



Professor Mark Solms is best known for his discovery of the forebrain mechanisms of dreaming, and for his pioneering integration of psychoanalytic theories and methods with those of modern neuroscience. He was born in South Africa and returned there in 2002, but commutes monthly to London and New York. He holds the Chair of Neuropsychology at the University of Cape Town and Groote Schuur Hospital (Departments of Psychology and Neurology). His other current positions include: Honorary Lecturer in Neurosurgery at St. Bartholomew's & Royal London School of Medicine, Director of the International Neuro-Psychoanalysis Centre, London, and Director of the Arnold Pfeffer Center for Neuro-Psychoanalysis at the New York Psychoanalytic Institute. His book *Clinical Studies in Neuro-Psychoanalysis* (with Karen Kaplan-Solms) won the NAAP's Gradiva Award (Best Book, Science Category) in 2001. His latest book (with Oliver Turnbull), *The Brain and the Inner World* (2002), is a best-seller and has been translated into 12 languages. He is the authorized editor and translator of the forthcoming *Revised Standard Edition of the Complete Psychological Works of Sigmund Freud* (24 vols), and *The Complete Neuroscientific Works of Sigmund Freud* (4 vols).

The *Somatic Perspectives* podcast explores somatic psychology, relational therapies, mindfulness and trauma therapies. It is edited by Serge Prengel, LMHC, who is in private practice in New York City.

*The following is a transcript of the original audio. Please note that this conversation was meant to be a spontaneous exchange. For better or worse, the transcript retains the unedited quality of the conversation.*

*Serge Prengel: Hello, I'm with Mark Solms. Hi Mark.*

Mark Solms: Hi.

*S P: So, Mark how does your background in neuroscience affect your work as an analyst?*

M S: I think that it affects my work as an analyst probably less than people would like it to do. And when I say that, I mean most of my analytical colleagues seem to want from the neurosciences immediate results, which will change what they do. And I think that this is a reflection of the fact that psychoanalysis today has become a kind of a professional trade. It's a professional skill, rather, somewhat like the skills of a dentist. You learn how to do the technique, and then you open up your practice and you get patients and you practice your technique on them. But psychoanalysis wasn't meant to be like that. It wasn't originally envisaged like that. It was originally thought of rather as a way of coming to understand the mind. It was a discipline rather than merely a therapeutic procedure. The therapeutic procedure was an application of knowledge acquired through investigation—systematic investigation of the structure and functions of the mind. So, I think that my background in the neurosciences makes me probably approach my clinical work as an analyst more like the early analysts approached their clinical work than like my current colleagues. I think that I look upon my clinical work through the assumptions and through the scientific background that was actually common among the first generations of analysts, like Freud himself.

*S P: Yes, so it's not a trade, not a system of techniques, of tools, not something that's generally simply oriented toward curing people, but a whole theory, an approach, an outlook?*

M S: Yeah. A whole theory, approach and outlook, and a theory subject to revision in the light of unfolding evidence. So, I think that I work clinically always with this in mind. In what way is what I'm seeing consistent with my theory? My theory about this particular patient in this session, or my theory about this particular patient as an individual? Or, broader than that, my theory about this disorder that this patient appears to be suffering from, and, beyond that, my theory of how the mind works? And all of that is influenced all the time by what I have learned as a neuroscientist about how the mind works. But in that respect, I'm no different from the early analysts, you see, they also started with certain theoretical assumptions and they then tested them against clinical experience.

*S P: So, the approach of a scientist is that you're getting feedback about the theory?*

M S: Yes.

*S P: You don't have a set of tools that you're using that you know are going to work?*

M S: That's right. So, rather than applying a theory and doing it like you were taught at school, instead you're *testing* a theory, and revising it in the light of ongoing experience. So, the first thing I am saying in response to your question is that I think that the way that I work as an analyst is not something novel. I think it's the way that we all used to work as analysts in the early days of psychoanalysis. And I think that why I'm doing differently from my colleagues today, is that we as a discipline have lost sight of what we originally were, which was a science and a systematic discipline of trying to understand how the mind works, and we've become more of a school of skills.

*S P: A lot of your experience both as a researcher and as a clinician is with people who have severe damage. How has this influenced you, or what has happened as you've done that?*

M S: Well, that's correct. There are two very different kinds of clinical work that I do. One kind is working as an analyst with neurological patients—with patients who have brain lesions. And the other kind is working with the more typical psychological or psychiatric patients. And when I work with the patients with neurological lesions, I think what I said earlier applies all the more so because, there, I'm exploring new territory. I'm exploring the mental, the structure of the minds of these patients, which haven't yet been explored psychoanalytically. So, it goes without saying that I'm doing much more self-consciously theory building, scientific investigation when I'm treating these patients than I am when I'm treating patients of a kind that thousands of analysts before me have treated. We understand them a lot better.

*S P: And so, with people who have organic damage...in fact many psychoanalysts would say that psychoanalysis couldn't be used with them?*

M S: Yes, well that depends again on your definition of psychoanalysis, you see, because to say psychoanalysis can't be used with these patients, is to say psychoanalysis is a fixed and immutable set of tools and they work with some people and they don't work with other people. To me, psychoanalysis is a method of acquiring tools.

*S P: So, in what way then... How does that influence your definition of psychoanalysis? What is the essence of its methods, or its discipline?*

M S: For me, psychoanalysis is an approach toward the mind which takes as its starting point the subjective experience of the patient, using the subjective experience of the patient as a sort of point of departure for trying to understand what lies behind that, subjectively. So it's trying to find the structure of the subject. In other words, what are the things going on within the subjective life of this individual that I can learn through a psychological interaction with them? What can I learn through forming a relationship with this person and trying to understand how the world is from within them, not only from their conscious perspective, but deeper behind their conscious perspective, what is the structure of their subjectivity? What is the structure of this mental agent? And that's a unique perspective. It is different from the neuroscientist's perspective, which is looking at the human being not as a subject, but, rather, as an object. Looking at the human being as a body, as a thing in space.

*S P: So as a, from a neuroscientist's perspective, you're very aware that there is organic damage to the brain of this person, and as a psychoanalyst, you are focusing on this person's subjective experience?*

M S: Yes.

*S P: And, forming a relation with them?*

M S: Yes.

*S P: And, through that, going beyond the subjective experience.*

M S: Yes. I try to get to know the patient as a person. So I don't look at the patient as a catalogue of symptoms and signs. I don't look at the patient as an example of this disease or that lesion. Rather, I look at the patient as a person whose experience has been altered by a particular etiological agent, and then I try to understand, in what way has their experience been altered? How is this patient experiencing the world? How can I explain the way that they're thinking, feeling and behaving in terms of the structure, the unconscious structure, the internal structure of their selves, of their beings?

And there is a great deal that you can learn about, that explains why the patient thinks, feels and behaves the way they do from a psychoanalytical interaction with them, that you would never learn from looking at their brains in a scanner. This is what makes the brain so special: It's an organ that you can also get to know from the point of view of its subjectivity. And I think that we make a great mistake to ignore that side of the brain, which is what the psychoanalyst can bring to it.

*S P: Yeah. So, so you really relate to this person's experience? And, and in so doing, you're not seeing a damaged person. It's an experience where you form a relationship and you have a way to have some connection, some empathy?*

Mak Solms: Yes, exactly the same as I would with any patient. The starting point is that you're engaging with the patient in a process of trying to understand them. And that's primarily through spending time with them where they talk to you about what they're experiencing, and you then explore that experience with them through interpretations, through comments seeking clarification,

putting to them what you think perhaps they're saying which may enlighten them about what it is that they're thinking and why it is that they're doing what they're doing. It's really the same as with any other patient; For me, that's the essence of psychoanalysis. As I said earlier, it's not a set of techniques that we apply but rather a motive investigation of the mind, which is where you try to understand it through a subjective relationship with it.

*S P: So are there different ways... or some ways of relating or investigating that you change as you work with different patients?*

M S: Yes. Yes, but that applies also in psychiatry in general. You know, there's a technique that you can use with a patient, with a neurotic phobia, or a sexual inhibition who's otherwise a well functioning, intelligent, and cultured person. You would be able to do a kind of analysis to such a person, a patient, which would be a very different sort of analysis that you would do with a patient who has a narcissistic disorder, or a borderline organization. They won't co-operate with you in the same way, because the nature of their mental difficulties are such that they can't bear you lording it over them, and knowing things, and, you know, being clever. It makes them feel too awful. So to treat you as somebody who's got knowledge, that they're turning to because they need something from you, is an unbearable situation for such a patient.

*S P: Mmm.*

M S: Finding when you try to interact with them and try to understand them in a collaborative effort that you can't, tells you something about how their mind works. And that's how we learn about narcissistic and borderline states. All the more so with psychotic patients. You can't do the same analytical technique with the psychotic patient that you can with a narcissistic one, or with a neurotic one. Now with these patients with neurological lesions, it's just exactly the same principle extended into a new clinical domain. You try whatever you have to do to be able to get the best access you can to what's going on inside of that patient, and the more that you understand what's going on inside of them, the more you're able to communicate with them in a way that they can use.

*S P: Yeah.*

M S: The way that's beneficial to giving them understanding and therefore providing them with ways of managing their own emotional and mental life better.

*S P: And all the while, there is that part of your mind and experience that is aware of neurological research and a different way of approaching the mind, the brain, people... from that perspective?*

M S: Yes, but I say again, remember that in doing that with those neurological patients I'm doing something which is no different from what the early analysts did with psychological patients.

*S P: Mmm.*

M S: You know, because it's a new area, a new range of clinical phenomena, you have to explore it, and formulate hypotheses, and formulate new theories as you're going along, as to what's going on in those patients.

*SP: So, as you're on the middle of a session... The part of you that has an observing, self-observing quality... Do you find yourself going back and forth in some way between say the neurological perspective and the relationship? Or do you have to be so absorbed in the relationship, in the moment, that the back and forth would come only outside of the session? Is there something where the dialogue between the two approaches is not possible, they're too different? ...*

MS: At no point do I think that the dialogue between the two approaches is not possible. As I say, I think that that has always been the case. When Freud started doing his first analyses, he had a theory of how the mind works, which was derived from his neurological education. That's where it all started. And then you test those theories against what happens clinically in the room, and then you revise the theories. Now, of course, to a certain extent you're revising the theory while you're busy doing the work, but to a much greater extent, you're revising the theory *after* you've done the work. You know, the reflecting upon what happened, is something that, I think, I do a lot more of with those patients than I do with more typical psychoanalytic patients because there's more theoretical work that needs to be done. But I think that most of that theoretical reflection is done in my own time when trying to write up a week's sessions, or trying to formulate for my own scientific purposes what on earth is going on when they're here. But then, once I've reached some new understanding, then that plays quite a big part in my subsequent sessions. Then I starting thinking "Okay, now I think I know what I'm dealing with here. Let me see." And then, for that period of the treatment, while it's a process of discovery, or a process of new formulation, then it dominates my thinking in the room with the patient more than it would otherwise.

*SP: Mmm.*

MS: But I want to move on from what I do with the neurological patients, if it's all right. I think that when I work with ordinary analytical patients, the more typical analytical patients, I think that when I said that I approach them more like the early analysts did, it refers to a certain mindset which is the mindset of a scientist, the mindset of somebody who doesn't hold the theory to be a dogma that has to be applied for ever more... but holds the theory as a provisional best set of hypotheses that we have at this point in time.

And I seek all the time to revise that theory in the light of what I've learned as a neuroscientist, because in the neurosciences of the last few decades, unlike during most of the life of psychoanalysis during the twentieth century -- you must remember, from the early nineteen hundreds until the nineteen eighties, very roughly, not a great deal happened in the neurosciences compared to what's happened since the nineteen eighties. And from the nineteen eighties onwards, there's been an absolute explosion of knowledge about how the mind works, coming from neuroscience.

I think that if you accept what I said earlier that psychoanalysis is an application of a theory of how the mind works, but it's a theory which is subject to revision, then you need to accept that, as we get better theories about how the mind works, so we're going to have to change what we do clinically. If the clinical work is an application of the theory, it goes without saying that therefore the clinical work will change as our theory advances. I think that there are things that have been learnt in the neurosciences in the last few decades, which speak directly to our psychoanalytical theories. For example: memory, emotion, motivation, drives, repression. A great many things: early mental development...

*SP: Or a sense that a lot of what happens in the mind is not conscious?*

M S: Yes, indeed. And all of this has such obvious relevance for psychoanalysis... I think that if you accept that psychoanalysis is the application of a theory, clinically, then you are obliged to take cognizance of those developments and to see how should you revise your theory in the light of them, and that in turn leads to how should you revise your clinical technique in the light of them.

*S P: But, maybe, even if we don't have enormous amounts of applications so far, at the very least, what we could say is that by not making the theory of the psychoanalytic approach invalid, they have confirmed it, in lots of ways.*

M S: Yes. Yes, that's true. In the early years of development of this attempt to integrate neuroscientific knowledge with psychoanalysis, I think that most of what we have found has been consistent with psychoanalytical theory. So that obviously results in less change in our technique, but not *no* change because, I'll tell you, speaking for myself -- and I doubt that I'm unusual in this respect -- that when there has been new evidence from an entirely different source of methodology and technology, it's an entirely independent source of evidence about the mind from the neurosciences. If we're led to the same conclusions as we were from the psychoanalytical method, I feel much more secure in those conclusions. And I think that, too, changes the way that we work. I think that, because psychoanalytical technique is an application of a theory, to the extent that you feel more conviction in the theory, to that extent you're going to apply it more confidently.

*S P: From a different perspective?*

M S: So, my starting point is the assumption that it's a purely scientific matter, that we need to take what's being learnt in the neurosciences about the structure and function of the mind and see, how do we have to revise our psychoanalytical theory in the light of that. Because, secondly, it will have consequences for technique. But firstly, it's just a purely scientific matter. And there I have to emphasize that my assumption is not "because the neurosciences say it works like this, therefore we were wrong in psychoanalysis".

*S P: Right.*

Mark Solms But rather, because the neurosciences said it works like this, that's incompatible with what we think, so now there's a problem. And the way that I deal with that is to look on the psychoanalytical data, look upon what happens in the consulting room with questions in my mind as to: Can I make better sense of this if the other theory is right? Would the other theory make better psychoanalytical sense? In other words, can I make better sense of what this patient's thinking, feeling and doing, if my hypothesis, or my assumption as to what lies behind it, is what the neuroscientists say, rather than what our early science said...So it's a slow process. It's not going to lead to radical changes over night.

*S P: Right. Is it something where you've seen some of this dialogue, this back and forth... in the area of dreams where you've had a strong interest?*

M S: Well, that's where it started historically. My own research in this area started with dreams. And just to remind you, before I started to work in that area, there was coming from the neurosciences a new theory of dreams, which was radically incompatible with the Freudian theory. This was the theory associated with Allan Hobson, and the idea that dreams are generated from a very primitive brainstem structure during REM sleep every ninety minutes. It's automatic, it comes without

meaning, without mind, it's random. And so my own research in that area led me to the discovery that that neuroscientific theory was wrong. That, in fact, dreams are not generated from the REM organizing brainstem, but rather from much higher structures, which have everything to do with our emotional and mental life. And in fact, particularly to do with the appetites that Freud felt lay behind so much of the dream world. So that's an example. My research in dreaming -- the brain mechanisms of dreaming -- is an example of what I was saying earlier about the technique only being applied with greater confidence rather than changed. And I really, I...

*S P: Yes. But actually, vice versa... From the theory you find a discovery of neuroscience that seems incompatible, so you go back to reexamine it.*

M S: That way, reexamining the neuroscience. That's right. It's very much a two-way process. To my mind, neuroscience is not the final court of appeal. It's that we know that we have two different sources of knowledge about how the mind works, and we want to use both of them. Because why would you not want to use both of them if you've got two? Why would you want to blind yourself? So...

*S P: So, in a way, this leads to a discussion of what is research... What is knowledge... What is science? And a lot of... In the everyday world, a sense that "true" science is quantitative—it has statistics... And there are other approaches to knowledge and to science that are not necessarily that way...*

M S: Well, I think that each approach to science, and by approach I mean everything from a concrete technique through a relatively abstract paradigm or methodology... each approach has its strengths and its weaknesses. I think that the correct way to deal with the multiplicity of the approaches in science is to look for converging lines of evidence. If things are compatible with each other, I feel that we're on the right set of track. And I'm saying this not just as a general philosophical point, but rather, specifically because in the case of the mind, we're dealing with something which is very difficult to study by many scientific techniques, which rely upon quantification and experimental replicability. You can't do this with the life of the mind. That doesn't lend itself to those sorts of techniques. It's something which is invisible. It's something which is dynamic. It's something which is individual. It's fleeting, it's fugitive, you can't catch hold of it. You can't replicate it, you can't repeat it, you can't experimentally manipulate it. And, I think it's very much to the credit of psychoanalysis that it has adjusted its investigatory methods to the nature of the subject matter, rather than to say: Well, this subject matter we can't study, so we're going to leave it out of account. You know, I don't think the essence of science is quantification, or measurement, or experiment. I think that that way of doing science has great advantages, but also great disadvantages when applied to mental life. So, one of the benefits of neuropsychology is that you take both sides. We use methods which are not easily quantifiable, which nevertheless do proper justice to the nature of the subject matter of the mind, but then we correct them, or constrain them by looking at the same things using the other methods too. And, between the two approaches, we hope to come to more secure knowledge.

*S P: Right, so the convergence... And the idea of convergence is also consistent with the idea of holding different approaches in your mind, as opposed to having to settle for one? And the approach of it being a discipline as opposed to being a set of techniques, so there's a sense of observing while holding different options, different possibilities?*

M S: Yes. I think that that also is something which has a long tradition in psychoanalysis, if you're only to think of Freud's notion of there being different points of view in metapsychology: There's an

economic point of view, a dynamic point of view, a structural point of view. And this is just adding an anatomical point of view. The stuff of the mind is so difficult to catch hold of. I think that it sort of requires this kind of multidimensional approach.

*S P: Also the idea that Freud, who was a doctor, and interested in neurological phenomena, was also very interested in myths. Very different approaches, right from the beginning of this work...*

M S: Yes, I agree with that. And, you know, that's the great tension in psychoanalysis. Freud said in his early publications that he was aware that what he was writing didn't have the serious stuff of science. It sounded more like short stories, which embarrassed him. But, then he said, nevertheless, the nature of the subject matter seems to require it. And I think that that was very much to his credit that he was able to use the tools of the arts and the humanities, at the same time as using the tools of the sciences, because the subject matter demanded it.

Anyway, having gone through a period of my own research, where it was a matter of affirming and confirming basic psychoanalytical theories... That altered my clinical work only in the sense of making me have more conviction, and more confidence in the technique. And that's no small thing because it really does make a difference to how you approach a dream in an analytical session. If you believe that, behind it, there is an unconscious wish, you know, it's a very different thing you're going to be doing than if you feel: Well, you know, let's just see where this goes, this must tell me something about the mind of the patient... That's true, but it's a much more specific claim that Freud made, and I now approach dreams with much more of that expectation in mind.

But there are things that are less obviously consistent with Freudian theory, and I think perhaps the most outstanding example of this kind is drive theory. The nature, the classification and the nature of the drives was always a very uncertain part of Freud's theory, because the drives are so very far removed from the conscious surface that you actually have access to in an analytical consulting room. It's the deepest layer of the mind, it's the furthest away from consciousness. And, with all due respect to the psychoanalytical method, it's not the most obvious way to go about trying to understand, trying to discover and classify the basic biological forces that work in the human organism.

*S P: Yeah.*

M S: Nevertheless, Freud did again, to his credit, recognize that we did have to formulate some hypotheses about what the basic driving forces were. Because they are just that, the basic driving forces. Now, when it comes to neuroscientific methods, there's no special difficulty, with the methods we have available today. There's no special difficulty in studying the drives. It's very easy to study the drives, especially if you think of how Freud conceptualized what a drive was. You know, it was a measure of the demand made upon the mind to perform work by virtue of the connection between the mind and the body. It's very difficult to examine the connection between the mind and the body in an analytical session with an ordinary neurotic patient. But neuroscientific methods study the body directly, and neuropsychological methods, neural-behavioral methods study directly the effects of the body on the mind. That's what the whole field is all about.

If you look at the effects, as can be done in a great many different animal research methods, of the various appetites, the various bodily needs being stimulated or deprived... and seeing the effects on the behavior of the animal... and then, understanding what the brain mechanisms are that mediate those effects... These are things which are easily accessible. So, we've made enormous strides in neuroscience in understanding what the basic brain mechanisms are--what Freud called drives and also sometimes called instincts. Now, there's an example of contradiction.

*S P: In what way?*

M S: Well, Freud's view was that there are two drives. That the one is an overarching, appetitive drive--an overarching, libidinal, erotic drive, you know. Different words can be used for it, but, basically, it's got to do with desire, with an approach toward the object world in order to satisfy desires through pleasurable experience. And then, there's a second set of drives, which are essentially destructive, oblitative, wishing to destroy... and this gets directed outward toward the object world in the form of aggression. So it is that there are basically only two drives. And you can combine all the pleasurable, pleasure-seeking tendencies under one heading. And you can combine all the destructive, or negative, or opposite tendencies under another heading. Now the evidence emerging from the neurosciences is, first of all, yes indeed there is one all-purpose, pleasure-seeking object-oriented drive, a sort of overarching, appetitive drive. And that's very gratifying to find confirmation of Freud's very broad conception of a sexual drive, what he called libidinal, or erotic, or sexual drive, which is not sexual in the narrow sense.

*S P: Right.*

M S: And, note, it's startling to see that there is indeed such a brain mechanism, and this is very gratifyingly confirmatory. But that's the only point of agreement. There seems to be, under the aggressive drive, a quite separate... There's an aggressive drive, an anger, rage drive, which is quite separate from a fear, anxiety drive. It's two separate systems. It's two different negative emotions. And also a panic or separation distress drive, which is separate from the other two. So, these don't have a confluence within one system. They can't be reduced to one common denominator. They function entirely independently of each other. It's also important to recognize...

*S P: So how would that... That difference, is that something that would have implications at the clinical level? Or, is this something that's an interesting point of theory that does not affect the clinical experience?*

M S: No, it's the kind of thing that I was saying earlier when I say we have to look again at our clinical experience in the light of that. If there is a system in the human mind, as there appears from the neuroscience to be, which is responsible only for trepidatious anxiety... It's a fear anxiety system—it can be overly strong, it can be overly weak in the individual. And this is one of the basic constituents of their mental life, it's a fundamental driving force in their mental life.

Separate from that, there's another one, which has to do with aggressivity and anger.

And, separate from that, there's one that has to do with tendencies toward sadness or separation, distress or panic.

Then, I think that you would look at the clinical material very differently. You would think, somebody who has difficulties within one of those domains, you wouldn't be necessarily wanting to see how can you derive this from something else, when, in fact, it's one of the fundamental ingredients. So, and I'm really only touching the surface here, there also seems to be a drive for social dominance, social hierarchy formation, which in childhood has to do with play, but in the older animal has to do with pecking order, competitiveness and deciding who's going to be on top and who's going to be at the bottom. And, this too is a relatively independent system.

So where Freud wanted to understand the conflicts, the dynamics underlying psychopathology, in terms of two fundamental forces, and the incompatibilities between them, we seem to be dealing more with five, six, or seven fundamental forces, which can be in conflict with each other, or

incompatible with each other. One of which can be overdeveloped and another of which can be underdeveloped, given the genetic makeup of the individual, because it always was within the Freudian way of thinking that the drives are our inheritance. This is what's it, this is what's given. It's not something that's individual in relation to experience.

*S P: So, then, in effect, it enriches the clinical experience, and the thinking about the clinical experience because you have an additional question to...*

M S: Very much so. Now, I would be unfortunately overstating it if I suggested to you that we now have a new drive theory in psychoanalysis. But, we're certainly in a phase, I think, of radically questioning our drive theory, and looking again at--those of us who are interested in this are looking again at clinical material with these other possibilities in mind.

*S P: How is this affecting your editing the works of Freud?*

M S: Not at all. I don't think that that's the correct... Just as Strachey, who was the early editor and translator of Freud's works tried to withhold his own theoretical opinion as far as possible, and not burden the reader with his opinions... So I'm trying not to. I think that the only way in which my interest in this field has affected my editing of Freud's works is that, first of all, it made me not stop at 1900 or 1895, but rather go further back. Now I've translated all of Freud's papers, including the early neuroscientific ones, because I think that we will better understand the early psychoanalytic papers if we see what they evolved from... Freud's own thinking. So, I've added an extra four volumes to Freud's collected works in English. When I say added, in fact, I'm going to be publishing the first twenty-four volumes first, and then the additional four, second. Just because of time constraints.

*S P: So, as we're coming to the end of this, is there something that you would want to add, either to wrap this up, or to talk about something that we haven't touched upon?*

M S: Well, no, I think that those are the essential points. I don't know how well I've been able to convey them, because they might sound very abstract in places. I think that the, for me, it all comes down to something really quite simple and straightforward. We have to remember that psychoanalytical therapy is a way of treating patients which is derived from a theory of what's gone wrong in the mind, which, in turn, is derived from a theory of how the mind works. And, therefore, we should be putting an enormous amount of effort into making sure that we've got the right theory about how the mind works. And, therefore, also, any advances in that theory must have consequences for our therapy. I only hope that the neuropsychanalytic development will result in more of this type of mindset among my psychoanalytic colleagues. I think that's the most important thing that we can do with neuropsychanalysis--to influence psychoanalysis in that way. It's not the only thing we can do, I think, and perhaps this is where I could end,. I want to also emphasize, as much as I possibly can, that I see it as a two-way process. I do think there's a great deal that neuroscience has to learn from psychoanalysis. And it has to do exactly the same things as I'm recommending to my psychoanalytic colleagues. Neuroscientists should also reexamine some of their assumptions and hypotheses about the mind in the light of what we've been able to learn from a hundred years of psychoanalysis.

*S P: But, also that it provides some kind of big metahypothesis to test... instead of just looking from little points of detail and microresearch? It gives some kind of a vision to validate, or invalidate?*

M S: Now, I think that there's been a sufficient amount of microresearch in the neurosciences for there to now be the need to integrate all the little peppercorns into one overarching picture. And, I think that they're ready for it, that they want it.

That's why we're now beginning to take seriously into our sights, in the neurosciences, questions like the nature of the self--which are enormously complicated psychological questions. And I think that there is a great deal that psychoanalytical theory has to offer the neurosciences by way of, at least, a first set of hypotheses, which can be tested using the tools that neuroscientists have available. So that it isn't just a theoretical kind of shotgun approach. You know, I'm not alone in saying that. Fortunately, we have a recent Nobel laureate in medicine, Eric Kandel saying that. A major neuroscientist, saying exactly that --that psychoanalysis offers still the best framework of basic hypotheses about how the mind works, and which can be utilized now in the neuroscientific programs, which are just beginning.

*S P: Thanks Mark*

 *This conversation was transcribed by Dasha Jensen.*

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