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Structural Anthropology and the Psychology of Dreams

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Claude Lévi-Strauss developed structuralist methods in anthropology, deriving inspiration from the phonological analysis of the linguist Roman Jacobson. His most successful application of structuralist methods has been in his analyses of myths, but—as both Lévi-Strauss and Jacobson independently suggested—the method may be applicable to the analysis of dreams. Attempts have recently been made to develop the structural analysis of dreams, and some exploratory studies are described. The structural analysis of language, myths and dreams has implications for theories of cognition, and these are touched upon in the conclusion.

Modern linguistics launched two projects which have greatly influenced the social sciences. One was generative transformational grammar, developed by Noam Chomsky. Chomsky's theory has had repercussions especially in psychology. He himself launched a devastating critique of behaviorism, on the grounds that it could not account for the innate human ability to master certain unteachable skills—such as the language competence which enables one to utter completely novel sentences, and to assess such sentences for grammatical correctness by the application of rules which are unformulated, unconscious, and apparently unlearnt (Chomsky, 1959). Generative grammar (which has gone through several transformations itself in its short history) stimulated a whole new range of studies of language acquisition and learning in psychology. It also inspired a new "syntactic" mode of dream analysis, proposed by David Foulkes (Foulkes, 1978).

The other great influence has come from phonemics, and is associated especially with the Prague School. Roman Jakobson, a key figure in the school, moved to the United States as a refugee from the Nazis, and after the war taught at Harvard and MIT. Nevertheless, unlike Chomskyan theory, the structural linguistics represented by the Prague School flourished particularly in Europe. Its progeny in the humanities and social sciences are numerous

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and diverse: however, they are generally lumped together as varieties of "structuralism." Structuralist methods have been developed especially in anthropology and semiotics, but they can be identified also in the psychoanalysis of Lacan and the methodological discourse of Piaget, who claimed to discern a kinship between his procedures and those of linguistic, mathematical and anthropological "structuralists" (Piaget, 1971).

My own project has been to apply structuralist methods, based upon those developed by Lévi-Strauss, to the analysis of dreams. Anthropologists are familiar with structuralist methods, and have tended to regard them as a novel but not particularly surprising application of a well-established technique. Psychologists, however, have found it difficult to locate the methodology in any familiar tradition. Accordingly, in this paper I trace the development of structuralist ideas by Jakobson and Lévi-Strauss. I then illustrate the application of their methods to the analysis of dreams. Finally, I attempt to specify the implications of structuralist theory for cognitive psychology.

Jakobson to Lévi-Strauss

The intellectual transition from Jakobson to Lévi-Strauss is the most important moment in the history of structuralism. My account of it here is necessarily simplified and selective, but it may nevertheless help the reader to identify the crucial features of the methodology. At the same time, there is a danger. Lévi-Strauss's dominance of structuralism has been so great that one is sometimes tempted to identify the structuralist enterprise with his own research career. His particular private insights and his own errors of interpretation must be dealt with always from two points of view: for what they reveal about his own development, and for what they imply about the possibilities of a structuralist method. The same might be said of Jakobson, another complex and protean figure who has dominated large fields of enquiry in linguistics. But these are, perhaps, still early days. The personalities of the pioneers still loom large.

"The essence of Jakobson's approach to phonology," as a modern commentator has observed, "is the notion that there is a relatively simple, orderly, 'psychological system' of sounds underlying the chaotic wealth of different kinds of sound observed by the phonetician" (Sampson, 1980, p. 118). The Prague School insisted that the phoneme—the minimal comprehensible sound unit—was itself made up of "distinctive features." Each sound could be analysed as a possible realisation of one of a limited series of binary oppositions—stressed, unstressed; voiced, unvoiced; etc. These are straightforward dichotomous choices. Any parameter or value is significant only because the opposite member of the pair is potentially present. The meaning conveyed by a phoneme is a function of (a) its contrast to possible alternatives, and

(b) its combination with preceding and succeeding phonemes.

Note the following passage from Jakobson.

> "Did you say *pig* or *fig*?" said the Cat. "I said pig", replied Alice. In this peculiar utterance the feline addressee attempts to recapture a linguistic choice made by the addresser. In the common code of the Cat and Alice, i.e., in spoken English, the difference between a stop and a continuant, other things being equal, may change the meaning of the message. Alice had used the distinctive feature "stop *vs.* continuant", rejecting the latter and choosing the former of the two opposites; and in the same act of speech she combined this solution with certain other simultaneous features, using the gravity and tenseness of /p/ in contradistinction to the acuteness of /t/ and the laxness of /b/. Thus all these attributes have been combined into a bundle of distinctive features, the so-called phoneme. The phoneme /p/ was then followed by the phonemes /i/ and /g/, themselves bundles of simultaneously produced distinctive features. Hence the concurrence of simultaneous entities and the concentration of successive entities are the two ways in which we speakers combine linguistic constituents. (Jakobson and Halle, 1956, pp. 58–59)

In a famous paper published in 1956 Jakobson even suggested that these two aspects of language—selection and combination—were detached from each other in aphasia. There were two forms of aphasia, one corresponding to an impairment of the selective function, the other to an impairment of the combinatory function. More generally, these functions corresponded to the metaphoric and metonymic modes of communication. And in a tantalizing concluding chapter, Jakobson suggested that these two axes of communication were the basis even of dreams.

> A competition between both devices, metonymic and metaphoric, is manifest in any symbolic process, either intrapersonal or social. Thus in an inquiry into the structure of dreams, the decisive question is whether the symbols and the temporal sequences used are based on contiguity (Freud's metonymic "displacement" and synecdochic "condensation") or on similarity (Freud's "identification and symbolism"). (Jakobson and Halle, 1956, pp. 80–81)

Inspired by a course of lectures delivered by Jakobson at the École Libre des Hautes Études in New York in 1942–43 (Lévi-Strauss, 1985, Chapter 9), Lévi-Strauss began to explore the application of this mode of analysis to systems of communication other than language. His first important studies were in the field of kinship, but he subsequently turned his attention to cultural products which seemed to him to be more purely "mental," less exposed to the pragmatic pressures of social life. In *The Savage Mind* (1966), he defined the outlines of what he called a "logic of the concrete." This was a mode of thought which constituted symbolic objects in terms of a set of binary oppositions, and combined these constructs to form messages. The initial message could then be transformed by simple operations such as inversion and negation. This form of thinking—analogical rather than logical—was not necessarily characteristic of so-called primitive peoples, but was a universally available mode of intellectual operation, which had its place in every culture.

His later publications showed this "logic of the concrete" operating especially in myth, and it is on this work that the modern reputation of structural anthropology largely depends.

Lévi-Strauss assumes that a myth formulates its message along two dimensions. One—the metaphoric dimension—involves selection of items from a series of binary oppositions (such as male/female, up/down, hot/cold, young/old). The other, the combinatory dimension, has to do with the organization of these items in series, syntagmatic chains. The combinatory sequences are less strictly limited than the selective choices, but they are also constrained by transformation rules. Once a particular situation has been specified in a myth, the movement forward is achieved through formal transformations, in which the items are inverted, reversed, negated, etc.

Consider the opening sequences of four North American myths about bird-nesters, discussed in the final volume of his *Mythologiques*, *The Naked Man* (1981). Each of these "overtures" (as Lévi-Strauss calls them, exploiting his own favourite analogy between primitive myth and classical European music) features a hero and one of three female relatives. The first hero has a sister, who is protective; the second a grandmother, who tries to commit incest with him; and the third, a cannibalistic mother. In the fourth myth the hero is confronted with all three female relatives, but their attributes are juggled. In this myth, the sister is incestuous, the grandmother cannibalistic, and the mother protective. In other words, the three female relatives are defined in terms of three contrasting feminine attributes, which are systematically rotated. Each female character appears twice in this set of four myths. On each appearance she has a different label (incestuous, protective or cannibalistic). Moreover, in no myth are two of these women given the same label. This set of three defining attributes may itself be reduced to two sets of oppositions—tabooed vs. permitted behaviour, and sexual vs. culinary regulations.

The women are also further contrasted in terms of another cluster of symbols which oppose menstruating women, pregnant women, and post-menopausal women. These attributes are more obviously mutually exclusive. Menstruating women cannot be pregnant, pregnant women cannot menstruate, and post-menopausal women can neither menstruate nor fall pregnant. These qualities in turn refer to culturally more fundamental oppositions, between youth and age, fertility and sterility, birth and death. They also tie in with ideas about the phases of the moon.

By specifying these basic oppositions, the myths arm themselves with the means by which they are able to communicate culturally resonant messages. The units of the myth—what Lévi-Strauss once called "mythemes" on the analogy of phonemes—are constituted in terms of a series of such binary oppositions. These binary oppositions recur in a whole corpus of myths, com-

bining in various ways to constitute the characters or the stereotyped actions of mythology. Lévi-Strauss also suggests that the most fundamental of the binary oppositions (notably the nature/culture opposition) are universal, and not restricted to a particular cultural tradition. The analogy once again is with Jakobson's attempt to specify the universal sets of distinctive features.

In order to communicate messages it is necessary to combine such units of mythic discourse in a sequence. The movement from one act of a myth to another is achieved through the transformation of these "mythemes" or of the relationships between them. It is difficult to illustrate the method without first providing a detailed account of a series of myths. Lévi-Strauss himself employed the Oedipus myth as an example in one of his early papers (republished in Lévi-Strauss, 1963, chapter 11). I shall use an example taken from a famous essay by the British structural anthropologist, Sir Edmund Leach, since he examines biblical "myths," and these are probably even more familiar.

Leach proposes a comparison between the Biblical accounts of (a) the sacrifice of Jepthah's daughter and (b) the non-sacrifice of Abraham's son, despite his preliminary observation that while both stories deal with sacrifice "the similarity of content is very slight." The analysis is quite brief, and can best be cited directly.

> The following is a summary of Judges xi.30–40:
> (a) Jepthah, the Gileadite, makes a vow to make a burnt offering to God if he is granted victory.
> (b) God grants Jepthah victory.
> (c) (By implication Jepthah plans to sacrifice an animal or a slave in fulfilment of his vow.)
> (d) God, in the form of chance, imposes a substitution whereby Jepthah is made to sacrifice his only child, a virgin daughter.
>
> *Outcome*
>
> Jepthah has no descendants of any kind.
>
> The following is a corresponding analysis of Genesis xxii. 1–18:
> (d) God requires Abraham to sacrifice his only son Isaac as evidence of faith and obedience.
> (c) As Abraham prepares to obey, God imposes a substitution whereby Abraham in fact sacrifices an animal in fulfilment of his duty.
> (b) Abraham thus demontrates his faith and obedience.
> (a) God makes a vow that Abraham shall have countless descendants.
>
> *Outcome*
>
> All the children of Israel claim descent from Abraham.
>
> When presented in this way the two stories appear as mirror images of each other. "God" is changed to "father"; "father" is changed to "God"; "virgin daughter" is changed to "virgin son"; the sequence represented by the clauses (a), (b), (c), (d) in the first story is exactly reversed in the second story. The mythical outcome of the first story "the father has no

> descendants" is the exact opposite of the mythical outcome of the second "the father has countless descendants." It can thus be said that these two stories have an identical structure, since the second can be produced from the first by the simplest transformation rule: "Substitute for each element its binary opposite." (Leach, 1969, pp. 37–38. Cf. Leach and Aycock, 1983)

I am afraid that examples of this sort are at once tantalizing and rather unpersuasive. A run of related examples is needed in order to establish the power of a particular structuralist analysis, for the transformations of a myth can be seen as a series of experiments, which test the accuracy of the analysis. Do the binary oppositions specified by the analyst define the recurrent mythemes? Do their transformations generate a sequence of myths?

One of the most powerful features of Lévi-Strauss's four-volume analysis of Amazonian myths is his repeated demonstration that the structures he defines can be traced in a series of often geographically dispersed sequences. Transformations occur not only within a single local corpus of myths but even across large geographical distances. For example, the cycle of bird-nester myths in South America belongs to a larger group of myths, which have two main concerns. Some deal with the origin of fire and cooking, others with the origin of jewelry and ornaments. There are various internal transformations in this group of myths, which Lévi-Strauss explored in the earlier volumes of his *Mythologiques*. In the final volume, *The Naked Man*, he made the startling claim that "if we leap over the thousands of kilometres separating central Brazil from the north-west of the United States, we find a myth about the origin of adornments, the armature of which exactly reproduces that adopted by the South American Indians to explain the origin of cooking fire." But in British Columbia, once again, the myth is treated to a series of local transformations. For example:

> In Klamath mythology, Aishish, who is a man, gives jewellery made from porcupine quills to his wives, who are the personification of insects. Conversely, North American communities living on the east side of the Rockies believe quill embroidery to be the work of insects: ants, who take a woman's place so that she can give the garments they have embroidered to her husband. (Lévi-Strauss, 1981, pp. 53-54)

In his earlier writings, Lévi-Strauss concentrated upon the binary oppositions which underpin mythical discourse. More recently he has paid especial attention to transformations, even writing, in the final volume of *Mythologiques*, that: "Mythic thought operates essentially through a process of transformations" (1981, p. 675).

The binary oppositions are rather rigid and mechanical, but the transformations of mythical constructions are comparatively free. "Theoretically, at least, there is no limit to the possible number of transformations . . . from the purely theoretical point of view, there is no way of deriving . . . any prin-

ciple from which it would follow that the states of the group are necessarily finite in number . . ." (1981, p. 675). And yet, transformations seem to follow certain rules. Lévi-Strauss believes that this points to the existence of further mental universals:

> If, between our variant and another of the same myth, there always appear differences expressible, not in the form of small positive or negative increments, but of clear-cut relationships such as contrariness, contradiction, inversion or symmetry, this is because the "transformational" aspect is not the whole story: some other principles must come into play to determine that only some of the possible states of the myth are actualized, and that only certain apertures, not all, are opened up in the grid which, theoretically, could accommodate any number. This additional constraint results from the fact that the mind, which is working unconsciously on the mythic substance, has at its disposal only mental procedures of a certain type. (Lévi-Strauss, 1981, pp. 675–676)

Both Jakobson and Lévi-Strauss were convinced that the prevalence of binary oppositions and highly constrained "transformations" revealed fundamental and universal qualities of human cognition. Both attempted to identify processes of this kind in diverse and often unexpected cognitive domains. I have noted Jakobson's suggestion that this approach could be applied to the analysis of dreams. Indeed I was told by Professor George Devereux (personal communication, 1981) that Lévi-Strauss himself once devoted a graduate seminar in Paris to the application of structural analysis to the study of dreams. Lacan, a Parisian psychiatrist, has also attempted quasi-structuralist analyses of dreams. I think, nevertheless, that I was the first to publish a series of analyses of dreams which explicitly applied Lévi-Strauss's "mythologic" to these materials. My first attempt dealt with the dreams of a Plains Indian, who had been analysed by Devereux (see Devereux, 1951/1969; Kuper, 1979). One example may serve to illustrate the possibilities.

A Dream of a Plains Indian

Jimmy Picard, Devereux's patient, had lost his father at the age of five, and shortly afterwards he had found his mother in bed with another man. He left home in anger and was adopted by his sister and her husband, Jack, a leading figure in the local community, who as the "brother-in-law" figured in many of Picard's dreams. Picard's adoptive parents were highly religious Protestant Christians. Picard worked as a ranch-hand for his brother-in-law, and had various other jobs, but was eventually incapacitated by a head injury which caused hearing and sight problems. He had been admitted to hospital with a severe cold, headaches, visual disturbances and some other symptoms, which were eventually diagnosed as partly psychological in origin. Devereux's *Reality and Dream: Psychotherapy of a Plains Indian* is an account of Picard's treatment. The core of the book consists of thirty interviews with

Picard, many of them including Picard's accounts of his dreams. One of the most detailed dreams featured his sister and brother-in-law, and also a brother who grew up apart from him.

> I don't know the place. It was out in the country, everything was green. It looked very happy. I met my brother-in-law and he told me, "We had better go up there and get the horses and gather them all up. You go with your oldest brother and gather them all up, I'll be up later on with my car." I did not know where I struck out for. I went up the hill with my brother, to gather up the horses. After they were all gathered on top of the hill, I looked down toward the river. It was full of green plants. It was a creek or swamp. It looked bad. I wondered how we could cross. We might get stuck. Just as I started up the horses, my brother-in-law and my sister got there with the car and he called me, "Come on over there." I went to him. He said, "I come from this ranch over here. One of you got to stay. I thought you should stay. Take this woman to town to jail. She has killed her husband." I said, "Oh, hell, I don't want to have one damn thing to do with her. Why doesn't someone else do it?" My brother-in-law said, "I can't do it." So my brother spoke up. "I'll do it. You (the patient and Jack, the brother-in-law) can take the horses." So my brother got into the car with my sister, who drove it. This woman was held by my brother. They struck out. My brother-in-law and I took the horses down the steep hill, right through the swamp. I said, "The horses will get stuck." My brother-in-law said, "Don't worry, take them through." We went all through. We were in deep in the mud, although we were on horseback, but we got through. When we reached the other side I looked back and decided that it did not look so bad where we had come through. Next thing, I was with my brother-in-law in the car, in town. A man waved at him and said he wanted to see him real bad. But, my brother-in-law said, "I can't do it, I got to take care of Jimmy first. I have a real lot of business to do with him." Then I woke up. (Devereux, 1951/1969, pp. 250–251)

At many points, references to key events in Picard's life appear quite transparent. His brother-in-law had been his employer on a ranch, and had looked after him. The woman who has killed her husband may plausibly be identified with his mother, who Picard (as a young child) surprised with her new sexual partner soon after his father's death. The outcome of the dream is that the mother is taken to jail, Picard manages to carry out a difficult task for his brother-in-law, and his brother-in-law rejects other attachments and takes care of him. It seems likely that this satisfactory resolution of his personal problems is indeed the subject of Picard's dream. However, I am concerned here with the internal dialectic of the dream, the manner in which it constructs its message. After all, Picard does not simply dream that he is working again, that his mother is taken to jail and that his brother-in-law favors him. He constructs a quite complex narrative, which *achieves* these desired results.

Consider, for instance, the contrast between the four settings specified in the dream. In the beginning:

> (a) It was out in the country, everything was green. It looked very happy.
> (b) I went up the hill . . . on top of the hill, I looked down toward the river. It was

full of green plants. It was a creek or swamp. It looked bad. I wondered how we could cross. We might get stuck.

(c) My brother-in-law and I took the horses down the steep hill, right through the swamp. . . . We went all through. We were in deep in the mud, although we were on horseback, but we got through. When we reached the other side I looked back and decided that it did not look so bad where we had come through.

(d) Next thing, I was with my brother-in-law in the car, in town.

These four settings are contrasted in terms of two sets of oppositions:

(i) green countryside versus town;

(ii) green countryside "looked very happy" versus "looked bad", and finally "did not look so bad."

These transitions between locations mark off the episodes of the dream, but they also serve as objective correlates of the transitions which occur in the narrative.

Next, consider the characters and their actions. There are six characters: Picard, his brother-in-law, his sister, his brother, the woman who has killed her husband (his mother?), and finally the man who waved at the brother-in-law when they came to town and "said he wanted to see him real bad." It is tempting to construct contrasts between these characters, but it is probably prudent to restrict oneself to the traits specified in the dream, at least in the first instance. Briefly, the characters may be defined by their actions.

1. Picard meets his brother-in-law, who orders him to collect the horses with his brother.
2. Picard and his brother collect the horses and Picard considers with some dread the prospect of leading them across the river.
3. The brother-in-law and sister return in the car, and the brother-in-law instructs Picard to take the woman who has murdered her husband to jail in town. Picard reacts with revulsion. The brother-in-law cannot do the job either.
4. The brother and sister take the woman to town in the car.
5. Picard and his brother-in-law bring the horses across the river.
6. Picard and his brother-in-law are in town in a car. A man wants to see the brother-in-law "real bad," but the brother-in-law says he must first take care of Picard.

The main actors in this story are faced with two tasks: bringing the horses down the hill, and taking the woman into town. Picard and his brother cannot bring the horses down the hill: but Picard and his brother-in-law can do so. Picard and his brother-in-law cannot take the woman into town: but his brother and sister can do so. In the final episode, Picard's brother-in-law takes him into town and says he will "take care" of him.

There are, then, a series of contrasts:

(i) Country versus town.

(ii) Managing others versus being managed.
[In the country, people on horseback look after animals. In the town, people in cars look after, or punish, other people.]

(iii) Actors [Picard's brother-in-law, brother and sister] versus patients [the horses, the woman, the man]. The actors are specific real-life individuals. The patients are anonymous.

Picard is in fact unemployed and in the hospital. In this dream he reconstructs his obvious fantasy that he is once more satisfactorily employed by his brother-in-law, and looked after by him (to the exclusion of others). The interesting feature of the dream is the way in which he moves from the first statement (employed on a ranch by his brother-in-law) to the second (looked after by his brother-in-law). The movement occurs through the coherent transformation of the elements which constitute the units of the first statement. Formally, each step in the dream is a variation on the statement that in the country/in town an actor looks after or punishes a patient. Picard himself is the only character who moves from being an actor to a patient—the last words of the dream present him in his brother-in-law's speech as someone to be looked after. The dialectic is subtle enough to incorporate sub-themes, the punishment of Picard's mother, and the separation from himself and his brother-in-law of his brother and sister.

This analysis is intended merely as a partial illustration of structuralist method. It is, however, necessarily incomplete, since (as Lévi-Strauss insists) one cannot rest content with a structuralist analysis until it has been shown to apply to a run of related myths (or, in this case, dreams). This is the only possibility of controlling and checking the interpretative insights of the analyst. The same objection can be made to the lengthy analysis of Freud's dream of Irma's injection, published by Alan Stone and myself (Kuper and Stone, 1982). I therefore regard my analysis of the dreams dreamt by the subject of a REM dream experiment in Rosalind Cartwright's laboratory in Chicago as methodically the most satisfactory structural analysis I have so far attempted (1983). If the reader wishes to pursue the methodological problems further, I would refer him or her to that paper. Here I wish to deal with a different issue. If structuralist methods do indeed prove to be suitable for the analysis of dreams, what questions does this raise for the understanding of cognition?

Structuralism and Cognition

Both Jakobson and Chomsky identified the main psychological relevance of their theories in the field of language acquisition. Lévi-Strauss makes an

even more ambitious claim. He believes that he has identified hitherto unknown but universal mental procedures for processing intellectual problems. In the first place, the mind defines a system of differences—a set of binary oppositions which can be used to specify and differentiate the items of information of which the problem is composed. Secondly, the statement of the problem is then subjected to a series of transformations, by negating, inverting, reversing or substituting its elements. To take an example from Picard's dream: At the beginning of the dream, Picard is ordered by his brother-in-law (an actor) to look after the horses (patients). In the last episode, the brother-in-law is asked by a man (patient) to do something for him. He refuses and says he must look after Picard. The location of the incidents is contrasted in terms of country versus town, and the situations in the two locations are inverted.

A similar inversion was identified between the beginning and the end of Freud's Irma dream. In the first episode, Freud believes that Irma has a "psychological" problem which causes physical symptoms. She will not open her mouth to utter the thoughts which are poisoning her. In the last episode it is established that she has a psychological problem with a physical cause. She is cured by an attack of dysentery, which purges the physical poison through the anus. (The upper aperture will not open voluntarily to purge the mental poison; the lower aperture opens involuntarily to purge the physical poison, [see Kuper and Stone, 1982, cf. Hudson, 1985].)

Lévi-Strauss's ideas can be placed in the tradition of anthropological and psychological theory which deals with the opposition between unconsciousness and conscious thought processes, a contrast which has often been elided with one between "primitive," childish and disturbed mental processes as opposed to "civilised," mature and normal processes. From Freud and Lévy-Bruhl to Piaget it has been assumed that these two modes of thought can be opposed in terms of their logical propriety. Lévi-Strauss's argument is that (a) "savage thought" has its own rules (mainly of an analogical kind), and that it is capable of processing problems in a creative and useful manner; and that (b) this mode of thought is not restricted to primitive peoples, children or the mentally disturbed but is common to all humankind, at least in certain contexts.

Various theories of dreaming have attempted to establish that dreams are cognitive processes. My analysis suggests that much of the "thinking" which occurs in dreams is of the same kind as that identified by Lévi-Strauss in mythology. This is not necessarily the only type of thinking which operates in dreams. I suspect the presence of a monitor, a means of scanning the resolutions generated by dreams. The function of the monitor is to identify those formulations which resolve real-world problems. The dream, then, juggles the elements of an issue which engages the dreamer—not in a random way, but rather by patiently rearranging the elements of the issue, combining and

recombining them. The monitor scans these processes, and when it is satisfied it freezes the frame, as it were. This may be why the dreams recorded on awakening so often seem to resolve issues, while REM awakenings yield more often inchoate and apparently unresolved narratives.

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