



Presidential Commission  
*for the Study of Bioethical Issues*

## TRANSCRIPT

### **Roundtable**

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DR. WAGNER: Let's go ahead and collect some thoughts for a final session here. Christine. I got you. Actually I shouldn't have been yelling at you because I don't see Dan or Nelson here. Oh, we got Nelson. Why don't we - Dan is so wonderfully perceptive. He can jump in halfway through this and he is good like that, so let's go ahead and get started.

Oh, here's Dan. Perfect, perfect timing. Perfect timing.

With thanks to all of our presenters and panelists. Let me try to frame up an initial question anyway to get the round table started.

We could have spoken all morning on just about any of the tangents that we took our questions - that our questions took, but we do have a task of defining a charge in this area of neuroscience, and given that there is the prospect that we will have more avenues by which to perceive and perhaps even to know ourselves and to know others, if we could address as a Commission only one aspect of the impact of the advances in neuroscience, what would you recommend that should be?

Bernie, I have a sense that I know your answer to this, and maybe we ought to start with that. Why don't you

summarize into something succinct.

DR. LO: My hope is that you'll tackle some of the clinical dilemmas, sort of take all these philosophical issues and the new scientific knowledge and sort of really bring it down to the levels of patients, their families, and their doctors and giving them guidance that will actually help them when they're trying to make a specific decision.

DR. WAGNER: And doing so in view of the new technologies.

DR. LO: The new science and the long-standing philosophical analysis.

DR. WAGNER: Absolutely. Blend these things together. Anthony, you're looking at me. You shouldn't have done that.

DR. WAGNER: I'll learn here I guess, so I guess maybe coming in I would have noted issues about privacy rights and fundamental issues about sort of - but hearing Bernie and ways in which data along these lines may have a fundamental impact on families in terms of wrestling with these very difficult decisions they have to reach. It's hard to argue that that shouldn't be sort of something that one takes up as well.

DR. WAGNER: Well I'm not asking you all to come to consensus, but I do think the privacy issues or other issues that you bring up as well. Marya, do you want to give it a shot?

DR. SCHECHTMAN: Yes, I mean it's difficult. Obviously it seems to me that the crucial thing would be to give some guidance both in the clinical dilemmas and I guess that's what I was thinking of more when I came in and now thinking about the privacy issues more, so they both do seem important.

For the clinical dilemma, I mean I think I have less to say about the privacy, but it does seem that getting a clearer handle on first of all what it is we mean by solvent, and in particular separating the metaphorical uses from some more fundamental sense which I still think is completely connected to the more metaphorical uses, but it is more than just a more extreme version of the kind of change we talk about in the metaphorical case but something where there's a real loss of integrity, what that amounts to and then thinking about various interventions.

I mean I guess the question that I would add to privacy and to these clinical dilemmas is the question that

Amy brought up about forcing interventions and what is it that you are threatening when you threaten someone's self.

DR. WAGNER: John.

DR. PERRY: Well everything's important, of course, but I thought what your Chair brought up is really an intriguing place where maybe some progress could be made.

That is, if one disregards the kind of cosmic pictures of responsibility as requiring some kind of contra-causal consciousness or something and focuses on the way we actually attribute responsibility and diminished responsibility for various kinds of factors that have names in the law, diminished capacity, overwhelming urge, so forth and so on, and look for first a clear criteria for what's meant by those and then secondly for neurobiological markers of them and see if there's any real scientific biological basis for distinctions that have some currency in the law.

I think that would be an enormous contribution.

DR. WAGNER: And the ethics associated with how those understanding are used.

DR. PERRY: Yes, yes. I mean well we have a very famous case in San Francisco of Dan White and the Twinkie Defense and, you know, people make a lot of fun of that, but

do we really know whether there was something to it, there was some real brain activity that diminished his ability to use reason to come to decisions and deliberation? I don't know.

DR. WAGNER: Anthony.

DR. WAGNER: I would note that I would agree that that's sort of a fundamental issue, but it's remarkably challenging.

The first -

DR. WAGNER: May I ask - may I ask is it also imminent, as imminent as some of these other questions?

DR. WAGNER: Well I think if one could make progress on it, the implications at least for the courts as well as for the - that the law of neuroscience, the MacArthur Law of Neuroscience Project, wrestled with this issue for the first phase which with an extension was sort of a four-year window and continuing to wrestle with it in the second phase but kind of stepped back a little bit because it's remarkably difficult.

It's difficult for a number of reasons. One is sort of the way science versus law or medicine sort of operate, right. Science you're aggregating data. We're getting the central tendency and that's what we learn about

and very little bit of the data and the method sort of allow us to say something pretty precise about that individual and what the courts care about is well given that that individual has had a stroke and lost part of the frontal lobe, has that altered that individual's ability to make appropriate sort of societally agreed-upon appropriate goal-directed actions which makes it more impulsive, et cetera.

That's - the group-to-individual issue which I know cuts again across neuroscience and law to many different kinds of data and medicine and other contents, that's tricky, and there's going to be an effort now led by David Faigman here at UC Hastings to try to sort of push and make some recommendations on that front.

So on the - the second issue is given that one has - one can determine sort of - let's say one could competently said there's - this individual has diminished responsibility because of some underlying neurobiological condition. It's not clear at least in some situations what one does with that. Does that lead you as say a jury to want to make certain that you lock the individual up or have some intervention such that this doesn't happen again because they have this propensity or does it absolve them, and so -

But the issue of measuring and knowing when based on the neuroscience measures that we have when somebody clearly from their brain patterns or where a lesion happens to lie is or is not in a more versus less because it's not going to be categorical. It's continuous more versus less sort of control over the behavior.

I don't know if that's imminent. I think it's a fundamental issue, but I don't know that as a science we have an answer and that we're close to providing an answer except for in the extreme cases.

DR. WAGNER: And the reason I ask about imminence is what should our next -

DR. WAGNER: Your task and charge.

DR. WAGNER: Yes, that's our task. Nita, I bet you have a comment on this.

DR. FARAHANY: I do, I have a comment and then a question. So I agree with you and Anthony that I think this is a very difficult question and a part of the problem comes from different norms as to what scientific understandings and responsibility are versus legal conceptions of responsibility, and scientific conceptions of responsibility seek to understand the causes of behavior and legal conceptions of

responsibility seek to ascribe responsibilities to agents of action and to hold people accountable for their actions and then how that intersects depends on your theory of punishment and whether or not it makes sense according to your theory of punishment.

But along those same lines, John, you said something quite provocative I thought earlier in response to my question about genes and genomes which is there's a difference between me and mine and being able to define what is mine versus what is me, you know, that there are different conceptions of self and thinking about, Anthony, what you said about the difference between automatic and habitual actions versus conscious and determined actions.

Those two things intersect with me on this question of responsibility which is how do we think about what is my action to which we can ascribe responsibility.

So if I take a gun and pull the trigger of it and yet I have a predisposition to impulsivity or aggression or have a promoter region of monoamine oxidase-A, say, that it's deficient and together with my environmental stressors that makes me more likely to pull the trigger of the gun, but I nevertheless identify with the action of pulling the trigger

of the gun. You can ascribe to me that I pulled the trigger of the gun, does it make it any less my action for purposes of responsibility and how do you define what is mine in that sense?

DR. PERRY: Well that's I guess where I think although the - I'm sure that the answer of all these age-old questions about responsibility and diminished responsibility and much less understanding what lawyers are up to isn't imminent. Still some distinction - some things with the neurobiological vocabulary and understanding we have - some age-old questions should be able to be more clearly set and the one you just suggested is one.

I mean if there are certain regions in the brain that are responsible for deliberation, perception, reasoning, and so forth, and they're relatively unimpaired in an individual but there is something unusual going on in the areas of say desire formation or lack of inhibition, how should we think of that?

Should we think of that as something that calls for no punishment, different kind of punishment, different kind of intervention, and so forth and so on, then a case of someone whose basic abilities to reason and deliberate have

been challenged?

I don't know the answer, but that seems to be a question that if we knew there was a scientific grounding for distinction might be thought of.

In the law the whole idea of knowing the difference between right and wrong is supposed to be very important, and does that make sense?

DR. FARAHANY: And I hope that you'll chime in on this, when I say me and mine and the reason why that struck me as particularly interesting is that does understanding the causes of behavior and contributions to behavior make it any less my action, and, you know, ownership of actions - I mean I think you're answering this question, but just to make clear why that part of it was interesting.

DR. SCHECHTMAN: I mean I think there are two different questions. One is, is it my action and the other is am I responsible for it, and those are not necessarily going to both have the same answer, so attribution I think we can say something about.

The responsibility question is harder, but it seems there's a general sort of methodological issue which comes out in all of this but that can only be addressed on a

case-by-case basis and not as a general methodological issue which is that the notions of volition and consciousness and so on that are getting discussed in science just aren't going to be the ones of everyday life much less the ones of philosophy or law or - they are just these different ideas, and so we want the ones that we use in law and everyday life to reflect some underlying reality and not be completely off base but at the same time they have a practical purpose that can't be subverted just by finding something out about what the cause is or what the mechanisms are, and that's I think the radio analogy.

So the question is it was easier when the neurological knowledge was much cruder and you just could say you just can't get from here to there. We still have to talk about responsibility and these other terms, but now it seems that it really is it's almost as if in a case-by-case and not individual by individual but situation like the one you raised.

A situation just see well what is the state of the scientific knowledge, how are we using these terms, and what kind of equilibrium.

DR. WAGNER: One - your answers as well as Nita's

comments reminds me that in some sense just how imminent - I was thinking of sort the adult agent, but we've already seen that, in fact, the kind of data that we're talking about, not at the individual level but at the group level has been drawn upon by the Supreme Court with respect to juvenile death penalty because of this recognition that one, it's very difficult to make the individual assessment and so let's not make the individual assessment, but we do know as a group there's neurobiological differences but that that group will grow into outcomes better states and whatnot, so maybe I was premature in sort of noting that there is some immediate context in which this class of data are coming in and that you don't always need to be able to say something about the individual.

DR. GUTMANN: I just want to underscore something that I think Marya and Nita and John are all emphasizing. I think we're all on the same page but it's worth for the Commission just underscore.

We are charged with making recommendations about ethics and about practical ethics as Bernie has urged us to do in clinical case, but it would be practical ethics if it's about law and responsibility as well or about privacy, and I

use the term practical ethics because ethics as has a practical purpose in the world.

One of the things we have to guard against is being, let me use the word wowed, by the sophistication of science in the sense that we need to know what science is telling us and we need to ask what the relevance is to the practical ethical concerns, and in some cases it may be - go beyond some of the cruder understandings we have right now of what incapacitates people.

In other cases it yields a sophistication that's extremely important for our scientific knowledge but doesn't have a lot of practical relevance yet at least for notions of legal responsibility or privacy or clinical care which themselves are very sophisticated notions and we have to deal with those at a sophisticated level.

Let me just say something very specific now about something Anthony just said. In the law there is a distinction between how we treat juveniles and how we treat adults, and that isn't done at an individual level even though we know that juveniles mature at different rates and yet for practical purposes because it's sometimes important to have bright line laws we make those distinctions.

So we're going to have to work inductively from the purposes of ethics back towards the science, taking into account what the science can tell us.

DR. LO: If I could just tag one thing on to that, I also think it would be important for you to call attention to the limits of this new scientific knowledge, that there are some things that they will - that the scientists will put forth as valid data that don't answer the underlying policy, ethical, and legal questions.

DR. GUTMANN: I couldn't agree more, Bernie. I think that's another important point to underscore.

COLONEL MICHAEL: Picking up on that theme and some of this discussion I had with Anthony at the break is, you know, it seemed to me from the discussions that you led, the science isn't really there. I mean you showed us four examples and I think you carefully chose your word exemplar for the fourth case where there is some statistical association that potentially could have been useful if you were running the medical corps of the IDF, but where do you see the real ethical issues in terms of when this science is going to be relevant to the everyday clinician who may, as Bernie says, be having to sit down in a room to discuss with

family whether or not the advance directives still are relevant or not.

This is going to become - will it come truly from the intersection of the direct measures of neurological function or structure that you describe? Will it come from the intersection of that and genetic data, and there is some early indication that Alzheimer's that may be precisely the intersection where the dilemma is first going to fall?

DR. WAGNER: I think the answer must be it's going to depend on the case. It's going to depend on what you're talking about.

I think there actually are situations, and I want to make clear that none of the examples, none of the things that I introduced, I'm advocating for, but I think that I tried to identify instances where it's getting kind of close where one needs to start to think about the ethics.

Can I - if - I feel uncomfortable saying this, but I actually think if one took the individual off of the Detroit Christmas Day sort of terrorist attempt and you didn't know much about that individual other than their nation of origin and perhaps that they might run with one of N possible groups, if the individual didn't bring forward - use countermeasures

or things along those lines, I think one could probably get above chance, classification of which of these faces from Group 1 versus Group 2 versus Group 3 has this person actually seen before.

I don't think we're that far. I think there are a number of fundamental constraints on that detecting memories, but I think we're getting close to the tension point where one needs to start to wrestle with well so what are the privacy right issues, what are the - I think we're there on that.

For some of these other examples, I think it's early days. I don't know whether it's just going to be structural or functional imaging or whether it's going to be in conjunction with genetics, in conjunction with other new approaches, but, you know, there's a major push by the NIH, by our society to try to make some progress here so that we can effect better outcomes, but the consequences of that we could be creating sort of ethical tensions as well.

So I don't know how close we are on particular instances such as the one I - this neuropredictor for stress outcomes, but I do feel we're pretty close on others such as these issues that I think have sort of privacy rights.

DR. WAGNER: That's terrific, and actual - a segue

- I think, Anthony, both you and Marya you said you came to the session today thinking we would talk more about privacy. Why don't we do that for a little while?

You know, presumably we are comfortable getting inside one's skull to - for purpose of diagnosis and looking at disorders and things like that, less comfortable in what you just talked about, ascertaining motive or for that matter accessing protected personal histories.

Give us some guidance as a Commission. If we begin to think about - and we must in whatever we pick up - some of these privacy issues.

What are some ways to think about where to draw lines or in your view, if you can get into my skull, welcome to it, and I don't have any privacy, I don't have any presumption of privacy.

DR. WAGNER: I personally don't feel like I have the expertise to weigh in on where one should draw those lines, but I do think it's something that the Commission might want to think about taking up partly because there may well, and this is something that - I did a talk at Stanford Law School, and Nita appropriately was riding me and giving me a hard time about a particular aspect of the data we had.

This had to do with - this gets back to kind of our discussion about automatic responding, implicit sort of memories, etcetera.

It may well be possible. Our data didn't show this, but Nita was appropriately nudging me to say you haven't done the experiment quite right.

It may well be possible to violate privacy rights because the individual does not know what your goal is because you're probing their memories indirectly, implicitly, and you're getting these sort of residue traces in other memory systems that reflect past experience, so I think there's not only the privacy right issues, but now there's on top of that - it's a little harder when you're asking people for overt behavior.

You can do it, but it's a little - it can be sometimes harder to induce them to reveal knowledge that perhaps they may not want to reveal.

It may well be once you go to the neurobiological substrates of that knowledge, you might be able to sort of get to it, so I don't have an answer for where the line should be drawn. I'm just sort of highlighting another tension.

DR. WAGNER: Did you want to add -

DR. LO: Yes, I don't have the line either, but you may want to focus some attention on how you collect this neuroscience data.

As you know, as your previous report I think discussed, there's a lot of interest now in using information that was gathered not in a research context, but in routine clinical care or in another research project or just from mining specimens that happen to be preserved, and so you may find information on a topic, but it wasn't collected for that particular research which I think your notion that there was volumes of functional MRI data that can be reanalyzed.

What if the person from whom those data or information came would object to certain kinds of research? You can imagine, for example, someone saying, you know, I don't mind your using my materials, my stored blood samples to study the genetics of Alzheimer's, but once you start talking about the genetics of anti-social behavior or some aspect of criminal behavior, I really don't want you to use my specimen for that. Now can you do that when you're doing a whole genome sequencing and making it publicly available?

If I'm getting a functional MRI study for one research question, another researcher later on wants to

aggregate that data for a question that had they asked me at the time I would have said no, thank you. I'll go to this other study instead.

What attention do we pay to that particularly in light of the economies of scale that are possible from secondary uses of data?

DR. PERRY: Well as a philosopher, I like to think up stupid, simple examples and go from there, but Anthony's case is intriguing. I mean let's suppose that I stole some serum that is needed to help 20 or 30 people and I don't want to tell you where it is. Why? Well for one thing I don't want to incriminate myself. Maybe I want to dig it up later and sell it.

Well it would probably be wrong to torture me, at least prima facie wrong, you know. I mean once - if the serum was needed to keep human beings alive on earth probably, torture would be okay. Maybe. I don't know.

But anyway, torture is pretty objectionable. How about - and that's not your Commission's problem, but I suppose you could slap a football helmet on my head and push a few buttons and tell where the serum is.

Well that seems considerably less objectionable

than torture. Do I have the right to not have you do that? Well, do I have the right to not have you use that as evidence against me in court? That's an interesting question. Probably there's a pretty good case for that. Self incrimination, but does it follow that I don't have a right for you to find out about it in that way. I would be pretty dubious that that followed.

How about the case in which you don't do that but, you know, I have a stroke and you find it out inadvertently.

DR. WAGNER: But that's part of your self, so it's not self incrimination in your view if I extract it from yourself. It's only self-incrimination if you volunteer to give it from yourself?

DR. PERRY: No, yes, I mean in some sense it's clear it's self incrimination because you got from myself, but it's not what we think of self incrimination where you're induced involuntarily to - well, so I don't know. I don't know what I think.

DR. WAGNER: That was my answer.

DR. PERRY: It's not obviously not self incrimination but whether that means you can't use it in court or you can't collect it, I suppose that's the kind of thing

your Commission should think about.

DR. GUTMANN: At the risk of belaboring this, I'm not sure what you said. If you - you didn't say whether you agreed to have this helmet put on you and you gave informed consent. Surely that matters in this case.

DR. PERRY: Well if it were me, I might say yes, you can put the helmet on me and find out where I left it, but I'm not going to tell you, and the reason I'll let you put the helmet on me is because the Bioethics Commission said that that can't be used in court against me, but -

DR. GUTMANN: Then we either deceived you or didn't deceive you, and that -

DR. PERRY: But what if you painlessly put the helmet on, you know, and it's no big deal, but I didn't want you to, but those are issues you guys ought to think about.

DR. FARAHANY: So in fact what you are saying is very consistent with current doctrine on self incrimination which is making the body a source of real or physical evidence to be used against you in court is not self incrimination, so taking blood from body even compelled against your consent doesn't violate the Fifth Amendment, it isn't self incrimination, so the question is is the blood flow that's

flowing through your brain which is decoded to reconstruct memories and thoughts, is that just physical evidence or is it something else even if it's taken without your voluntary consent?

DR. GUTMANN: There's a prior question though about - with all due respect about what the actual - we don't have in court just as there's a real question in court as to whether lie detector machines can be involuntarily set up, we don't have yet a standard as to whether someone could be subjected to putting a helmet on them.

DR. FARAHANY: Right, but we do have lots of other - forcing you to do things that are not physically invasive including forcing you to give a blood sample and saying that doesn't violate self-incrimination standards.

Maybe it violates Fourth Amendment search and seizure standards, but it doesn't violate self-incrimination standards under the Fifth Amendment.

DR. WAGNER: Marya was about to say something.

DR. SCHECHTMAN: Well I was really about to say that I didn't know the answer to this question, but as a philosopher what I like to do is make distinctions and put off hard decisions.

I mean it sounds like in some sense there is a fairly easy way to argue that we shouldn't do this now which is the technology is just not reliable. I mean it's not reliable enough to get the data that you need, and I was intrigued by the idea of residue and the idea that you can't tell whether someone's really remembering or their having a false memory.

So since the technology seems so far at the moment, but I appreciate that we want to be ahead of the technology and have thought about it before it gets there.

And then I guess it really does - I mean not that I have the answer to any of these questions, but it does seem that there are different worries about the technology, some of them are in the legal context, am I going to get into trouble because of your doing this to me.

Some of them are about marketing. I mean are people going to be able to gather this information and use it to sell things to me and some of it - but I think that the thing about the drawing blood and the brain flow, I mean what that we think of is it's coming up against the same issues we keep coming up against as a sort of mind/body thing. If the self is somehow in your volition, in your will, in your

thoughts, in your cognition or is it in the body and here is a place where the fact that we can't make that distinction anymore is raising new kinds of questions because this kind of technology is presumably getting at both and simultaneously.

DR. WAGNER: Barbara.

DR. ATKINSON: I have a question about self in the narrative relative to informed consent.

There's all kinds of informed consent. Some of them, you know, you're going in the hospital and you sign a million papers, and it certainly isn't part of your narrative, and sometimes it's opting out, checking the box saying you don't want something.

Sometimes it's a real informed consent that somebody really spent some time talking to you about. That might approach being part of something that you remember you did.

If something - is there some difference in how we should be thinking about informed consent? Does the whole notion of self make you consider that informed consent should be something different than just that form that you check a box especially if something bad were to happen?

DR. SCHECHTMAN: Yes, that's a really good

question. I mean just off the top of my head, an informed consent isn't something that I've thought a lot about, but it certainly seems like the one where somebody sits down and talks to you about it and you understand what you're doing and you understand why you're doing it.

I mean not only just intuitively but in light of my view is much better, and in a lot of different ways. I mean I've actually thought of it a little bit from the other side because one of the issues I've thought about is deep brain stimulation and the question of whether radical changes in personality or affect is a result of that are so disruptive to identity that they're objectionable.

One of the things I thought is it's a big difference whether that radical change happens as a result of having thought it through and try different modalities that didn't work and then decided that this is the thing you're going to try and having a sense of how - and then you have a whole story about how, yes, it is a radical change in me, but it's one that I brought about through this whole - and there's a whole story about why that's a point in my history.

So - which seems to me would make a big difference, and also I think it's connected in some ways to

the point of why it seems so worrisome to give people treatment that they cannot comprehend the benefits of because when I've got a story to tell about how I'm going to take this and it's my medicine and we've been taught as little kid, it's going to make me better and I'm doing it for my benefit.

It's not just that it benefits me, but that I have a story to tell about what's going on here that helps ease the current burden, and so - I mean I think that's why the case gets really hard, this idea that we're such bad predictors of our adaptability and our future affect makes it hard to know exactly what that's going to look like, and that's something else that has to be taken into consideration when you're thinking about weaving the story.

It's not much of an answer -

DR. LO: If I can make just a couple of quick comments on a very difficult question. I think we need to distinguish several related concepts.

Informed consent is one thing, just authorization to let someone do something to me is another, and even within informed consent typically, particularly in the law, I think it's really focused on what needs to be disclosed to the patient as opposed to what the patient or research participant

really understood, so if you use the analogy of a narrative as opposed to sort of a log book of events, the fact that I signed a piece of paper gives people authorization.

Whether or not I really comprehended what I was agreeing to, what the implications were and whether I deliberated about it or was under some sort of rush that the line would have gotten a lot longer if I didn't just check it off right away, but also I just want to sort of toss a question out to my philosophy colleagues about narrative.

I mean sometimes we talk about it's my narrative, it's my story, and I'm sort of telling it in control, shaping it, at a certain point my narrative is constructed by other people. They interpret my life history and at some point in my life other people may be continuing the narrative by making decisions, and so how do we reconcile my own view of what my story should be versus my spouse's or my children's view and I'm getting even more doddering than I am now.

DR. PERRY: Well I would just say both now and when he was talking earlier I'm very impressed by Bernard's sensitivity to a number of issues where he's clearly got in his mind, maybe he hasn't made it explicit, but it would be good if he could.

A lot of distinctions - I mean it seems like there are some things I have a right to bind my future self to, but there's other things I really don't have a right to bind my future self to.

You know, whether my future self undergoes great pain seems like basically my future self's business and I can express my preferences, but I don't know why they should be binding.

On the other hand, I don't know why my future self should have the right to make decisions that aren't really related to his comfort at that time that do affect the interpretation of my whole life in the minds of my loved ones and others and so forth.

So just some distinctions about what people do and don't have some kind of right or appropriateness to bind their future selves to which I think Bernard's got in his mind and is implicitly applying and maybe has explicitly all figured out in an article somewhere would be a valuable thing for the Commission to consider.

DR. WAGNER: So this discussion about self and sort of who controls our self narrative and how it changes through time, and this goes back I think Jim to your opening

comments about neuroscience data and sort of neuromodulation and something I kind of skirted in terms of trying to think about what to prepare, and I focused on imaging, but there is a lot of interest on the memory side to target, kind of eternal sunshine of the spotless mind trying to target high stress, memories, and see if one could sort of eliminate those, and clearly I think if you were going to think about something that might be imminent as a Committee, you might take that up.

When taking that up though, I might along this sort of line of sort who controls our narrative, we're always manipulating our self narrative, and we're always having our self narrative manipulated by those around us. Right, our self narrative is rooted in memories we form as well as in the memories that we reflect upon, and these efforts to try to use pharmacologic agents to wipe out particular memories, it's kind of a - there's different interpretations of the data that are out there right now, but it's kind of what we are often doing right now in clinical therapy for depression. You're trying to help the individual overcome their fixation on one aspect of their life narrative focusing on the negative and bringing other aspects of the life narrative forward, so we're

always manipulating whether it's through behavioral interventions, social interventions, or through perhaps these now pharmacological interventions, we're always manipulating our narrative and others outside of us are always manipulating our narrative.

DR. WAGNER: And circumstances do that. In fact, one wonders if one of the concerns about the science fiction which may not be fiction someday of the mind-reading ability takes away the liberty for me in a particular circumstance to pretend to be someone I'm not.

Even if it's just a function, if I'm -

DR. GUTMANN: We do that even now. We do that sometimes now when we know somebody well enough. We - they give away what they're thinking. It's just that -

DR. WAGNER: That's right.

DR. GUTMANN: What you're imagining is something that would enable this on a much larger scale, but we're still imagining that.

DR. WAGNER: Yes, we not only do we - we do it all the time I think. If our political leanings are more liberal than someone else and we're at a dinner party with a group that's more conservative, for the sake of enjoying and

actually drawing conversation from one another, I don't wish you to know perhaps my political leaning.

It's very important thing to do, and to take that liberty away because somebody someday could hold up something the size of a cell phone and say you bloody liberal.

It is an invasion of privacy.

DR. SCHECHTMAN: I think this was something that I didn't get to before when I was talking about mind reading and why it would be a problem, it's just the way that our interactions with one another are set up precisely around the idea that you can keep things to yourself, and it's true that other people may know you well enough to know, but that intimacy is also - I mean we have intimates who know us that we have someone across the table who knows when we're dissembling and can sort of wink is another part of our life, so it would certainly look like life and the idea of selfhood would be vastly different if there were no difference between the way you know yourself and the way other people know you.

It's hard to imagine what our interaction with people -

DR. WAGNER: It takes away the privilege of hypocrisy

DR. PERRY: Just a quick question. I mean on my web surfer I can go push a button that will wipe out all records of, you know, the recent sites I visited, and so forth and so on, at least it claims, and erase the cookies.

Are you guys going to come up with something like that for our own memories so that our terrorists could wipe out memories of all the faces he's seen before he gets on the plane?

DR. WAGNER: You know there's a lot of interest in this. There's a phenomenon in the learning of memory of literature called - it's been dubbed reconsolidation. I won't get into it, but it's controversial as to how to think about it.

One interpretation of it is memories are kind of a series of molecular events that play out and maybe memories get stabilized in the brain. They get consolidated, and recent data have raised the possibility that if when you retrieve a memory, they become labile again and you might be able to in essence wipe out a memory that a person just retrieved and just expressed.

There's different interpretations, but there's a lot of interest in trying to develop pharmacological agents to

do just this.

DR. GUTMANN: Just to make - I'm reminded of Raju earlier in another session just to, Marya did this - the two ends of a continuum here. If we lived in a world where we could on the one hand read everybody's mind completely, it would destroy the sense of intimacy and so on.

On the other hand, those people who can't read other people's minds at all have a very serious biological and social problem, and so - and over time we adjust to different levels of ability to have other people read our minds.

So to get less abstract about this, again, it will very much depend on what the practical and ethical or unethical purposes to which these new ways of reading people's minds are used, so I can imagine the same, the very same, neuroscience techniques, the very same ones being used for incredibly good purposes and incredibly bad ones, and it is our job as a Commission to recommend where we think the good and the bad lay. Is that - because it's not - the very ability to read somebody else's mind isn't intrinsically good or bad.

DR. LO: Just to follow that another few steps, in addition to doing that, you may also want to set guidelines or

safeguards to make sure that you're much more likely to be using it for purposes that society deems appropriate and have some protection about its being used without the permission of those it's used on for more nefarious purposes.

DR. GUTMANN: Terrific. I think we've at least laid a groundwork here for future work.

DR. WAGNER: In fact, do you want to make that the last word? I think for this session, unless there's something burning in any of our commissioners, we've really run you guys pretty hard, and we very much appreciate your openness with us and your willingness to risk some speculation about the future.

We pledge, of course, to do our best as we can with this particular subject and may be calling on you in the future for a little bit of advice.

Anyway, thank you all very, very much.

DR. GUTMANN: Thank you.

(Applause.)

DR. GUTMANN: We are adjourned for this session. I want to thank my fellow Commission members, my Vice Chair, Jim Wagner, members of the audience, and remind you that we will proceed with three reports on studies before we do them

on genomics and privacy, on countermeasures with regard to children, and then on neuroscience and the self.

Bioethics.gov is our website. Thank you for any and all comments. Thank you all very, very much.

(Whereupon, the above-entitled matter was concluded at 11:57 a.m.)