Karl Popper and Psychoanalysis Reconsidered

Mehmet Levent Kayaalp

"Psycho-analysis is the name (1) of a procedure for the investigation of mental processes which are almost inaccessible in any other way, (2) of a method (based upon that investigation) for the treatment of neurotic disorders and (3) of a collection of psychological information obtained along those lines, which is gradually being accumulated into a new scientific discipline." (Freud 1923)

Freud's definition, above, long has been accepted inside the otherwise fractious branches of the psychoanalytic community. Even schismatic dissidents such as Adler, Stekel and Jung did not see fit to challenge Freud on that score. Another notable conflict dividing psychoanalysis - Melanie Klein versus Anna Freud (not to mention the Middle Group) - concerns "how" to do psychoanalysis rather than redefining or defending "what" it is. Although Freud's definition is clear enough, the elements it comprises - research method, treatment and scientific status - have, from the very start, raised questions about psychoanalysis' relation to medicine and science. Freud chose to take an unapologetic stand by stating that psychoanalysis does not require the permission from any discipline, including medicine (Freud 1926). However, since at the time psychiatry, the branch of medicine focusing on the structure and disorders of the psyche, had little of use to say regarding etiology of the disorders, its treatment methods were also limited and dubious. Therefore, psychoanalysis offered aid to this branch of medicine, both theory- and treatment-wise. This situation remained more or less true until the advent of neuroleptic medications for some mental disorders.

In 1952 French navy surgeon Henri Laborit noted the effectiveness of chlorpromazine - normally used for post-operative sedation - on mental excitations. First, psychiatry now had medications to treat, if not cure, such disorders. Second, after chlorpromazine was theorized to function through blocking dopamine receptors, a hypothesis quikly became influential that some, if not all, mental disorders result from a deficiency/overabundance of dopamine or other neurotransmitters (Ban AT 2007). In other words, with these new drugs any reliance of modern psychiatry on etiopathogenetic hypotheses and any consequent need for psychoanalysis was diminished severely. These promising new drugs became widespread in psychiatric treatments in a very short time, and psychoanalysis significantly lost ground in medicine both as a treatment method and as an explanatory means for mental disorders. Today, psychoanalytical theory and practices are no longer a part of psychiatry training, and are only partially included in most (certainly not all) formal University and college psychology education programmes.

Psychoanalytic "insiders" such as Otto Rank, Sandor Ferenczi, Wilhelm Reich, Karen Horney and Erich Fromm targeted different dimensions of psychoanalytical theory without questioning the essential value of psychoanalysis itself. Especially since the 1960s, though, a intensified round of attacks questoned whether psychoanalysis is scientific at all. For a relatively mild example, Paul Ricoeur, hardly hostile to Freud, regarded psychoanalysis as a part of hermeneutics rather than as a 'hard" science, and interestingly deemed Freud's most positivistic exercise *Project for a Scientific Psychology* (1895) as a version of psychoanalytic theory that had yet to attain a hermeneutical quality (Ricoeur 1965). For Habermas, phenomena in the psyche intrinsically are unavailable to empirical investigation. So he considers psychoanalysis, above all, as a valuable process of self-reflection (Habermas 1971). For sympathetic critics, depending on how one defines science, psychoanalysis is a part of humanities and hermeneutics, not science (Steele 1979).

Popper's Criteria for Science

Among all those criticizing the scientific status of psychoanalysis, Popper's arguments are the best known. Yet the depth of knowledge Popper displays while discussing psychoanalysis is surprisingly limited and shallow. Popper examines the scientific status of a theory with illustrative reference to three major theories he encountered (and indeed participated in) as young man in Vienna immediately after World War I: Marxism, Freudian psychoanalysis (hardly unitary at the best of times), and Alfred Adler's individual psychology:

"The most characteristic element in this situation seemed to me the incessant stream of confirmations, of observations which 'verified' the theories in question; and this point was constantly emphasized by their adherents. A Marxist could not open a newspaper without finding on every page confirming evidence for his interpretation of history (…) The Freudian analysts emphasized that their theories were constantly verified by their 'clinical observations.'[1]

Popper's appraisal of Adlerian psychology was based largely on his experiences as a volunteer with Adler. Starting from these three "incessantly self-confirming" theories, Popper arrives at the dictum that for a theory to be regarded as scientific it must be falsifiable. According to Popper, Marx's disciples, rather than acknowledge invalidating instances, chose to reinterpret the theory in order to adopt it to circumstances, which apparenrtly is reprehensible but not without its merits. Freud and Adler's psychoanalytical theories, on the other hand, can be neither invalidated nor tested; there supposedly are no findings that can prove them wrong or even force a reevaluation. Popper writes

> Let us compare this case [the scientificity of the theory regarding vaccines' protective power against the smallpox] with that of a theory that in my view is not falsifiable: Freud's theory of psychoanalysis, for instance. Evidently, this theory could be in principle be tested only if we could describe some human behaviour that conflicted with the theory. There are such falsifiable theories of behaviour: for example, the theory that a man who has lived a long time and always been honest will not suddenly, if his financial circumstances are secure, become a thief in his old age.

---

[1] Karl Popper, *Conjectures and Refutations*, London: Routledge and Keagan Paul, 1963, p. 34.

> This theory is certainly falsifiable, and I suspect that here and there falsifying instances do occur, so that the theory is simply false in the formulation just given.
>
> But in contrast to this theory, there seems to be no conceivable human behaviour that could refute psychoanalysis. If a man saves another's life by risking his own, or if he threatens the life of an old friend -whatever unusual human behaviour we might imagine- it will not be in contradiction with psychoanalysis. In principle, psychoanalysis can always explain the most peculiar human behaviour. It is therefore not empirically falsifiable; it is not testable.[2]

Grünbaum later and similarly argued that psychoanalytic theory fails as a science since it cannot provide external validity measures other than clinical examples, which by definition are flimsy. Yet, contrary to Popper, Grünbaum argues that psychoanalytic theory is indeed falsifiable. Grünbaum even suggests that Popper may have misused psychoanalysis to prove the superiority of his falsifibility theory of science. Popper is unable or unwilling to credit logically-conflicted dimensions of human behavior (Grünbaum 2008).

Popper and the psychic world

Popper rarely mentions the humanities or the possibilities of investigating psychic processes scientifically, (Perron 2008) which gives the impression that he disregards the psyche altogether. Quite the contrary, Popper is very much interested in the psyche but regards psychoanalysis as an inadequte investigative tool. He wishes to move away from the aggravating slipperiness of philosophy and to step onto the solid foundations of science, which ironically is buttressed by methods that are open to philosphical critique.

Popper's only co-authored work (with Eccles) consists of a first part, written by Popper, discussing the mind/body problem and his hyphothesis of three world. (Popper, Eccles 1977). The second part, written by Eccles, describes the brain and its functions. The co-authors then exchange ideas in the third part. In fact, this work reflects a dualist understanding both in form (the thinker for the mind, the neurophysiologist for the brain) and in context. The concluding part "Dialogues", merges the endeavours of both writers to surpass dualism and attain a superior third level

The "three worlds" theory he formulated at the conference at the University of Michigan in 1978 (Popper, 1978) is the final formulation of his attempt to articulate the mind/body relationship at the language level. On one hand, Popper maintains an aggressive physicalist attitude as he ignores the psyche, on the other hand, he weaves a fabric of subject/object relationship on his intellectual loom very similar to the supposedly shabby fabric of psychoanalysis. Let's look at the fabric Popper weaves.

---

[2] Karl Popper, *All Life is Problem Solving*, trans. Patrick Camiller, New York, NY: Routledge. 2007, p. 17.

Popper's "Three Worlds"

> In this lecture I intend to challenge those who uphold a monist or even a dualist view of the universe; and I will propose, instead, a pluralist view. I will propose a view of the universe that recognizes at least three different but interacting sub-universes. (Popper 1978, p. 143)

The first of these three sub-universes is the world consisting of physical matter, such as rocks, stars, plants, and animals as well as radiation, physical energy and other measureable material forms. It is also possible to divide this world into the world of abiotic physical and living things and the world of biological things.

The second world is the world of feelings, thoughts, decisions, perceptions and observations. It is the world of mental/psychic situations or processes. The moment one exits the world of matter and enters the field of the psyche, uncertainty begins. This "World 2" is ethically and morally important because human suffering is located here. This second world can be divided into sub-worlds; if we wish, we can differentiate conscious experiences from dreams or subconscious experiences. One can also separate human consciousness from animal consciousness. Popper insists that, even though some monists, materialists or physicalists deny its existence, World 2, and human suffering within it, is very real.

The main proposition of Popper's theory is that World 3 is real. World 3 is all the products of the human mind: languages, tales, stories, religious myths, scientific assumptions and theories, mathematical productions, songs and symphonies, paintings and sculptures, planes, airports and other wonders of engineering. Most of the objects belonging to World 3 clearly also overlap with World 1 beause they too are embodied in physical objects.

Another third world: Winnicott and transitional objects

A contemporary of Popper's, D. W. Winnicott described "transitional objects" and "transitional phenomena." Winnicott claimed a relationship between the way babies, beginning from birth, stimulate their oral area and use their fists, fingers, and especially the index finger, and the way they soon become dependent on objects such as blankets or dolls. This first "not-me" possession of the baby is a "transitional object" (Winnicott 1953). Afterwards, Winnicott expands the concept to "transitional phenomena":

> I have introduced the terms 'transitional object' and 'transitional phenomena' for designation of the intermediate area of experience, between the thumb and the teddy bear, between the oral erotism and true object-relationship, between primary creative activity and projection of what has already been introjected, between primary unawareness of indebtedness and the acknowledgement of indebtedness ('Say: ta!').[3]

From these concepts of transitional object and space, Winnicott moves on to human nature:

> Of every individual who has reached to the stage of being a unit with a limiting membrane and an outside and an inside, it can be said that there is an

---

[3] Winnicott, D.W. (1953). Transitional Objects and Transitional Phenomena—A Study of the First Not-Me Possession. Int. J. Psycho-Anal., 34:89-97.

> inner reality to that individual, an inner world which can be rich or poor and can be at peace or in a state of war. This helps, but is it enough?
>
> My claim is that if there is a need for this double statement, there is also need for a triple one; the third part of the life of a human being, a part that we cannot ignore, is an intermediate area of experiencing, to which inner reality and external life both contribute. (ibid)

Even though Winnicott does not define each one individually, he is decribing three worlds. The first is, tempered by experience, the external world. The second, - internal reality - is the psychic world of the individual. A correspondence legitimately can be drawn between Winnicott's first and second world and Popper's world 1 and world 2. Since many thinkers talked about the first two worlds, the key issue is whether Winnicott's third world, the one he calls the area of experiencing, is strikingly similar to Popper's World 3, even though they may not be identical. Interestingly, Winnicott begins his article "The Location of Cultural Experience", where he clarifies his thoughts of the third world, by mentioning that Freud specified the places of internal and external reality, and determined the road to culture as sublimation, but did not mention where culture is located. Winnicott connected play and culture, and claims that both are neither inside nor outside; rather, their location is inside the area of experience:

> I have used to term cultural experience as an extension of the idea of transitional phenomena and of play without being certain that I can define word 'culture'. The accent indeed is on experience. In using the word culture I am thinking of an inherited tradition. I am thinking of something that is in the common pool of humanity, into which individuals and groups of people may contribute, and from which we may all draw *if* we have somewhere to put what we find.[4]

Popper and Winnicott: A Speculative Excursion

Since Winnicott's main concern was improving clinical practice, he did not try to refine his own World 3 concept for the field of philosophy. However, even as is, his concept precedes and may well be the precursor of Popper's World 3. This strong resemblance stirs the question whether these thinkers were aware of each other. That they were contemporaries living in the same city for much of their careers, a city where intellectual circles were small and overlapping, implies that the probability is far from negligible. Consider the role Winnicott (and Bowlby) played in transporting the children of London to country areas to protect them from the Blitz, and the popular talks Winnicott gave on the radio, which make it likely that Popper knew of him. His thinking may have influenced Popper's. Although Popper never mentions Winnicott's name, it is still possible to be influenced without giving open credit. Popper's third world thesis can be evaluated more thoroughly in this light.

World 3

World 3 is real because it has a causal effect on us, on World 2 experiences and on our World 1 brain. For Popper World 3 objects are not fictitious. Objects that we can grab, play with, and drop are, in the most primitive sense, "real." Popper

---

[4] Winnicott, D.W. The Location of the Cultural Experience, Int. J. Psycho-Anal, 48, 368-372

coincidentally says "I conjecture that a baby learns to distinguish such things; and I suppose that those things are most convincingly real to the baby that he or she can handle and drop, and can put into his or her mouth."[5] Popper claims that the first and most formative relationship with reality occurs (even though he does not state it as such) in connection with orality! He neatly sidesteps any discussion as to why a baby brings the object to his/her mouth - an erogenous zone - rather than to other sense organs, such as the nose or the ear.

Popper indirectly accepts orality as a given. Would it be too much to expect him to evaluate this reality in terms of gratification? But, if he did this, he would have to accept that distinguishing between what is real and what is not is the result of distinguishing between stimuli from the outer world (i.e., World 1, as he puts it) and stimuli from the inner world (i.e., World 2) (Freud 1900, Freud 1911, Freud 1915a). However, in Popper's scheme, objects of World 3 prove their reality is independent of the first two worlds, by influencing them. We live in a physical world (World 1) that was changed through the domain of World 3, that is, science. Why would Popper so closely approach psychoanalytic concepts such as orality and gratification without mentioning them as such and incorporating them into his own theory?

Knowledge as a World 3 factor

To buttress the reality of World 3 and its influence on the other two worlds, Popper stipulates that the products of World 3 should be separated into *knowledge in the subjective sense* and *knowledge in the objective sense*. Knowledge in the subjective sense consists of concrete World 2 thinking processes as well as corresponding World 1 brain processes. It constitutes our *world of subjective expectations*.

Knowledge in the objective sense, corresponding to science, is comprised of thought contents, not processes. Since subjective/objective or process/content are insufficient terms for distinguishing these forms of information, Popper moves beyond this duality and toward a third dimension: language. Knowledge in the objective sense is the content of the theories we formulate through language; it is what is translatable from one language to another or what remains unchanged after a (*pace* Winnicott) good-enough translation. It is what the translator successfully preserves.

Popper significantly uses the metaphor of translation as he discusses objective knowledge — something he emphasizes is abstract. However, when discussing the difference between objective and subjective knowledge, a long footnote, which is unusual for his text, may shed light on Winnicott's influence on Popper. In footnote 8 of the three worlds text, Popper cites Heinrich Gomprez, who influenced Popper's writings about subjective and objective thinking. Gomprez made the distinction between objective and subjective thought in his book *Weltanschauungslehre,* published in 1908. Popper surmises that Gomprez himself was influenced indirectly by Frege through Husserl, though Husserl does not mention it. Popper thinks it very

---

[5] Popper KR (1978) Three Worlds, The Tanner Lecture on Human Values, Delivered at University of Michigan, https://tannerlectures.utah.edu/_documents/a-to-z/popper80.pdf, p. 153

unlikely that Gomprez was uninformed about Frege's thoughts, who produced a similar description to what he described as World 3, since Gomperz's book was published in Jena, where Frege resided.

A page after Popper states that he will try to clarify the distinction between concrete World 2 thought process and the abstract World 3 thought content, he returns to the topic of thinkers' mutual influence: "On the other hand, causal relations such as the influence of one author upon another may be said to hold between thought processes, and not between thought contents."[6] Therein he discusses Faraday's influence on Maxwell. Popper later states human languages are the most important World 3 objects. However, he gives a highly surprising example of the translation of content. If what is to be preserved or kept constant during translation is the content, then the dance of the honeybee has a content as well. It is not clear whether the aforementioned "dance" content corresponds to the objective information in Popper's terms since the subjective/objective contrast has been abandoned.

Following a detailed passage about how thinkers influence one another, right at the point where the language unique to humans is almost held equal to insects' communication methods - and probably to overcome this deadlock - Popper suggests a new concept: non-linguistic thought. "From the point of view which I am defending here, the transition from a non-linguistic thought to a linguistically formulated thought is of the greatest importance. By formulating a thought in some language, we make it a World 3 object; and thereby we make it a possible object of criticism."[7] Even though he does not state it clearly, according to this point of view, non-linguistic thought corresponds to knowledge in the subjective sense, which is made up of concrete mental orientations and, especially, expectations.

Verbal and non-verbal thought from a psychoanalytic point of view

Non-linguistic or non-verbal thought is no stranger to psychoanalysis. In *Interpretation of Dreams*, Freud discusses how dream thoughts transform into visual images (*darstellbarkeit* = presentability) [Freud 1900]. During sleep, even though there are no visual stimulants outside, what makes us recognise we are dreaming is an operation in which verbal thought is transformed into visual thought. The visual thought system is not only operatve in dreams.

To take the explanation of the visual thought further, it is helpful to think of mental functioning in terms of a representation (*vorstellung*) system. Representation, defined as reimagining of something not present and as a reproduction of a previous perception, was seen by Freud as the fundamental factor of mental functioning. However, while working on aphasias, he distinguished between representations as object representations and as word representations (Freud 1891). Object representation is something which represents the object, and corresponds to a "verbal image". Word representation, on the other hand, is an "auditory image" representing the word. Freud later defined these two representations in their connection with the first placement (topic): Conscious representation includes both the object representation and the word representation belonging to that object; the unconscious representation, however, is only made up of object representation (Freud 1915b).

---

[6] İbid, p 158
[7] İbid, p 159

Whereas verbal representations are mostly related to the unconscious, word representations correspond to conscious thought. Although he does not clearly separate the verbal from the visual, Freud notes this distinction as he elaborates the pleasure and reality principles, and argues that the thought is at first unconscious, and oriented towards the relations between object impressions, but becomes perceptible to the consciousness after connecting with verbal remnants (Freud 1911).

Of the factors examined up to this point, visual thought and object representations function within the "primary process." A primary process comes under the rule of the pleasure principle; during this process, which is effective in dreams, daydreams and symptoms, the object/thing representations in connection with gratification experiences gravitate towards one another to repeat a past gratification. Verbal thought and word representations, on the other hand, are a part of the "secondary" process subordinate to the reality principle and carry out functions such as wakeful thought, attention, and judgement. At this point, we can, on different levels, compare the subcategories (e.g. knowledge in the subjective sense and knowledge in the objective sense) created by Popper by separating the knowledge, which is the product of World 3, into that of primary and secondary processes, as psychoanalysis conceives them.

Does Popper's knowledge in the subjective/objective sense correspond to Freud's primary/secondary processes?

Though Popper does not credit the unconscious as a concept he argues that conscious experiences, dreams or subconscious experiences can be distinguished from each other in World 2. However, he actually does talk about unconscious experiences and expectations, accepting that the experiences other than fully conscious ones make the first level of comparison on a conscious level legitimate.

At the second level, whereas primary processes serve the pleasure principle, there is an "orientation" and "expectation" of knowledge in the subjective sense. Even if the object of the expectation is undefined, there is an affective dimension, although it may not be as stark as pleasure. The aim of the secondary processes is not momentary pleasure, but rather supervision and regulation. Pleasure is postponed and acceptable alternative gratifications are sought. In Popper's examples of objective knowledge, the motivation of scientists is not really pinned down. However, curiosity can be regarded as a propelling master emotion.

Another level of comparison is Popper's distinction between the linguistic and non-linguistic thought. The quality of being non-linguistic, which is added to characteristics of the subjective knowledge, corresponds to the visual quality of primary processes. Just as we need to transform the non-linguistic thought into linguistic in order to discuss it, non-verbal primary processes need to be transformed into verbal thoughts before being transferred to the other; dreams, which are a visual experience, can only be transferred when verbally told.

So knowledge in the subjective sense - a product of the World 2 and a consequence of separating the world 3-based knowledge into two - could be argued to be counterparts to Freudian primary processes. In parallel, the knowledge in the objective sense, which is a product of World 3, manifests similarities with secondary processes. This similarity raises the question whether Popper was ever aware of it. Unlike Winnicott, Freud is mentioned in his works.

Was Popper influenced by psychoanalysts?

Though Popper directs his scathing criticisms to Freud's thought (without bothering to separate it from Adler's ideas), he fails to mention any works of the thinkers in question. How can we explain him neither discussing or citing any specific parts of Freud's works even as he stoutly claims psychoanalysis is not scientific? Some argue that one should not expect Popper to 'understand' psychoanalysis, which he sees as a pseudoscience, since Popper aims to weaken the undeserving position of the Freudian dogma without bothering to study it beyond a cursory manner (Blight JG 1981). Still, a thinker of Popper's magnitude acts like a amateur militant in criticizing psychoanalysis requires explanation.

We need to go back to "Three Worlds" and search for the answer there. After Popper separates knowledge, a fundamental factor of World 3, in subjective and objective senses, he provides a long footnote. The connection he makes between Gomprez, by whom he was influenced, and Frege, by whom he believes Gomprez was influenced, resembles in every way our postulated connection between him and Winnicott. As mentioned above, a scientist who is interested in psychic processes so much that he can, together with Eccles, author a book on "self" to be unaware of Winnicott —a contemporary, fellow citizen and one of the most unique and renowned figures of his time— seems highly unlikely. Considering Winnicott's critique of Freud for failing to make ample room for culture in his inner world/outer world design (Freud 1911) and suggests a new (third) world, it seems ever more unlikely that the three world theorist Popper was unaware of it.

Apart from instances of outright plagiary, theorists can be forgiven for being unaware of or, when demonstrably aware, failing to cite all other thinkers who assert similar ideas. They may view related ideas as so far off the actual track they are on that those ideas are simply too foreign to mention. However, for Popper, this is not the case. Throughout his text, in covert clues and in generalized assertions, the influence of Winnicott is evident. The way Popper discusses Gomprez' and Frege's' influence on each other parallels the same questions we are asking regarding Winnicott, and appear significant.

As he questions the criteria for the "realness" of objects, is it reasonable for Popper to fail to mention, let alone endorse, the concepts Freud developed for questioning inner and outer realities? After all, the illustrative material he invokes on this topic is a baby and the relationship he/she builds with the outer world via mouth and fingers — the same as Winnicott, who had describe transitional space as a third world. All these points may be dismissed as coincidences that do not carry any significant meaning, and the discussion could be ended there. However, because Popper indulges in this exercise, our questioning should continue as well.

Popper claims that knowledge in the subjective sense actually belongs to World 2, which brings a new angle into the Popper/psychoanalysis fray. To characteristics of knowledge in the subjective sense, he adds the quality of non-linguistic, which draws this kind of knowledge much closer to primary processes of psychoanalysis. The unconscious quality of primary processes and their need to function through object representations and to be transformed into verbal representations in order to be transferred to the other corresponds with Popper's argument on the necessity of transforming the non-linguistic idea to lingustic thought in order to criticise it.

Popper concedes that influences between two authors can occur at an unconscious level. Thus, we may safely enough conclude that Popper was aware of the fundamental psychoanalytic concepts (inner/outer reality, primary/secondary processes, unconscious, pleasure/reality principle etc.), but then rejected and/or repressed them. What is left of psychoanalysis for him is nothing but a dogma since important concepts he accepts elsewhere in his writings are deemed unworthy of the name science. As Grünbaum notes, the only reason psychoanalysis appears in Popper's work is his need for a foil to support his argument regarding falsification (Grünbaum 2008). Yet Popper's typology of three worlds covertly incorporates the aforementioned fundamental psychoanalytic concepts, which becomes a highly intelligible maneuver if, as Popper allows, noted thinkers do influence each other on an unconscious level.

Conclusion

Popper's hostile attitude toward psychoanalysis allegedly stems from a stance that it just is not scientific or moral enough to suit his exacting standards (Blight 1981). Therefore, as personally a disturbing theory, key psychoanalytic formulations may have been repressed by Popper in working out his own theories. Repressed material, in disguise, as always, reemerged - the *return of the repressed*[8]. In order to fortify this admittedly specultive but intriguing case, "unemotional" reasons for Popper's lack of sympathy toward the psychoanalysis seem to be required and need to be reconsidered in light of the intriguing but speculative case made here.

References

Ban TA (2007) Fifty years of chlorpromazine, a historical perspective, Neuropsychiatr Dis Treat, 3(4) 495-500

Blight JG (1981) Must Psychoanalysis Retreat to Hermeneutics?. Psychoanalytic theory in the Light of Popper's Evolutionary Epsitemology, Psychoanalysis and Contemporary Thought, 4(2):147-205

Freud S (1891) On the interpretation of aphasias, a critical study (abstract) SE, vol.14 (1957) pp.206-215

Freud S (1900) Interpretation of dreams, SE, vol. 4 (1953), pp. 338-349

Freud S (1911) Formulations on the two principles of mental functioning, SE, vol.12 (1958) pp.117-140

Freud S (1915a) Instincts and their vicissitudes, SE, vol. 14 (1957) pp.117-140

Freud S (1915b) The Unconscious, SE, vol.14 (1957), pp. 166-204

Freud S (1923) Two encyclopedia articles, SE, vol.18 (1955), pp.235-250

---

[8] The return of the repressed: Elements that could not have been destroyed through repression reappearing in disguise as a result of reconciliation (Laplanche J and Pontalis JB 1967)

Freud S (1926) The question of lay analysis, SE, vol.20 (1959), pp. 183-250

Freud S (1950) [1895] Project for a scientific psychology, SE, vol.1 (1966), pp.281-397

Grünbaum A (2008) Popper Fundemental Misdiagnosis of the Scientific Defects of Freudian Psychoanalysis and Their Bearing on the Theory of Demarcation, Psychoanalytic Psychology, 25 (4): 574-589

Habermas J (1971) Knowledge and Human Interests, trans. J.Shapiro, Boston, Beacon Press, pp. 214-245

Laplanche J, Pontalis JB (1967) Vocabulaire de la Psychanalyse, Presses Universitaires de France, Paris, pp. 424-425

Popper KR (1963) Conjectures and Refutations, London, Routledge and Keagan Paul, pp. 34

Popper KR, Eccles JC (1977) The Self and Its Brain: An argument for interactionism, New York, Springer, pp. 36-47

Popper KR (1978) Three Worlds, The Tanner Lecture on Human Values, Delivered at University of Michigan, https://tannerlectures.utah.edu/_documents/a-to-z/popper80.pdf. , pp 153-160

Popper KR (1994) All Life is Problem Solving, Trans. by Camiller P., New YorkRoutledge, 2007, pp 17

Perron R (2008) La psychanalyse est-elle refutable? Revue française de psychanalyse, 72,4, 1099-1111

Ricoeur P (1965) De l'interprétation essai sur Freud, Editions du Seuil, Paris, pp. 81-98

Steele RS (1979) Psychoanalysis and Hermeneutics, Int Rev Psycho-anal., 6: 389-421

Winnicott RD (1953) Transitional Objects and Transitional phenomena, Int J Psycho-Anal, 34, 89-97

Winnicott RD (1967) The Location of Cultural Experience, Int J Psycho-Anal, 48, 368-372.

Mehmet Levent Kayaalp: Practicing psychoanalyst (IPA) in Istanbul, a member of Istanbul Psychoanalytical Association. He is also a child psychiatrist and interested in developement of mind in children, thought processes and aspects of destructivity in large groups.