ON DIFFERENT "FALSE" MEMORIES

FROM SCREEN MEMORIES TO DEJA-VU

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Abstract:

Freud never thought that a memory was a precise reproduction of a scene. If memories are not exact reproductions, all memories are "false" memories, organized amnesias (Julien Rouart's term).

Different kinds of false memories are characterized by being more "amnesic" about content, or about affect, or about the connections between content and affect, or about the time when they are consolidated. Screen memories proper are consolidated long after the event or original experience. Since, however, all memories are constructed memories, and all constructions have screening functions, screen memories may only differ from other memories by the relative prominence of specific defensive constructions. Memories and screen memories are usually reported as ego-syntonic in the sense that the reporter says "I remember."

On the other hand, the deja -vu experience is different. It is also a memory, because "it feels so familiar," but there is an ego-dystonic element inherent in the uncanny dissonance between the feeling of familiarity on the one hand, and, on the other hand, the pronounced inability to locate its source in time and space.

Presentation Overview

Here are some of the major points to be developed in the presentation.

Studying memory is studying time.

Freud thought that understanding the connection between the timelessness of the unconscious and observed change await future philosophical and scientific developments.

A discussion of the possible relevance of modern concepts of time in physics to the timelessness of the unconscious.

Short-term memory is necessary for all psychic life.

The psychological now. Is mind time? Ontogenetic recapitulation and memory in

perception and object formation.

Screen memories. The prominence of specific defenses in screen memories. >From memory construction to confabulation. The trauma of interruption, its effect on implicit memory and the sense of duration.

Freud's screen memory explanation of déja raconte.

Déja-vu experiences: the synesthetic hypothesis and the temporal lobe.

Nachtraeglichkeit's play between after effect and hermeneutics. How new information changes not only meaning, but also the memory of experienced past durations.

How neurobiological findings correlate with the evolution of memories.

Do biological rhythms have an affect on memory construction and does this effect correspond to the aftereffect hermeneutic polarity of Nachtraeglichkeit?

Psychoanalysis, declarative memory, the unraveling of the condensed, and the construction of time.

Studying memory is studying time. It is obvious, but it must be said: We cannot talk about memory without considering Time. Kurt Eissler writes: (my translation from the German):

"Time is always in us and around us: despite this it escapes our grasp. We probably oppose a fundamental resistance to its comprehension, a resistance that reaches much deeper and is more profoundly anchored in us than the resistance that the Ego demonstrates when it defends against an unacceptable aspect of our personality. One can imagine that the Ego would be seized by horror if it would see itself being confronted with the true problem of the nature of time."

Meaning depends on short term memory. Usually, when psychoanalysts discuss memory, they think of relatively long term memory. However, without short term memory, there is no meaning and, without meaning, psychic life does not exist. All meaning, all thinking, all psychological functions are time-linked. Mind and time are intimately connected. Perhaps, the "horror ... of ... the confrontation with ... the nature of time" that Eissler invokes, is the horror of anticipated ultimate aloneness emptied of memory.

Let me give you an illustration of the loss of meaning that accompanies loss of short term memory. Sernyl is a drug that interferes with short term memory. It was once used as an anesthetic for animals and children, but research on the drug continued after its clinical use was stopped. It was given by injection in what, I believe, was the last authorized research project on humans, to Kenneth Gaarder, psychiatrist and psychoanalyst who participated in this research and served as a voluntary subject. Dr.

Gaarder was well acquainted with the literature about Sernyl, but had not seen the drug in use. Here is a taped record of Dr. Gaarder's words 10 minutes after the injection.2

"...something is going on here and uh-uh-I'm alive-and uh-I'm doing something for some reason, , and I don't know what it is I'm doing and uh-what's happening to me now-and words are things like that what is happening? What is to say what is happening? Is a word-and people talk-and what is talking? And uh-I don't know what's going on.....I'm experiencing something and I don't know what's going on, and I don't know what saying what's going on is saying...."

If time is a feature of all psychic activity, the most striking psychoanalytic hypothesis relating to time is the notion of the timelessness of the unconscious.

Freud believed that "one day" progress in psychoanalysis and neuroscience would complement each other "in a useful manner." He was deeply interested in the science of mind. Progress in the study of the nervous system was sufficiently rapid in Freud's time that his expectations did not seem outlandish. The basic paradigms for such possible advances were more or less established in the common scientific language. In general, he did not believe that other scientific and philosophical advances might some day also be relevant to psychoanalysis. Freud thought that psychoanalytic understanding awaited fundamental new developments only in its relationship to time. The new developments would have to be fundamental, because Freud could not conceive of them in the framework of the philosophical perspectives or natural sciences of his day.

Freud stated that the unconscious is not affected by time. It is timeless, yet it interacts in some way with a world that knows change. For him, this puzzle had no apparent solution. In one of many references in Freud's works to the timelessness of the id and the timelessness of the system "Unconscious,"3 he says "There is nothing in the id that corresponds to the idea of time; and no alteration in its mental processes is produced by the passage of time ... Wishful impulses which have never passed beyond the id, ... impressions too which have sunk into the id by repression, are ... immortal ... After the passage of decades they behave as if they had just occurred. ... Again and again I have had the impression that we have made too little theoretical use of this fact, established beyond any doubt, of the unalterability by time of the repressed. This seems to offer an approach to the most profound discoveries. ... Unfortunately, I myself (have not) made any progress here. "

Have there been such developments since Freud's time that "offer an approach to the most profound discoveries ?" If so, are they relevant to psychoanalysis as a theory of mind, to psychoanalytic practice or both?

Freud knew about relativity theory, about the uncertainty principle and about quantum physics. Freud did not consider these scientific advances relevant to psychoanalysis and warned against facile use of these concepts in psychoanalysis. The warning against the facile use of the concepts remains justified, but is Freud's skepticism completely justified today? We will touch on this question here, but we will not attempt to pursue it in depth.

Philosophers of science and students of time are writing volumes about the question of the relevance for human experience of such concepts as space-time, the uncertainty principle, quantum physics, and emergence.

Today some scientific developments that are not understandable in either "common sense" terms or in terms of classical physics, impact our daily lives more than they did in Freud's time. Today, we use electricity generated by nuclear energy, a development that is an application of Einstein's theories of time-space. Today, some empirical biological research conceives of phenomena in terms of concepts other than those of classical physics. For example and I quote: "Protein -folding....involves the use by biological organisms of quantum computation to solve non-polynomially solvable problems in classical physics."4

The central "locality" of our inquiry here is that of psychoanalysis, and more particularly memory and time. Since every psychoanalytic session is implicitly also a laboratory of epistemology, of what we know and how we both the analysand and the analyst know it, we cannot totally ignore some highlights of modern universal philosophical and scientific thought about time. For example, is Goedel's formulation of the non-existence of time pertinent to the psychoanalytic theory of the timelessness of the Unconscious, or is it the ultimate "brain teaser" for a psychoanalyst?

Goedel theorized that maximum curvature in Einstein's space-time leads to our return to the same point in space-time in conceptual time travel. If we find ourselves at the same point in space-time, he reasoned, time does not exist as a"physical" reality. This notion suggests that all time-related psychological activity, (and there is no time independent psychic activity), including memory is constructed by us. The Sernyl5 experiment described previously, illustrated the loss of meaning that accompanies the loss of short term memory. Even the word "now" lost its meaning. A now without short term memory is meaning -less. It has no psychological existence; it is mind-less.

The psychological moment, the existence of a psychic reality needs short term memory to exist and the psychic reality of the moment is a building block of later memories. Therefore our study of memory is inescapably linked to the study of the building of psychic reality. Psychoanalysts are careful to avoid "reification"of their concepts, but nevertheless the term "object" has some connotations of solidity, of "separate" tangible existence.

In this connection, I would like to summarize here some ideas that I have developed in much more detail elsewhere.6 In general psychology, the concept of object permanence, or object constancy, refers to observations of the kind that a table is perceived as the same table when viewed from different angles despite the fact that the retinal projections of the table are different when the viewing angles change. In the context of our study of memory and the recognition that memories are not reproductions of a scene, nor of an object, it is essential to note that time is involved in the movement from one position to another in viewing the table that will be a (permanent) object. This notion is not absent from psychoanalytic understanding of object constancy. Psychoanalysts just do not

explicitly focus on it. Psychoanalysts focus on affect and meaning when considering that object constancy has been achieved when the nourishing and the withholding mother are recognized as the same person, but mother seen from different angles and in different physical positions also has different retinal projections. I emphasize that even object constancy has both a hermeneutic and a "tangible, as it were physical reality " component, because this theme will be important when we discuss Nachtraeglichkeit.

This discussion of object constancy leads to the conclusion that our psychological "object world" consists of subjective equivalences of different objects. Different time intervals may also be subjectively equivalent. There is also ample evidence that the same "linear" time interval may be experienced as shorter or longer, and that different time intervals may be experienced as similar or identical, depending on many different factors, including time linked affective factors, expectations, hopes, and fears. From this perspective, psychic reality consists of processes of forming networks of spatial and temporal subjective equivalences. "Object " loses some of its "Solidity."

I have hypothesized in the past that every perceptual process, every psychic process is a recapitulation of the onto-genetic developmental process. To illustrate this hypothesis, I have used the story that the drowning individual (after he is saved) recounts that he experienced his whole life "in a flash." This conscious experience may correspond to the unconscious micro or nanosecond recapitulation of the development of the individual's perceptual processes.

Freud often dealt with recapitulation. For instance in his article on deja vu and deja raconte, he stated that when a patient says that he has known "it" all the time, the end of the analysis is near. Although phylogenetic and ontogenetic recapitulation are closely connected, I will limit myself here to a discussion of ontogenetic recapitulation.

Now to look at what is being recapitulated. There is an ever expanding literature on the perceptual processes of infants and children. I have focused on a developmental sequence of the discrimination between outside and inside, the discrimination of the animate from the inanimate, the synesthetic from the sensory-specific, and the priority of temporal or of spatial ways of organizing sensory data. The latter point needs clarification. My awareness of such a priority derives from work with schizophrenic patients. A patient described how the distance between two buildings had shrunk. I observed that she walked faster, but such observations with schizophrenic patients made me aware to what extent we usually give priority to spatial organization. I have more fully developed elsewhere how these developmental stages are recapitulated in "object formation." I have also described a certain congruity between, on the one hand, animate, inside, temporal, and synesthetic, and, on the other hand, inanimate, outside, spatial , and sensory-specific, on the other hand. Tachistoscopic experiments, the study of perception of stimuli exposed for extremely short periods permit a kind of temporal dissection of the recapitulative process. There is support for the idea that extremely short exposure led adults to have responses that have characteristics in common with those of very young children and that longer exposures correspond to responses of older children.

I would like to return to "subjective equivalence" in object formation. If the psychic objects are not "real, tangible objects, " but represent subjective equivalences of different perceptions, then each perceptual act represents a travelogue -and therefore a micro-memory trail -through different "object formations." If the recapitulation of developmental processes is "complete" in each perception, the subjective equivalences form"objects" that are recognizable by and can be shared by others. If the recapitulations of some perceptions are incomplete, interrupted by trauma or for other reasons, subjective equivalences between completed and partially completed perceptions form "bizarre" objects. In any case, we arrive at the conclusion that the "now" that may be remembered is itself a process of object formation, but the nachtraeglich recapitulation of this object formation may be particularly difficult if it were interrupted and led to "bizarre" objects, distortions of memory that are particularly hard to trace and to understand.

Memory is a processing of a process. The concept of Nachtraeglichkeit has long been neglected in the English-speaking psychoanalytic world because the term had been poorly, at least very incompletely translated as "deferred action." An attempt has been made to clarify the concept by speaking of "retroactive attribution of meaning," Kettner, who has studied Freud's use of the concept, finds that Freud sometimes gave it a hermeneutic meaning, referring to changes of interpretation of memories, and sometimes a "causal" meaning. The latter can be thought of in terms of the aftereffects, like a chain of effects on a series of billiard balls. Kettner finds that psychoanalysis operates in the "Spielraum" the place between these two meanings.

This Spielraum is also the area of confluence of unidirectional linear time linked to traditional causality and of bidirectional temporal processes. Bidirectional processes escape the narrow structure of a mechanical billiard-ball causality chain and involve the alterations of meaning produced by seeing old material in the light of new information and vice-versa.

In only a brief discussion of Nachtraeglichkeit, I want to point to the similarity of Kettner's Spielraum, between the concrete and the hermeneutic, to the Spielraum between unidirectional linear time and bi-directional hermeneutic time. In this connection, I'd like to mention the work of Matte Bianco who distinguishes symmetrical and asymmetrical mental processes. "John is the brother of Paul" is symmetrical because Paul is also the brother of John. "Paul is the brother of Mary" is asymmetrical because Mary is not the brother of Paul. "Yesterday is before today" is a-symmetrical because today is not before yesterday. The Unconscious, says Matte-Bianco, does not distinguish between the symmetrical and the asymmetrical, and is in this way timeless. In this context, I again refer to the possible relevance of Goedel's hypothesis of "non-existence of time."

The other aspect of Nachtraeglichkeit that I want to discuss, is a relatively neglected one, the nachtraeglich modification of the sense of duration. Shifts during

psychoanalysis in what is understood as meaningful, be it in one analytic session or in a perspective on life developed during psychoanalysis, have profound consequences for our experience of time, because the judgments of the duration of intervals in which "meaningful" things happen differs from the judgments of duration of intervals of "accidental" events. An experimental demonstration7 (Ornstein ref in multiple realities) of the retroactive effects of new information on judgment of past duration is the following: Subjects in one experimental group learned a series of apparently random numbers and then were asked how long it took them to learn the series. Subjects in another group learned the same series and then were given a code that transformed what was apparently a random series into an ordered one before being asked (to estimate) how long it took them to learn the series. The subjects, who were given the code and whose actual learning period was the same, estimated the learning period as shorter than did the subjects who were not given the information that would have permitted them to reorganize -recode- their experience retrospectively. It is well established that ordered numbers are learned more rapidly than random ones. Subjects given the code that transformed the apparently random series into an ordered one after learning them estimated their learning period as though they had known the ordering code at the time of learning. New information had had a retroactive effect on judgment of past duration.

The findings of this experiment are relevant to clinical psychoanalysis, to the topic of memory, false memory and, because a distorted sense of past duration can itself have a screening function, perhaps especially to Screen memory. All memories can have screening functions. In his article on Screen memories, Freud often refers to similarities between other memories and memories that he designates as screen memories. I think this is a device to highlight some characteristics, most of which are present in all memories, but are more prominent in some. They include sensory intensity and the delay in developing the screen memories (his own screen memory refers to events that occurred when he was three years old and to a screen memory that was formed when he was 17). Freud also emphasizes that the wish he encounters in this screen memory is the wish to change the past rather than a wish for the future. He emphasizes that he returns to a past nostalgia. My own graffiti is "Nostalgia ain't what it used to be." Nevertheless, Freud's technique of analyzing his screen memory is not fundamentally different from the technique he employs in analyzing other memories.

Freud locates the source of his screen memory at age 3 when the financial collapse of the family's business leads to a quite sudden and unexpected move to Vienna. For analysands, a screen memory is accepted by the subject as a "real" memory, but Freud and other students of screen memories emphasize to what extent the sensory intensity, (the yellow flowers, for instance) , is particularly fresh, and current and, as it were, factually verifiable. The narrative of the screen memory is, however, particularly unlikely. The manifest story is false, although analyzing it as one would analyze a dream, may make it understandable. While all memories are constructions, the more evident falseness of the screen memory, makes of it a confabulation. The psychiatric definition of confabulation is: "Replacement of a gap in memory by a falsification that the subject

accepts as correct. "

I think that Freud's choice of the trauma of a particularly unexpected Interruption as the source of his emblematic screen memory, is not accidental. "Implicit" memories permit us to perform daily tasks without conscious focused attention. Implicit memory involves (the unconscious memory of) the correct timing in which these tasks have to be performed in a specific setting. Sudden changes of setting disrupt our expectations, force us to pay conscious attention where it was not needed previously, and disrupt the continuity in our sense of duration. This leads to pronounced gaps in narrative memory coexisting with particularly clear and vivid memory of sensory impressions, the hallmarks of screen memories. In discussing Nachtraeglichkeit in memory formation, we have located this Nachtraeglicheit" between billiard-ball - like concrete aftereffects and hermeneutics, meaning and changes of meaning. In screen memories the center of gravity of the usual mid -space Nachtraeglichkeit is shifted to the concrete and away from meaning and narrative, where the gaps of memory are particularly pronounced. This discrepancy is especially conducive to confabulation and screen memory formation. The individual, however, locates the screen memory, the confabulated story, in a specific point in time. This is one feature that distinguishes it from the déja-vu experience.

In his paper Fausse Reconnaissance ('Deja Raconte') In Psychoanalytic Treatment8, Freud reviews some of the earlier literature on the déja-vu subject, including an "anatomical" one put forward by Wigam in 1860. I will return to this "anatomical" idea later because of its relevance to a modern biological hypothesis. Primarily, however, Freud speaks of an "unconscious" earlier experience that explains the present feeling of deja, the sense of familiarity. Freud gives credit to Gasset for this idea, but explains that he did not know of Gasset's work when he first formulated his own explanation. Freud makes an especially interesting link between deja raconte and screen memory when he explains that a patient's false certainty that he had already told him of a memory, turned out to be correct in the sense that he had told of the remembered event in the form of a screen memory. Arlow9, has described how a déja-vu experience can be analyzed with the usual techniques of dream analysis.

I have emphasized the uncanny nature of déja experiences and related it to simultaneous contradictory convictions such as "I am sure I have seen this, or I have been there" and I am sure I have never been there.10 Here, in brief, is my hypothesis which is supported by neurobiologic findings. Contradictory convictions are the result of the repetition of the same pattern of stimulation, but in different sensory compartments. Synesthesia is the blending of different sensory compartments. A synesthetic pattern may be the same as a sensory compartmentalized pattern. Think of an oscilloscope that has the same wave pattern whether it represents an auditory, a visual or a synesthetic stimulus pattern. Neuroscientific support for this hypothesis derives from the importance of temporal lobe functions in integration and differentiation of sensory "compartments" and the fact that individuals with temporal lobe abnormalities are often inundated by ongoing deja experiences. In this connection, the "anatomical" hypothesis put forward by Wigam in 1860, the hypothesis that Freud cites, is quite remarkable. Wigan thought that

deja phenomena resulted from an absence of simultaneity in the functioning of the two cerebral hemispheres.

Earlier in the presentation, I described my hypothesis that each perceptual act represents an unconscious recapitulation of the ontogeny of perception, and that, developmentally, synesthetic perceptions antedate sense specific (visual, auditory etc.) perceptions. Interruptions of some micro-temporal recapitulations lead to the subjective equivalence of completely and of incompletely recapitulated perceptions and therefore to the formation of bizarre and uncanny "objects" ..(As an aside: This has led me to study the psychotic's "atmospheric" objects. Imagine being immersed in an unending series of deja experiences. Some psycho-biological schizophrenia research currently focuses on temporal lobe functions.)

In Deja Vu, a micro-temporal memory dysfunction leads to a loss of autonoetic awareness. In deja experiences the memory, the uncanny familiar feeling cannot be localized in time and place. Neuro-biologists use the term "autonoetic" to describe "self-in-time" awareness. I believe that this loss of "self-in-time" awareness in deja vu experiences is the result of interruptions of some micro-temporal recapitulations, i.e., micro-temporal breaks in the unconscious memories of the chain of perceptions involved in "object" formation.

To recapitulate, we have developed so far: We cannot talk about memories without talking about time. Some modern conceptions of time are perhaps relevant to psychoanalysis, particularly to the notion of the timelessness of the unconscious. In any case, memories are not copies of the past. Episodic memories are constructions. In that sense, all memories are false. We have examined different ways in which they are false and how episodic memories unroll what has been temporally condensed. (Freud says that when the patient says "I have known this all along, the end of the analysis is near.) The concept of Nachtraeglichkeit has received special attention. Clinical psychoanalysis and memory formation function in the spielraum "playroom" (or"playtime") between the concreteness of mechanical aftereffects, on the other hand, and hermeneutics, i.e., meaning and change of meaning resulting from new information, on the other. And it is here, somewhat surprisingly, that Nachtraeglichkeit and Neurobiology may encounter one another.

There is no attempt in this presentation to deal with the vast topic of the neurobiology of memory. There have only been some brief references to temporal lobe function and to the currently possible visualization of the movement of brain activation that may correspond to psychological recapitulative processes in perception. But now, I now want to mention two points made in a neuro-biological paper that seem particularly relevant to our discussion. The paper is titled "What are the memory sources of dreaming?11 The first point deals with the correspondence between movement of brain activity from one brain area to another and psychological movement between two elaborations of a memory. The second point deals with the constraints imposed on memory formation by chronobiological factors.

The simple naming of specific areas of the brain as centers of a specific affective or cognitive function, may strike us as only a kind of internal phrenology and thus of limited interest. The situation is different when a shift in cerebral activation and the timing of the shift corresponds to interesting psychological developments. Nielsen and Stenstrom have observed that a different brain area is activated when an individual recounts a dream he had yesterday and when he talks about the same dream one week later. "...the dependence of newly acquired memories on the hippocampus decreases over time whereas their dependence on neocortical structures, such as the medial prefrontal cortex, increases in a complementary fashion. Memories are...relocated over time from the hippocampus to the neocortex..." The authors describe corresponding qualitative changes, in essence from "day residue" to cognitive elaboration, to emotionally relevant episodic memories. Here is a neurobiological finding connected to the construction of meaning, to the hermeneutic pole of Nachtraeglichkeit. The finding that chronobiological factors at several levels influence the selection of memory sources, corresponds to "aftereffect," the " billiard ball " external, mechanical, and concrete pole of Nachtraeglichkeit. The timing and the rhythms of cerebral functions in general correspond to linear clock time, precisely, the linear clock time in which billiard balls have their aftereffects. These "external" rhythms are gate keepers to provide or deny access, at any one moment, to a multitude of cerebral activities.

The brain itself functions with the polarity between aftereffect and hermeneutic transformations. This kind of polarity of brain functioning is congruent with our psychoanalytic work. The fixed clock time of the beginning and ending of the psychoanalytic session forms the frame in which the hermeneutic search of the unconscious unfolds itself, an unfolding necessary for the construction of personal psychological time, an unraveling of the ultimate condensed timeless into the thread with which we weave our memories and our lives.

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