The System of Affective Assignment

Please enjoy this extract from my *Quantitative Unconscious* paper, Norman (2013). We dream our world into being. The physiological brain system which endows experience with quality is an intrarelated symbolic affective distributional subsystem which can be quantitatively defined and assessed:

We only experience our perceptions, never the fictional, factual, "thing in and of itself." Perception is never directly able to access the things and events to which our perceptions refer. These perceptions must be identified, and, affectively interpreted, that is, given an emotional context by virtue of which they can be assessed, and appropriate behavior determined. Therefore, one could say that reality testing consists along with object identification, with the giving of proper symbolic value, proper affective value to perception and experience. These ideas converge to a point. In the simplest terms, what does this experience "mean to you." Think of affect as the psychological context through which a neutral perception is defined. It is the affective meaning, the context, which gives symbolic emotional *Quality* to experience. In example: One person may have a fond adoration for his pet mouse, where another may recoil in revulsion. The mouse is the same, a neutral perceptual experience, it is the affect which we assign to it which puts it in the context of our associated experience that varies. This symbolic affective function can become deranged, as we will now see.

In "The Pain Was Greater If It Will Happen Again: The Effect of Anticipated Continuation on Retrospective Discomfort," we find the following observation: "Across 7 laboratory studies and 1 field study, we demonstrated that people remembered an unpleasant experience as more aversive when they expected this experience to return than when they had no such expectation" (Galak & Meyvis, 2011, p. 63). Note how the experience was the same, but the affect assigned to it was different, a function of a *new context* whereby a different affective value is assigned to the stimulus. Affect is the context, and so, the quality with which we endow perception and experience, and its assignment to perception is therefore a vital part of healthy balanced mental function and reality testing.

In Levens and Gotolib's "Updating Positive and Negative Stimuli in Working Memory in Depression" we find the following statements: "Compared with controls, depressed participants were both slower to disengage from sad stimuli and faster to disengage from happy facial expressions. . . . For example, biases against keeping positive information active or toward maintaining negative content in WM may underlie the ease with which depressed individuals develop and propagate a negative mood" (Levens & Gotolib, 2010, p. 654). It is clear that the system of assigning affect to stimulus is essential to reality testing.

The system by virtue of which this process takes place is phylogenetically old and complex. All sorts of affective aspects are undoubtedly stored in various anatomical neural locations and retrieved from these many various areas to create the final effect of "affect." We must watch the system work in a known metapsychological context to

identify its various parts and their intrarelations. But, as we study sleep, it seems that with some psychology we may see the system of affective assignment in isolation, and gain some not inconsiderable insight into the process. For this reason I will now draw out the proper Freudian picture of the metapsychology of dreaming so it may be related to the current cognitive neuroscience.

I have found that even the very best scholarly papers often misrepresent Freudian theory by way of drastic oversimplification in order to contrast the theory being advanced against the older established theory. Please read the following from an otherwise superb piece of scholarship. In "The Cognitive Neuroscience of Sleep: Neuronal Systems, Consciousness and Learning," we find the following statement: "Freud believed that dream content was determined by a daytime experience that triggered the emergence of related memories" (Hobson & Pace-Schott, 2002, p. 686). This is an oversimplification. Freud did not state that dreams were primarily dependent on episodic memory as this statement may be seen to imply, but instead, had found many dream sources and relations to day world experience (Freud, 1900, p. 551). The partial statement of the highly complex and nuanced Freudian theory is so brief as to be utterly misleading. Later in "The Cognitive Neuroscience of Sleep: Neuronal Systems, Consciousness and Learning," on the same page, we find this statement which fits perfectly with the nuanced Freudian theory: “Instead, discrete and incomplete fragments of narrative memory are assembled to create the new synthetic scenarios of dreams” (Hobson & Pace-Schott, 2002, p. 686). It seems that in an attempt to define the new, the old has been distorted. For this reason I will begin with a recap of some familiar psychology which we will need to keep clearly in mind in order to construct our new analysis of affect.

Please note that we have already drawn a clear and intuitive connection between the assignment of affect and symbolism. Note also that our understanding extends this chain of ideas to include the notion of context. They are all but, if not truly, identical ideas, or aspects of each other. In psychoanalytic theory, dream and symbolic construction are accomplished by certain complex and specific means. A piece of day-world residue, a trivial dissociated fragment, a memory trace is chosen as a building block for dream construction because it is neutral, free of affect and meaning, and so becomes ripe for representation in a dream, ready as a canvas to accept the many meanings via transference which will be assigned to it in condensation and "overdetermination" (Freud, 1900, p. 279, 283-284, 563-564). The less saturated with meaning, and, the closer to being a nexus for many other ideas, the better. Language, as it is itself a symbol with many meanings and puns, acts as a nexus to which many underlying determinants can attach in condensation and overdetermination (Freud, 1900, pp. 340-341). The memory trace, and there are of course many which will be assembled to form the finished dream, is then invested with meaning from many sources. A process of disguise and distortion is used to accomplish this which includes: reversal, condensation of many events into one (Freud, 1900, p. 595), overdetermination of a dream through thematic repetition (Freud, 1900, pp. 283-284) and/or overdetermination of a single symbol by connecting many various trains of thought to give it energetic value sufficient to gain representation (Freud, 1900, p. 330), displacement from one object to another (Freud, 1900, pp. 307-308), and a host of other means which symbolically represent and compound affect to

achieve representation and conceal the true source of the affect delegated. These means of affective encoding found in REM dreaming function to avoid censorship via compromise formation which functions to create *distortions*. (Freud, 1900, pp. 143-144, 506-508, 595-598). It is by condensed symbolic construction and distortion that the affective sources of the symbol are attached, and also, hidden (Freud, 1900, pp. 506-508). The symbols thusly endowed are then woven into a story, a narrative, and are thereby given further episodic context, although be it a false one, in a process known as "secondary revision" (Freud, 1900, p. 488). The distortions are guided in no small part by the process of compromise formation, where the contents are distorted, censored, so as to produce a manifest dream, the meaning of which, the ego will not recognize (Freud, 1900, pp. 143-144, 506-508, 595-598). The process is called dream work (Freud, 1900, p. 277). So we have the process of symbolic construction and dream representation, a process whereby memory traces with little or no affect become suitable to be endowed with affect and woven into a distorted narrative, through many specific means. Highly complex! However I have tipped my hand as this process can be reduced to a simple but broad quantifiable principle. To discover this quantitative reduction the neuroscience must be analyzed alongside the aforementioned metapsychology of symbolism and dreaming.

In his paper, "Sleep, Learning, and Dreams: Off-line Memory Reprocessing," Dr. Stickgold (2001) and an esteemed collection of intellectual confederates bring us the clearest somato-neurologic picture of this metapsychological proposition to date. A clear neurological definition of the trivial unsaturated pieces of memory (memory traces) and symbolic processes of Freudian theory are seen to emerge in the context of memory consolidation, even if in a schematic and reduced fashion. In certain states of psychopathology such as schizophrenia, we can observe the pathogenic assignment of affect to experience as affective assignment operates unrestrained by the higher mental functions, such as input from the dorsolateral prefrontal cortex, just as we can observe in REM dreaming, which is understood psychologically as the general prototype of psychopathology (Hobson, 2001; Hobson & Pace-Schott 2002; Pace-Schott, 2003). In REM dreaming this unrestrained affective processing is isolated and expressed in harmless hallucination. The isolation of the affective system is achieved through a series of changes in neural modulation which Dr. Stickgold enumerates as:

> "More generally, the cognitive changes seen during REM may be the combined result of three physiological characteristics of REM: (i) the shift in neuromodulatory balance from aminergic to cholinergic, (ii) the decreased activity in DLPFC and increased activity in both the anterior cingulate cortex and amygdala (75–77), and (iii) the decreased outflow of information from hippocampus to neocortex (53). Taken together, these findings suggest that the brain in REM is tuned more for the processing of associative memories than for the simple consolidation of recent memory traces and may explain, in part, various features of REM dreams, including their bizarre, hyperassociative quality

(95) and minimal incorporation of episodic memories (96, 97)" (Stickgold, R., Hobson, J., Fosse, R., Fosse M. 2001, p. 1055).

In Dr. Hobson's paper we find the statement nicely summed in these few words: "There is also a progressive decrease in output from the noradrenergic, serotonergic and histaminergic neurons, all of which shut off in REM, leaving the selectively activated forebrain aminergically unmodulated" (Hobson & Pace-Schott, 2002, p. 691). In this instance of systemic aminergical demodulation the intrarelated symbolic subsystem by virtue of which we give affective value to experience is observable as it encodes affect into a dream for consolidation into the mnemic system, and other various functions I will touch on later:

"This suggests that the brain sources for dream elements are not hippocampally mediated episodic memories, but cortical traces of discrete components of the episodic memories, which then presumably are combined with associated semantic memories. With dorsolateral prefrontal cortex deactivated in both REM and NREM (75, 76, 106, 107) and the hippocampal formation producing only minimal cortical output in REM (53), actual episodic memories may be inaccessible and hence irrelevant to the dream construction process. . . In REM, the central nucleus of the amygdala plays a crucial role in the activation of medial prefrontal cortical structures associated with the highest order regulation of emotions (76, 108, 109). This adds to the deactivation of DLPFC, normally associated with higher cognitive functions (110), in REM. Thus, the brain appears to be biased toward emotional processing in this state. . . . We hypothesize that these features reflect an attempt, on the part of the brain, to identify and evaluate novel cortical associations in the light of emotions mediated by limbic structures activated during REM. This would be in keeping with the proposed role in waking of these structures in the identification of mismatches between expected and actual behavioral outcomes" (Stickgold et al., 2001, p.1056).

So we finally have a clear beginning in our search for an analysis to discover the neuroscience behind the metapsychology. A memory trace suitable for dream construction is now well defined as nonhippocampally mediated, and so, cut off from episodic memory just as one would expect metapsychologically, as the memory trace must be free of context and preexisting symbolic and affective value to be able to receive affective, limbic value and emotional definition, and act as a neutral substrate, an unsaturated nodal point with which to provide a new symbolic/episodic context. The source of the affect assigned to these free memory traces which are bereft of saturated context and existing emotive value is found through the mediation of limbic structures. Also, the purpose of these structures in providing affective definition to perception and the influence of this process on reality testing is not neglected either, as

we read: “We hypothesize that these features reflect an attempt, on the part of the brain, to identify and evaluate novel cortical associations in the light of emotions mediated by limbic structures activated during REM. This would be in keeping with the proposed role in waking of these structures in the identification of mismatches between expected and actual behavioral outcomes” (Stickgold, et al., 2001, p.1056).

So I can now plainly state the quantitative conceptual reduction to which I have alluded: The symbolic processes by virtue of which we give quality to REM dreams, experience and perception, can be reduced to a quantifiable operation: “the assignment of affect to.” Symbolism is a transference from concealed limbic sources, from unconscious sources by virtue of which emotion is mediated and affective quality assigned to perception. Symbolism is a function of the system of affective assignment.

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