review of literature on the drug, Strassman (1984) emphasises that no causal link between LSD use and subsequent development of psychotic traits has been established, but this argument is somewhat undermined by the review's concession that drug experiences may act as precipitating factors in the incidence of schizophrenic episodes. Considering drug use is prevalent among sufferers of schizophrenia and related disorders (Soyka, Albus, Kathmann, Finelli, Hofstetter, Holzbach, Immler & Sand, 1993), the specific nature of potential effects here are difficult to resolve, and it is unfortunate that currently no definitive source of information exists on when Wilson began experiencing verbalised auditory hallucinations relative to his first LSD experience.

Having said this, Wilson began using marijuana recreationally in 1964, with his use gradually increasing, especially following his retirement from live performances in 1964. Cannabis seems to play some role in the development of psychosis, be it a primary effect of the substance or a secondary effect due to subjective cognitions associated with its use (Hall & Solowij, 1998). Such effects have yet to be conclusively proven in normal individuals, though the drug has been shown as an independent risk factor for psychosis (Andréasson, Allebeck, Engström & Rydberg, 1987; Caspari, 1999) in individuals with predispositions towards mental disorder (Linszen, Dingemans & Lenior, 1994). Wilson may have had such a predisposition: despite an absence of reported unpleasant hallucinations prior to 1965, he consistently reports a curious subjective experience of constantly hearing music ('musical hallucination', cf. Sacks, 2007), dating back as far as he can remember. Furthermore, this phenomenon appears to be integrally related to his song-writing and arrangement (i.e. his creative ventures), where he would supposedly hear completed songs in his head before hearing them performed, baffling session musicians and bandmates who claimed that their parts would often make little musical sense before being heard in the context of the full arrangement of the piece.

## Delusions

Wilson's delusions were various and wide-ranging. Perhaps the earliest example was, in 1964, a belief that his bandmate Mike Love was having an affair with his wife (Wilson & Gold, 1991). With time, his delusions became more outlandish: as well as the aforementioned suspicions that his house was bugged, he became convinced that recording a song about fire had caused a nearby building to burn down, and he once refused to let a business associate's wife into the recording studio because he believed she was a witch trying to control his mind (Carlin, 2006, p. 119).

## Depression

That Wilson exhibits symptoms of affective disorder is given strong empirical support by the relative effectiveness of different drugs that he has been prescribed. Initially diagnosed as a paranoid schizophrenic by the controversial Dr. Landy in 1983, Wilson was heavily medicated with anti-psychotic drugs; so much so that he developed tardive dyskinesia (Carlin, 2006, p. 271). All sources referring to the medication he was taking until 1992 are no more specific than mentioning 'psychotropic drugs', though the development of tardive dyskinesia implicates medication with phenothiazines, and it is likely that chlorpromazine would have been used in such an instance (Starks & Braslow, 2005).

Psychiatric evaluations between 1992 and 1994, after Wilson had left Landy's care, favoured diagnoses of schizoaffective disorder and mild bipolarity. This led to a change in Wilson's prescriptions: to anti-depressants, and in a far more moderate dosage (Carlin, 2006, p. 280). These appear

to have led to a greater lucidity and subjective sense of well being, which may however have been due to his transference to a less oppressive environment: whilst in Landy's care, Wilson was separated from his family, and put under strict regimes of diet and timetabling. The positive mood effects following this change of medication are said to have come together with a reduction in the frequency and severity of Wilson's auditory hallucinations. At the time of writing, Wilson's hallucinations are still present, but are episodic, and he reports feeling better able to cope with them (Ligerman & Leaf, 2004). Whether this is a primary psychopharmacological effect of the new medication or a secondary effect due to his improved emotional state is difficult to say.

Other than improvements as a result of treating his disorder with antidepressants, there is biographical evidence that Wilson suffered from depressive episodes. He and others have noted him suffering periods of low mood and general disinterest in doing anything of his own volition, even growing bored of writing music, the one thing that he had previously claimed always offered some sort of solace. He has also shown episodes of vast weight gain and expansion in appetite, gaining over 100lbs between 1973 and 1975 (Wilson & Gold, 1991), clearly evident in photographic evidence from this period. Other depressive symptoms he has shown include sleeping or staying in bed for most of the day, and suicidal ideation that may have resulted in legitimate suicide attempts (Wilson & Gold, 1991; Carlin, 2006; but see Whitworth, 2004).

These episodes are typified by a period between the summer of 1973 and the end of 1975 where Wilson experienced all of the above, as well as refusing to groom himself for weeks at a time. Examples of his binge eating at this point included eating three to six hamburgers a day for lunch, and eating a dozen eggs and a loaf of bread for breakfast. Wilson himself has noted that when he was over-eating, he would often consume sweet, fatty, or unhealthy food. Even at a conservative estimate, it seems that this period qualifies as a major depressive episode (MDE) according to DSM IV-TR classification (American Psychiatric Association [APA], 2000). A biographical note regarding the onset of this specific episode is that Wilson's father (with whom he had always had a strongly emotional and rather unhealthy relationship) died on the 4<sup>th</sup> June 1973, shortly before the episode's onset. Though this may have acted as a trigger for depressive symptoms, there can be little doubt that what Wilson experienced cannot be fully accounted for by bereavement, given that the symptoms persisted for well over two months, and he was subject to marked functional impairment (criterion E for Major Depressive Episodes, regarding bereavement, APA, 2000), evidenced by his sudden decrease in rate of writing music (The Beach Boys, 2000).

## Hypomanic qualities

Wilson clearly exhibited depressive symptoms, but evidence of hypomanic episodes is somewhat subtler and more elusive. There are a number of possible reasons for this: Wilson may not have suffered from mania; it could simply be the case that manic episodes were less pronounced and less common than his depressive symptoms; or it could be that his mania was manifest in irritable moods and other forms that may seem less obviously 'manic' (cf. criterion A of the manic/hypomanic episode classification, APA, 2000) than a prolonged elated mood. It might alternatively be the case that Wilson was subject to mixed episodes, and as such any manic symptoms may have been overlooked due to depressive elements of his disorder, presumably more salient as they are less characteristic of how a pop singing sensation is expected to behave. Having said this, most biographical accounts make some reference to Wilson experiencing 'mood swings', two notable examples being: 'Some days Brian would stay in bed, gazing vacantly up at the ceiling... Other days he would jump out of bed with all the energy and enthusiasm he had ever had' (a description of Wilson in 1967, from Carlin, 2006), and the description of Wilson as 'crying one minute, laughing hysterically the next for no reason' by Wilson's ex-wife Marilyn, who claimed that these mood swings gradually grew 'wider, more unpredictable' after Brian's first experience with LSD in 1965 (Wilson & Gold, 1991).

Furthermore, there is evidence of events in Wilson's life that, even if they did not form part of a manic/hypomanic episode *per se*, certainly show evidence of being symptomatic of such states. These include periods where he would stay awake for prolonged periods of time, experience highly goal-motivated periods of activity and flights of ideas (the recording and writing sessions for the albums

Pet Sounds and SMiLE, respectively), as well as various rash business decisions (most infamously the opening, on a whim, of a 24-hour health food shop, which he had no idea how to manage. The shop quickly failed). Even if these symptoms did not co-occur, they are still indicative of hypomanic symptomatology, and given that they occurred together with Wilson's depression over a period of years, this would suggest at least some sort of cyclothymic disorder, as defined by the DSM IV-TR. However, given that Wilson experienced what seems to be an MDE—an exclusion criterion for cyclothymic disorder proper (APA, 2000)—the diagnosis of mild bipolar disorder reportedly given by his doctors does appear to be the most appropriate. If we accept the previous diagnosis of an MDE, then type II bipolar disorder would be the most likely candidate, as it requires at least one incidence of an MDE (bipolar I disorder does not, but does require a manic episode).

### **Finding an appropriate clinical framework for the observed psychoses**

There is good evidence that Wilson experiences hallucinations and delusions, and these (perhaps more likely in the case of the former) may be related to his creativity. However, as defined by the DSM IV-TR, schizophrenia (the disorder most commonly associated with these symptoms—cf. Rosenhan, 1973) contains an exclusion criterion whereby the disorder can only be diagnosed if the symptoms present cannot be alternatively explained by schizoaffective or bipolar disorders. The heterogeneity of Wilson's symptoms together with the problem of hierarchical exclusion criteria potentially confuses diagnosis. The computer program Opcrit v4.0 (McGuffin & Farmer, 2004) was therefore used in an attempt to resolve this diagnostic issue.

### **Attempted verification of diagnoses with the Opcrit program**

Opcrit 4.0 (McGuffin & Farmer, 2004) is a computer program that rates an individual's psychopathology scores on 10 different diagnostic schemes (and 3 subsystems determining schizophrenic subtypes) following the completion of a 90-item checklist. An intrinsic feature of the Opcrit program is that it can be configured to generate diagnoses from a number of different sources, for example: hospital notes, structured interviews and (as was used in the present analysis) a combination of various sources not including a structured interview. Although Opcrit was initially developed for use in clinical diagnoses, there is precedent for its use with psychobiographical information. Claridge (1998) employed the program in a manner very similar to that used here, generating diagnoses from biographical information of creative individuals.

Data from all available sources were compiled and used to complete the Opcrit checklist. This was performed as conservatively as possible: evidence was only used when timeframes were evident and when corroborated by reliable sources. In instances of ambiguity (examples here being changes in the nature of speech/communication, and any items relating to libido), items were coded as absent, so as to ensure the most stringent analysis possible given the non-clinical form of the sources of evidence. Despite this, Wilson emerged with definite diagnoses on nine of the program's ten main diagnostic schemes (see Table 1).

It is clear from these results that Wilson presents with diagnostically significant psychotic and affective symptoms. The diagnosis of 'schizoaffective disorder' is supported by those four diagnostic schemes that use this terminology, while the other schemes support the identification of both schizophrenia-related and mood disorders. Any uncertainty presented by this set of outputs relates to the specific nature of the affective component of Wilson's disorder - namely that there is a split between diagnoses of bipolar (DSM, RDC) and unipolar (Taylor & Abrams, ICD) depression. This echoes earlier concerns of this psychobiographical analysis, and the absence of a definite bipolar diagnosis may reflect the conservative approach used in the data entry. Finally, there is some slight ambiguity in Wilson's classifications on the schizophrenic subtypes. He emerges as paranoid type on Farmer's classification, but conversely as hebephrenic type via the Tsuang and Winokur system. Taken together with the verdict of 'mixed type' from Crow's classification this would suggest that a purely schizophrenic framework is inappropriate for Wilson's disorder, as he demonstrates a mixed symptomatology with clear manifestations of positive, negative and affective syndromes.

| Diagnostic System        | Diagnosis                                |
|--------------------------|--|
| DSM-III                  | Atypical psychosis                       |
| DSM-III-R                | Schizoaffective disorder, bipolar type   |
| DSM-IV                   | Schizoaffective disorder, bipolar type   |
| ICD-10                   | Schizoaffective disorder, depressed type |
| Feighner                 | No diagnosis                             |
| Taylor & Abrams          | Depression                               |
| RDC                      | Schizo-affective / bipolar               |
| Carpenter                | Level 5 schizophrenia                    |
| Schneider FRS            | FRS-Schizophrenia                        |
| French Classification    | Chronic schizophrenia                    |
| Crow subtype             | Mixed                                    |
| Farmer subtype           | P type                                   |
| Tsuang & Winokur subtype | Hebephrenic                              |

Table 1: Showing the various diagnoses and subtypes for Brian Wilson generated by Opcrit 4.0

All considered, the extent to which these ratings resemble both the initial speculations of the present report and Wilson’s reported diagnoses is encouraging. It bears mentioning that even in their ambiguity, the outputs lend themselves to interpretation as the mild type II bipolarity postulated earlier. Given the preponderance of depressive symptoms in such a disorder (and the fact that Opcrit makes no distinctions between bipolar types I and II) mild type II bipolarity would seem the most plausible conclusion given the outputs. The Opcrit program lends strong, clinical support to the analysis and validates the use of a schizoaffective framework. Furthermore, the outputs—mainly atypical psychoses and schizoaffective disorders—resemble diagnoses from a range of creative individuals (Claridge, 1998), supporting ideas that such disorders are closely related to creativity.

## Family effects and the Wilsons

### Genetics

In contrast to consistent findings of high correlations within families of psychotic, schizophrenic, and schizotypal symptoms (Grove, Lebow, Clementz, Cerri, Medus & Iacono, 1991), no reports of explicit hallucinations are given for Wilson’s first-degree relatives, nor does there seem to be any family history of such psychotic qualities. However, there is strong evidence of other forms of psychological disorder among Wilson’s close family, implicating a potential genetic vulnerability to psychopathology, even if there is heterogeneity in symptom presentation.

Brian’s father Murry has been described as domineering and abusive by Brian, Dennis, and Carl Wilson, as well as various neighbours of the Wilson family (Carlin, 2006). There is also evidence that Murry Wilson suffered from what may have been an MDE: after being dismissed as manager of The Beach Boys by Brian, Murry took to his bed for a period of between three weeks and a month, with a noticeable loss of motivation: ‘He could barely summon the will to change out of his pajamas at first’ (Carlin, 2006). Brian’s current wife Melinda has explicitly referred to Murry as having suffered from depression (Whitworth, 2004), though this comes with the caveat that she never met him, and no biographical evidence exists to suggest that he was treated for such a disorder. Brian’s mother is purported by Wilson & Gold (1991) to have abused alcohol (supposedly as a way of dealing with the intense and violent Wilson home environment), but this claim should be regarded sceptically, as it does not appear in any other sources. Both of Brian’s brothers suffered from addictions to various substances: Carl to alcohol and cocaine, Dennis to alcohol, cocaine and possibly heroin (he used the latter on multiple occasions, but the actual frequency and nature of his use is unclear).

The prevalence of substance abuse and dependence in Wilson’s close family is of particular interest when we consider that clinical and biological similarities between drug abuse (as opposed to recreational use) and mental disorders have been identified (Davis, 2001). As luck would have it,

the environment of The Beach Boys provides an interesting natural experiment: assuming that all members of the group were exposed to the same kinds of situations in which drugs would have been available and accessible, only the Wilson brothers developed dependencies. The other three members of the band, one of whom (Mike Love) was a first cousin of the Wilsons, used drugs recreationally without becoming addicted.

The findings of Volkow, Fowler & Wang (1999) may elucidate the observed family effects relating to drug abuse and mental disorder. This research into dopaminergic reward systems and cocaine use suggests a biochemical predisposition (such as having significantly fewer D2 dopamine receptors) that enhances the hedonic aspects of the drug. These findings support the potential involvement of dopaminergic systems in genetic susceptibility to psychological disorder in the Wilson family. Furthermore, there is evidence to suggest that abnormalities in dopamine receptors may be related to bipolar disorder (Pearlson et al. 1995). Interestingly, dopamine tends to also be linked (with far greater regularity) to schizophrenia and other psychotic disorders (Meltzer & Stahl, 1976; Grace, 1991), albeit in this case with an excess of the neurotransmitter rather than deficiencies in receptors. No current framework exists to attempt to resolve these findings. Despite this apparent lack of clarity, there does seem to be familial evidence among the Wilsons of divergence from norms, evident in mood and likely rooted in biochemistry. More directly observable in the current analysis though is the role that Wilson's family environment may have played in forming his personality and psychological disorders.

## Family environment

One widely documented aspect of Wilson's family environment is that of the relationship between Murry Wilson and his children, specifically the physical abuse he administered. This has been consistently reported across biographical accounts of Brian Wilson and the Beach Boys alike, and typified by Dennis Wilson's quote 'He used to whale on us' (Webb, 2001). More doubtful though is the extreme psychological torment recounted in Wilson and Gold (1991), which includes claims that Murry once summoned his family into the kitchen so he could shout at them that he was 'King of [the] goddamn family. I'm the goddamn king' whilst standing naked on a table; and that he once forced Brian to defaecate on a newspaper in front of both his parents. Due to Brian's inconsistent memory, it is difficult to either prove or disprove these stories. As an example of his confabulation, he has variously attributed the deafness in his right ear to congenital nerve defects (Wilson & Gold, 1991); an early beating administered by his father (Ligerman & Leaf, 2004); and an accident involving a neighbourhood boy (Carlin, 2006). Though Brian no longer recounts the more extreme accusations of Wilson & Gold (1991), he has recently claimed (Ligerman & Leaf, 2004) that the beatings he experienced as a child were so severe that his stance was cowering and hunched until high school age.

Although the absence of striking psychotic (hallucinatory/delusional) symptoms in Carl and Dennis Wilson limits the influence ascribable to Murry's behaviour on the specific presentation of Brian's symptoms, physical abuse has been shown to be a significant independent risk factor for major depressive and dysthymic disorders, drug use, and cigarette smoking (Kaplan, Pelcovitz, Salzinger, Weiner, Mandel, Lesser & Labruna, 1998), as well as other affective disorders (Herman, Perry & van der Kolk, 1989). These points are especially pertinent in light of the fact that, although Carl and Dennis Wilson were never diagnosed as having psychotic or affective disorders, they did both suffer from drug and alcohol abuse and addiction. A healthy family environment has been shown to act as a protective factor for schizotypal traits (Raine, 2006), and childhood trauma has been identified as a significant independent risk factor for psychotic symptoms (Bak, Krabbendam, Janssen, de Graaf, Vollebergh & van Os, 2005; Janssen, Krabbendam, Hanssen, Bak, Vollebergh, de Graaf & van Os, 2005) and schizophrenia-related disorders (Read, van Os, Morrison & Ross, 2005). Accordingly, the abuse that Brian Wilson suffered may well have contributed to his psychotic symptoms. Murry would often make needless, malicious criticisms of Brian's music; Brian has alleged that these critical remarks provided the template for his earliest (vocalised) auditory hallucinations, as well as some strange behaviour that may well have been delusional. For example, in 1980 Brian attacked a psychiatrist for lighting a pipe in a way that resembled his father (Carlin, 2006). It seems

a viable assertion that Murry Wilson's specific actions and the general abusive nature of the familial environment in which Brian grew up provided an independent contribution to his various mental disorders.

## Drug Use

Another external influence upon Brian Wilson's psychology was his substance abuse. This included extensive, excessive use of cannabis, cocaine, amphetamines, cigarettes and caffeine, as well as sporadic use of LSD, and over-medication with prescribed sleeping pills when isolated from his drugs of preference. Aside from the role previously hypothesised for these drugs exacerbating certain of Wilson's symptoms, there seem to have been distinct conscious reasons for his use of each. These points afford a unique insight into the influence of such substances on creativity and mental illness, as well as offering dissociations between the actions of different drugs - a useful consideration for drug models of psychological disorders.

The roles that caffeine and cigarettes played for Brian are easily explicable as consequences of his depression and his lifestyle, both coinciding as they did with Wilson's years of depression, weight gain, and cocaine addiction. A concise overview of both of these overindulgences is given in the opening chapter of Wilson & Gold (1991), where they are portrayed as habitual excesses, as opposed to being used for any sort of high. This is exemplified by Wilson's behaviour in 1978, where he would spend hours at a time lying on his couch, staring up at the ceiling and smoking constantly (Carlin, 2006).

## Cannabis

Wilson was originally recommended cannabis by a friend, and enjoyed the new perceptual experiences afforded by its effect. Soon after this, he began using the drug explicitly for creative purposes, and he cites its influence in his decision to use bigger, denser sounds in music production, employing orchestral instrumentation as opposed to the simpler and more conventional rock arrangements that he had favoured for earlier tracks (Wilson & Gold, 1991, p. 114; Ligerman & Leaf, 2004). This finding is interesting in light of observations by Fachner (2006), who explains the greater incidence of cannabis use among musicians (compared to other artists) with data suggesting that marijuana subjectively enhances certain aspects of music by intensifying sensory perception with regard to duration, loudness, pitch, and timbre. Since many musicians have been documented as changing 'their sound' as a result of using cannabis (see MacDonald, 1998 for an excellent overview of these changes in many popular bands in the 1960s), it may be that the drug does indeed offer creative insight for the musician. In contrast, Bourassa & Vaugeois (2001) found no effect upon divergent thinking (a common test of creative potential, e.g. Wallach & Kogan, 1965) due to cannabis in novice users, and found a detrimental effect in regular users, suggesting that the drug has no direct influence on divergent aspects of creativity. At the same time, it is not hard to see how allowing proficient musicians new perceptual insights in listening to music could produce novel results (cf. Sternberg & Lubart, 1999): that is to say cannabis may be associated with creative acts, but only when musical creativity is already the individual's wont. These perceptual insights are orthogonal to measures of divergent thinking, and neither provides a full account of creativity.

Cannabis is also notorious for its supposed induction of psychotic episodes; both in short term cannabis psychosis and in hypothesised links to schizophrenic symptoms. Hall & Degenhardt (2000), in a review of such possibilities, suggest that though the former is a verifiable risk of overindulgence in the drug, the latter point remains unproven. Data implying that schizophrenic symptoms can be induced in normals as a result of using cannabis are lacking, but there is evidence to suggest that it may act as an independent risk factor for such symptoms where the individual already has some predisposition to mental disorder (Andréasson et al., 1987; Caspari, 1999) and that cannabis use can be considered a stressor likely to result in relapse among schizophrenic individuals (Linszen et al. 1994). The evidence from Brian Wilson lends some support to these ideas, but at the same time may be indicative of a more subtle interaction of factors. For example, drug use may have affected his psychology and behaviour indirectly in terms of how he approached the substances, and the initial

use may have been associated with adverse life experiences (e.g. high stress). These extraneous variables are impossible to control for in retrospective analyses.

As well as the previous speculation about the involvement of marijuana in the first incidence of Wilson's auditory hallucinations, he suffered what appears to have been a panic attack shortly after his first experience with cannabis, in 1964. In this incident, Wilson experienced a sudden onset of intense fear and anxiety on a plane, despite having had no previous disinclination towards air travel. The episode involved him screaming for his wife Marilyn, whilst running around the aircraft shouting for the plane to land. However, the timing here may be coincidental, given the mounting pressures of writing and touring that were then affecting him: as well as touring internationally, Wilson had, by June 28th 1964 (age 22), produced ten LPs in less than three years. It seems unlikely that this episode would be directly attributable to the effects of cannabis, given that Wilson has said that he would use the drug to relieve anxiety, initially together with the creative influence that he felt it gave him (Wilson & Gold, 1991) but subsequently more and more for recreational reasons (Carlin, 2006). This assumption seems to better suit past research on cannabis, noted for its relaxant effects (Wachtel, ElSohly, Ross, Ambre & de Wit, 2002).

## LSD

The other drug that Wilson used with creative intent was LSD. Wilson has cited the drug as being greatly influential on his creative apex 'Pet Sounds', but perhaps indirectly. Although it is a widely reported story that the influential single 'California Girls' was composed under the direct influence of LSD (i.e. whilst tripping), Pet Sounds shows a secondary influence of the drug, derived from Wilson's reconsideration of sonic and perceptual experiences in reflection of the trip itself. Moreover, the poignant introduction of California Girls, which at first glance reflects more hallmarks of a stereotypical 'drug influence' (slow, wordless, unconventionally orchestrated), was in fact written later, with the portion composed whilst under the drug's influence being nothing more than a straightforward and derivative rhythmic figure that Wilson sat and played at a piano for half an hour (Ligerman & Leaf, 2004; Wilson & Gold, 1991). This remains noteworthy, though, as such repetitive rhythmic figures would later come to define Wilson's approach to song-writing after Pet Sounds, from 1966 onwards (Wegman, 2005). During this time his behaviour became increasingly erratic and his delusions reached a stage where they were interfering with his normal functioning (e.g. halting work and destroying music because he believed that it had unnatural power, as he did during the recording of the song 'Fire' in 1967; purposely avoiding people or leaving his room as a coping method for his increasingly severe auditory hallucinations), suggesting that his symptoms were becoming pathological.

Around this time, Wilson's auditory hallucinations also started worsening, until by 1969 they had all the characteristics recognisable in his contemporary hallucinations (namely those of accusations and threats in the second-person, making liberal reference to the devil). Though Wilson indulged in LSD far less than other drugs he used (various sources stating that he took it no more than three times), it would seem foolish to discount the role the substance played in his mental degradation post-1965, especially in light of circumstantial evidence of similarities between LSD psychosis and actual psychosis (Young 1974; Vardy & Kay, 1983) and more explicit findings that LSD presents a significant independent risk for psychosis in predisposed individuals (Abraham & Aldridge, 1993; Vardy & Kay, 1983). Furthermore, only the truly cynical would discount its additional effects on his creative exploits. The question thus begins to emerge of whether this creative enhancement is related to the exacerbation of his mental disorders, and how far LSD may be accountable for each of these. This question will be addressed shortly, but is perhaps better viewed in light of a full account of Wilson's drug use.

## Amphetamines

Though not expressly used as a creative tool in the way of cannabis and LSD, amphetamines quickly became an integral part of Wilson's working process after he started using them in 1967. During the writing sessions for SMiLE (the abandoned album that was to follow Pet Sounds), Wilson

and his lyricist Van Dyke Parks would take vast quantities of amphetamines to allow them to work on their songs late into the night, for hours at a time. Thus amphetamines initially helped Wilson with issues regarding motivation and concentration: compare these speed-fuelled writing marathons with the writing sessions for *Pet Sounds* (a year earlier), where he would wake up in the early afternoon, procrastinate by watching children's television after his lyrical co-writer had arrived, and take frequent breaks once song-writing had begun.

Given Wilson's subsequent diagnoses and depressive episodes, one might claim that amphetamines were initially used in self-medication to allow him to continue to function as a songwriter by relieving the cognitive (focus-based) and physiological (tiredness-based) impairments that he was then experiencing. Certainly, self-medication has previously been shown to be closely associated with psychotic disorders (Haas, Weiden, Sweeney & Frances, 1991). The possibility that he may have used amphetamines as a self-medicating treatment for problems in focusing on work is tantalising evidence for an overarching concept of schizotypy and affective disorder in Wilson, given that impairments of volition are hallmarks not only of depression (Drevets & Todd, 1997), but also schizophrenia, particularly in how negative symptomatology maps onto avolition in a manner phenomenologically akin to depression (Lysaker & Bell, 1995).

## **Alcohol and cocaine**

Further evidence for self-medication comes from Wilson's use of alcohol and cocaine. Alcohol appears to have been the first substance that he used heavily, in this case to calm intensely anxious spells that he experienced while touring until 1964 (Wilson & Gold, 1991). This anxiety relief was later supplanted by cannabis, together with its use in creative endeavours. His introduction to cocaine came in 1968, upon a friend's advice. He began overusing the drug and quickly became addicted, consuming it in excess, especially when he resumed touring in 1977. In this period there was little question of any drugs being used for creative purposes, given that by this point Wilson rarely wrote new songs, and certainly did not seek to push himself creatively when doing so (Carlin, 2006, p. 239). Instead his attitude towards drugs was characterised more by a desire to change his normal functioning, once again suggesting the likelihood of self-medicating.

## **Drug models of Wilson's disorders**

As noted by Claridge (1994), both amphetamines and LSD have been used to model schizophrenic symptoms, with varying successes; amphetamine models are more widespread and benefit from heavier research (Claridge, 1978). Admittedly, they tie in well with the dopamine hypothesis of schizophrenia (Meltzer & Stahl, 1976; Willner, 1997), a theory supported by observational similarities between amphetamine addicts and schizophrenics, as well as psychotomimesis from amphetamines that is reversed upon administering anti-psychotics (Griffith, Cavanaugh, Held & Oates, 1972). Furthermore, anti-psychotic drugs such as chlorpromazine block dopamine receptors in the brain (Abi-Dargham, Rodenhiser, Printz, Zea-Ponce, Gil, Kegeles, Weiss, Cooper, Mann, Van Heertum, Gorman & Laruelle, 2000). However, Claridge (1994) suggests that these findings do not serve as the most accurate drug model of psychosis available, drawing attention to the facts that amphetamine modelling of the disorder only reproduces a limited number of features, and even then only with very high or chronic doses, and only in individuals with predispositions to psychotic symptoms. This suggests that abnormal dopamine levels are secondary in the disorder. Evidence from Brian Wilson then provides a basis to emphasise the effects of LSD in accelerating schizophrenia-like symptoms.

## **LSD models of schizophrenia-related disorders**

LSD models of schizophrenia focus on perceptual effects. The experiences that the drug elicits resemble positive aspects of schizophrenia as given by the DSM IV-TR, including delusions, hallucinations and disorganised speech/behaviour. Admittedly, LSD has not been shown to mimic negative effects of schizophrenia - and as such cannot be claimed to be a comprehensive model of the disorder

- but a reconsideration of existing research into this area, together with other schizophrenia research and information from the case study of Brian Wilson, could prove highly informative.

The main thrust of LSD modelling of schizophrenia is that the drug disrupts serotonergic activity (Woolley & Shaw, 1954), likely by virtue of the fact that it resembles serotonin in its functional groups and as such affects sites of serotonergic action in the brain (Bennett & Snyder, 1976). Disrupting serotonergic activity interrupts perceptual pathways in which the neurotransmitter is implicated (Mehl, Rther & Redemann, 1977); this disruption could then lead to a mismatch between external stimuli and subjective perceptual experience, evidence for which abounds in available LSD research.

Claridge (1994) highlights findings of dissociations between visual stimuli and physiological responses in humans under the influence of LSD. Under low general arousal conditions the drug led to selective and progressive enhancement of visually evoked potentials (VEPs) from light flashes (measured by electroencephalogram, EEG), as a function of stimulus intensity. Instead of a linear effect of EEG signal increase with increases of stimulus intensity (seen in absence of the drug), there was a greater rate of increase in the neurophysiological responses to stimuli when these were more intense. These results demonstrate dissociation between external stimuli and subjective responses in terms of sensory, autonomic and somatic arousal, giving empirical demonstration of subjective reports of disengagement from reality as a result of LSD use (Linton & Langs, 1962). Claridge & Clark (1982) found identical perceptual dissociations in a schizophrenic sample, suggesting that LSD is an effective model of this aspect of schizophrenic functioning.

However, merely showing that LSD leads to perceptual aberrations comparable to some aspects of psychosis is not enough for a viable model of schizophrenia-related symptoms. Though researchers such as Young (1974) have stated that psychoses induced by LSD and schizophrenia are phenomenologically indistinguishable, the model is lame without a framework to link such observations. Jacobs and Trulson (1979) propose that the serotonergic disruptions seen when administering LSD to animals consistently serve to produce hyperactivity and hypersensitivity to all environmental stimuli. They suggest that the normal functional role of the affected serotonergic neurons is therefore to modulate an organism's behaviour, providing focus and subjecting action to certain limits and constraints.

Impairment of selective attention is a fundamental deficit in schizophrenia (Kornetsky & Markowitz, 1975). Studies using dichotic listening to examine attention in schizophrenic patients have shown abnormalities inferring atypical filtering of information into the nervous system (McGhie, 1969). The notion of a defective attentional filter could potentially explain these findings and others mentioned earlier, especially if the filter were controlled by serotonergic systems. Though there is scant neurophysiological evidence to clarify what the neural mechanisms themselves might be, the idea of a dysfunctional cognitive filter has been proposed as a model for the disorder by Payne & Hewlett (1960), supported by cognitively disordered performance of schizophrenic patients on object-sorting tasks (Payne, Hochby & Hawks, 1970). The case study at hand provides support for suggestions of an impaired attentional filter in schizophrenia-related functioning: Brian Wilson appeared to suffer from such impairments, attested to by reports of his poor driving skills, rooted in an inability to selectively attend to a single stimulus (i.e. not becoming distracted by extraneous noises and traffic) for prolonged periods of time (Carlin, 2006).

The specific model of attentional aberration that best fits the observed data seems to be Cameron (1947)'s identification of 'overinclusion': schizophrenics' tendency to incorporate irrelevant environmental information into subjective experience, and inability to maintain concise conceptual boundaries. Payne (1971) attributed this effect to a defective cognitive filter. Indeed, overinclusion adequately explains the greater variability of schizophrenics' EEG evoked potentials, both visual (Rappaport, Hopkins, Hall & Belleze, 1975) and auditory (Callaway & Jones, 1975; Callaway, Jones & Layne, 1965). Overinclusion therefore seems a good starting point for a theory of schizophrenia-related functioning, informed as it is by the positive symptoms akin to the cognitive disorder component of schizotypy (Mason, Claridge & Jackson, 1995).

However, the LSD model of schizophrenia is far from being conceptually complete, as it falls short of providing a complete mimicry of positive schizophrenic episodes. A good example of this is that when Brian Wilson experienced an 'acid flashback' ('post-hallucinogen perceptual disorder': recapitulation of LSD's effects in the absence of actually taking the drug—APA, 2000) in 1965, he

recognised it as qualitatively distinct from his other positive symptomatological experiences (Wilson & Gold, 1991). Even if the perceptual effects reported in LSD influence (Claridge, 1994) and schizophrenia (Claridge & Clark, 1982) are identical, there are obviously other components that contribute to the subjective experience of the disorder. This shortcoming, together with the model's inability to explain negative symptoms of schizophrenia, is clear evidence that LSD cannot model schizophrenia-related disorders in their entirety. However, what it does offer is an insight into the often-linked and just-as-often-debunked co-incidences of mental disorder, LSD use, and creativity.

## **Overinclusion in creativity and schizophrenia-related functioning**

There are two key points here: firstly that of overinclusion, and secondly that in the case of Brian Wilson, the only drugs that he and others claimed changed his personality and creative attitudes were cannabis (the creative role of which has already been explained in some way by possible perceptual effects on audition) and LSD. Cocaine and amphetamines by contrast seemed to have had little effect beyond relieving depressive symptoms. Drug use for self-medication is frequently observed in individuals with schizophrenia-spectrum disorders (Dixon et al., 1991). Since LSD may foster or exacerbate the effects of overinclusion, we would assume that this second point is crucially related to the first.

At the risk of trivialising the eternal plight of the artist, overinclusion seems to be the mechanism by which the divergent thinking component of creativity (at least in Wilson's case) may operate. This echoes Eysenck (1995), who postulated overinclusion as the mechanism for allusive thinking in both schizotypal individuals and creative normals. As previously mentioned, LSD mimics schizophrenic functioning in that it impairs the serotonin-influenced cognitive filter for information, which presumably allows for a wider spread of information to be incorporated into the attentional window. This sits well with the impairments of selective and sustained attention that characterise schizophrenia-like processing (Kornetsky & Markowitz, 1975; Juda, 1949).

Furthermore, Woody & Claridge (1977) report findings that individuals at higher risk for psychotic symptoms show higher divergent thinking, together with overinclusion. Perhaps most intriguing though are studies showing that overinclusion apparently leads to greater generalisation of learning and knowledge. For example, Key (1961) showed that (unlike amphetamines) LSD's ability to alter the significance of stimuli led to a greater generalisation of conditioned responses in cats. Similarly, Mednick (1958) found greater generalisation and sensitivity to remote emotional cues in schizophrenic patients, via a higher responsivity to stimuli remotely associated to those presented. This corresponds to the 'novelty' aspect of creativity (Sternberg & Lubart, 1999); creative individuals may make associations between items which to the general population would seem distantly related. This is evident in the case of Brian Wilson from strange associations seen in his comments about the theremin, as well as his use of unconventional orchestration.

### **Overinclusion and other factors in Wilson's creativity**

As previously mentioned, the thinking of psychiatric patients is not creative; it is pathological. Overinclusion explains how unusual combinations of thoughts may arise, but - as evidenced by thought disorder—not all unusual thoughts are creative. Creativity diverges from simple expertise by being unusual, but this also implies that aspects of expertise are necessary for thought to be truly creative. In terms of the current argument, there is likely a significant contribution of overinclusion to Wilson's creativity, but there must also be other factors at work.

Intelligence is often implicated in creative success as necessary, but not sufficient, for creativity (Brod, 1997). Claridge & Beech (1995) suggest that it may act as a moderating variable serving to 'guard against' the most serious expressions of mental disorder. Though Wilson did briefly attend college, he was not necessarily particularly intelligent in academic terms. However, his musical intelligence (not to be confused with instrumental virtuosity, where he was proficient, but not outstanding) was nothing short of extraordinary. This is evidenced throughout his life from

an absurdly precocious start to musicality: being able to hold a tune before he was able to speak (Wilson & Gold, 1991), continuing through to casual displays of exceptional musical talent, e.g. arranging a six-part horn piece whilst conducting a conversation, in the midst of a period of drug abuse and depression (Carlin, 2006).

Although musical proficiency did appear to run in the Wilson family (Carlin, 2006, pp. 5–9), Brian outstripped all his relatives in skill. Whether this talent (as distinct from creativity) is directly related to his mental disorders is debatable, and has little precedent in the literature, but it can be reported with little doubt that his high musical intelligence is certainly a factor in his creativity. We can infer this from his unremarkable (even poor) lyric-writing ability: it is little coincidence that he expressly employed lyricists for various songs, as well as the albums that he considered his most significant creative contributions to music: *Pet Sounds* and *SMiLE*. Furthermore, evidence of Wilson's poor prose style can be seen in the truncated, almost childish style of writing that he uses in the forewords to liner notes on Beach Boys albums, especially evident in the liner notes for 'Beach Boys Party!' (2001). Music was the only domain in which Wilson showed especial intelligence, and was the only domain where he expressed creativity. Interestingly, music is an area of Wilson's life that seems to be strongly related to various aspects of his schizoaffective disorder: both in strong emotional reactions (such as spontaneous crying) in response to music (Wilson & Gold, 1991) and in strange perceptual aberrations, notably musical hallucinations (Carlin, 2006; Ligerman & Leaf, 2004).

## The role of affective disorder in the schizoaffective framework

At this point, little mention of Wilson's affective (bipolar) disorder has been made with respect to his creativity or drug use, despite the fact that his mood swings are a prominent part of his personality-psychology continuum. Moreover, mood disorders such as his have previously been related to creativity, most often in creative writers (Andreasen, 1987; Jamison, 1993). As well as the fact that his affective disorders seem less prominent compared to his psychotic problems (not least due to the seemingly arbitrary hierarchical classifications in exclusion criteria that pervade the DSM IV-TR in terms of such diagnoses), the current analysis is guided by research suggesting not only that certain psychotic effects are effectively interchangeable across various schizophrenia-spectrum disorders, but that affective disorders are also part of the same or an overlapping spectrum (Nettle, 2001). Here there is evidence to suggest that schizophrenia-related symptoms are more suited to dimensional classifications than the rigid categorical model that currently exists. As well as vast degrees of overlap between schizophrenia proper and other schizophrenia-related disorders (Siever, Kalus & Keefe, 1993), there is evidence that positive schizophrenic symptoms exist along a continuum, gradually strengthening from personality traits to personality disorder to clinical disorder (Clark, 2005).

But there is more to schizophrenia-related disorders than positive symptomatology. In the current example, Brian Wilson's schizoaffective disorder contains the additional element of bipolar disorders of mood. As highlighted by Andreasen (2005) and Jamison (2000-2001), mood disorders have been consistently linked with creativity, with some evidence that this is a stronger relationship than that with schizotypy. However, it may be misguided to propose an exclusive association to either affective disorders or schizophrenia-related disorders. For instance, Sass (2000-2001a,b) compellingly argues that affective disorder traits often correlate with Romantic creativity (based in strong emotionality), whereas schizophrenia-related functioning encourages the self-consciousness and sense of alienation prevalent in modernist and post-modernist creative works. The implication of both positive schizophrenic symptoms and affective components in creative thinking certainly draws parallels to the symptomatology displayed by Brian Wilson, as well as previous psychobiographies of various schizoaffective authors (Claridge, 1998).

So it appears that cyclothymic, schizotypal, and schizoaffective spectra are all associated with creativity to some extent. The problem then becomes one of trying to establish whether the associations of these disorders with creativity represent a single effect, or whether the routes to creativity are distinct in the different spectra. Unfortunately, a clear delineation of these possibilities is all but

confounded by the vast amount of overlap between the disorders (Nettle, 2001). Some researchers additionally claim that the various spectra are simply different manifestations of the same disorder, with differences in symptom manifestation being attributable to personality effects (Crow, 1998; Kendell, 1991; Taylor, 1992). Although such assertions may be a little bold based on current evidence, the disorder types certainly have many phenomenological similarities, whether or not they share the same neurological substrate.

One way of uniting current theory is to emphasise the reactive and compensatory nature of symptoms and effects across affective and schizophrenia-spectrum disorders. Chapman (1966) proposed that for many schizophrenics, the first change in mental state is one of perceptual aberration; thought disorder, and atypical social functioning: safety behaviours (which may include delusions) may then act as ways in which an individual attempts to restore subjective normality or well-being, as a psychological defence mechanism. This then offers some explanation for the incidence of negative symptoms: they may be a reactive mechanism in response to positive symptoms. This is lent credence by observations that schizophrenics, when prevented from expressing positive symptoms, will 'lapse' into negative symptoms (Bouricius, 1989). Moreover, a strikingly similar observation has been reported in bipolarity, namely that depression is a reactive process of exhaustion or compensation after episodes of creative or manic exertion (Persinger, 1993). So while by no means trying to demote such disorders to side effects of schizophrenic functioning, and fully realising that such assertions are beyond the scope of this analysis, it seems that the two spectra share the same reactive and complementary natures.

Of course, this is all proposed with caveats. Bipolarity could manifest itself as a reactive disorder in response to antecedents other than perceptual atypicalities (for example a hyper-responsive dopamine system), and it is important to note there are currently no grounds to disprove the possibility that reactive cyclothymic function simply represents the later stages of a deteriorative pathological process (Persinger, 1993), as opposed to a progressively more degenerative set of coping strategies for early perceptual distortions in schizophrenia (Chapman, 1966). Still, the data fit well with the current case of Brian Wilson, and provide grounds for empirical testing. For instance the theory proposed here would suggest that schizophrenic-spectrum patients would become 'more bipolar' as their disorder progressed, showing wider mood swings and more pronounced oscillations between positive and negative symptoms.

## Conclusion

The case of Brian Douglas Wilson has proven illuminating for current models of creativity, schizophrenia (and related spectrum disorders), bipolarity, and drug effects. The evidence presented strongly supports his diagnoses of schizoaffective and mild bipolar disorders, though there is also information to suggest that such categorical labels may not provide the most qualitatively informative account of his condition. His drug abuse has had detrimental effects on his psychological well-being, as did poor clinical and medicinal decisions earlier in his life. His cannabis and LSD use may have exacerbated and contributed to various frightening aspects of his disorder, but at the same time had some (likely indirect) positive influence upon his creativity. Furthermore, this insight has allowed for a reappraisal of the efficacy of LSD as a drug model for psychosis (albeit an incomplete one), and the nature of Wilson's coincident mental disorder has fostered development and clarification of theorising about the potential relationships between schizophrenia-spectrum disorders and bipolarity. Since no one drug serves to fully replicate his symptoms, we may also conclude that finding perfect drug models of either creativity or certain disorders is unrealistic. A more useful method may be a componential approach to models of creativity and psychological disorder. In the current instance, LSD-sensitive serotonin pathways are specifically implicated in attentional overinclusion, but this represents only one facet of creativity. Similarly, a pathologically wide attentional focus fails to account for negative schizophrenic symptomatology and the reactive nature of bipolar depression. Favouring a trait's-eye-view rather than a disorder's-eye-view would therefore seem a more fruitful approach for future experimentation and theory. That is simply to say that certain combinations of various (overlapping) traits manifest as diagnostically distinct disorders, but it is more enlightening

for current purposes to consider them in terms of their phenomenological similarities and continuous variation rather than categorical boundaries.

As a final note, it bears mentioning once again that despite its presentation as a scientific case study, the current analysis in no way professes to reduce the astounding creativity of Brian Wilson to a simplistic account of his psychological disorders. Wilson's life and music bears influence that stretches incalculably further than the stylised and convoluted ramblings of this article. The genius evident in The Beach Boys' discography by itself makes this point rather eloquently.

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