TRANSCRIBEME QUIZ ANSWERS

MCQ ANSWERS:

A speaker says:
Uh, so, you know, I think there's some things that we're, like, each doing that, um, we could sort of consolidate together.
Which of the following sentences is the most correct way to format this according to our Basic Style Guide? Type A, B, C, or D in the box below.

A) I think there are some things that we're each doing that we could consolidate together.
B) Uh, so, you know, I think there are some things that we're, like, each doing that we could sort of consolidate together.
C) So I think there's some things that we're each doing that we could sort of consolidate together.
D) So, you know, I think there's some things that we're each doing that we could consolidate together.
Answer:- C) So I think there's some things that we're each doing that we could sort of consolidate together.

A speaker says:
You know, I thought it'd be fun to, like, wake up early. Um, but when my alarm went off at like four AM, I was like, "Nope, the early bird can just, you know, have that worm."
Which of the following sentences is the most correct way to format this according to our Basic Style Guide? Type A, B, C, or D in the box below.

A) I thought it'd be fun to wake up early. But when my alarm went off at like 4:00 AM, I was like, "Nope, the early bird can just have that worm."

B) You know, I thought it'd be fun to, like, wake up early. Um, but when my alarm went off at like four AM, I was like, "Nope, the early bird can just, you know, have that worm."

C) You know, I thought it'd be fun to wake up early. But when my alarm went off at like 4:00 AM, I was like, "Nope, the early bird can just, you know, have that worm."

D) I thought it would be fun to wake up early. But when my alarm went off at four o'clock AM, I thought, "Nope, the early bird can just have that worm."
Answer:- A) I thought it'd be fun to wake up early. But when my alarm went off at like 4:00 AM, I was like, "Nope, the early bird can just have that worm."

A speaker says:
I mean, he wanted to, you know, give the dude some money. But, like, he hardly had anything in his pocket. I mean, the guy's broke.
Which of the following sentences is the most correct way to format this according to our Basic Style Guide? Type A, B, C, or D in the box below.

A) He wanted to, you know, give the dude some money. But he hardly had anything in his pocket. The guy is broke.
B) I mean, he wanted to, you know, give the dude some money. But he hardly had anything in his pocket. I mean, the guy's broke.
C) He wanted to, you know, give the dude some money. But, like, he hardly had anything in his pocket. The guy's broke.
D) I mean, he wanted to give the dude some money. But he hardly had anything in his pocket. I mean, the guy's broke.
Answer:- D) I mean, he wanted to give the dude some money. But he hardly had anything in his pocket. I mean, the guy's broke.

As explained in our Basic Style Guide, how should you indicate a change of speaker in a file? Enter A, B, or C in the box below.

A) Create a new line and indicate either S1, S2, or S3, depending on the order the speaker spoke in the file.
B) Hit Enter/Return once to create a new line.
C) Create a new line and include the speaker's name, if you know it. If not, name the speaker with Male or Female
Answer:- B) Hit Enter/Return once to create a new line.

Which of the following options uses the Guess tag correctly? Type A, B, or C in the box below.

A) He failed his [chemistry class?] but aced advanced [physics?].
B) The peach [fell] from the tree and landed on his [head].
C) He's a former member of the National Association of [Government?] [Archives?] and Records Administrators.
Answer:- A) He failed his [chemistry class?] but aced advanced [physics?].

The following three scenarios are common in transcription. Which of the below statements is TRUE? Type A, B, or C in the box below.

A) You are transcribing a group of adults chatting at a barbecue about their children's education. You can clearly hear an argument between a few children in the background, but they do not speak to the adults nor do the adults acknowledge their quarrel. You DO NOT transcribe the children because they do not interact with your main speakers in the file.
B) You are transcribing an interview where the interviewer is on the phone with an interviewee. At one point, the interviewer mutes the call and has a short conversation with someone in the room with him who does not speak at any other point in the file, and their conversation has nothing to do with the interview. You DO NOT transcribe this side conversation.

C) You are transcribing two people chatting at a restaurant about an upcoming election. A waiter comes up and takes their order. You DO NOT transcribe the dialogue between the two speakers and waiter because it is irrelevant to the main topic.
Answer:- A) You are transcribing a group of adults chatting at a barbecue about their children's education. You can clearly hear an argument between a few children in the background, but they do not speak to the adults nor do the adults acknowledge their quarrel. You DO NOT transcribe the children because they do not interact with your main speakers in the file.

What should you do if you accidentally submit an incomplete file? Enter A, B, or C in the box below.

A) Reopen the job in your Work History and complete it there.
B) Move on to the next job. There's nothing that can be done about early submissions.
C) Send in a Help Desk ticket immediately, including the Job ID of the file as found in your Work History.
Answer:- C) Send in a Help Desk ticket immediately, including the Job ID of the file as found in your Work History.

Short Answer:

Which TranscribeMe tag should you use if you are unable to make out a word or phrase due to a difficult accent, poor audio, or an unsuccessful internet search? Please type the tag in the box below, formatted as per our style, and with no punctuation after.
Example:
[applause]
Answer:- [inaudible]

Short Answer:

Which TranscribeMe tag should you use to stand in for a word or phrase you could not understand because another main speaker was talking over them? Please type the tag in the box below, formatted as per our style, and with no punctuation after.

Example:
[applause]
Answer:- [crosstalk]

Is the below statement True or False? Type True or False in the box below.

In TranscribeMe's Clean Verbatim, you should edit the transcript to ensure the file is grammatically correct, even if the speaker did not say it that way.
Answer:- False

Is the below statement True or False? Type True or False in the box below.

In Clean Verbatim, the words wanna and gonna should be transcribed as want to and going to.
Answer:- True

Is the below statement True or False? Type True or False in the box below.

You should always transcribe brand names with the capitalization of the first letter to keep your file consistent, even if your research shows that the name is officially formatted a different way.
Answer:- False

Is the below statement True or False? Type True or False in the box below.

It is fine to copy text from Word or from a website and paste it directly into the WorkHub.
Answer:- False

Which of the following options is correct, according to our Style Guide? Type A, B, or C in the box below.

A) [Inaudible] after he ate the cheeseburger.
B) [inaudible] after he ate the cheeseburger.
C) (inaudible) after he ate the cheeseburger.
Answer:- B) [inaudible] after he ate the cheeseburger.

Is the below statement True or False? Type True or False in the box below.

In TranscribeMe Clean Verbatim, if a speaker says you're, we expand the contraction to you are.
Answer:- False

Is the below statement True or False? Type True or False in the box below.

If you come across a file that is entirely in a foreign language, you should send in a Help Desk ticket including the Job ID.
Answer:- True

TRANSCRIBEME AUDIO ANSWERS

AUDIO 1:

let's see reality versus expectations. So you prepared some bullet points for us of what you thought being an archaeologist would be like versus what it is actually like. So what's the number one card?

So the first one was, archaeologists are on TV and teaching college. I mean, that was the first thing I had on there because that's what I really thought. I was in college for, like I said, commercial aviation. I was filling up all my electives with archaeology and anthropology classes because that was kind of my passion. Like, I really enjoyed that stuff, but I didn't think you could do that for a living. And I didn't really want to be a college professor because I was like, I want to do this, but to do this, you have to be a college professor or you have to be on Discovery Channel, or you have to be Indiana Jones. And he's fictional. So that's not going to work. And that's what I expected. The reality was, after I graduated I actually-- because I decided I didn't want to do commercial aviation. And I had so many credits in archaeology-- actually anthropology that I just finished that. And it was through just a dumb stroke of luck that I met somebody who graduated the year before, and he told me about one of the biggest

career building websites that we have where all of our jobs are listed called shovelbums.org. And he told me about that site, and I went and checked it out. Submitting my resume to a company. And I was a professional commercial archaeologist two weeks later. It was pretty fortuitous that that happened, and then I became, like I said, a commercial archaeologist and a lot of the things I just mentioned were-- none of those were part of my expectations. All of that was was really a surprise because I had no idea what being a commercial archaeologist--

So describe to us what being a commercial archaeologist is like.

Well, it involves a ton of travel because to do this job, it's constantly looking for work, constantly networking, constantly moving around, constantly living in hotel rooms, and constantly being on the road if you want to be constantly paid. It's really a lot of trying to figure out how to live your life in a way that a lot of people don't realize when they're young.

Card number two.

Card number two is, archaeologists work in exotic locations. Now, that's what I expected because that's what I knew. The exotic locations thing, it really depends. And a lot of people still get that impression when they're in college because one of the requirements for becoming a commercial archaeologist is you go to a field school, and a lot of times that field school is done while you're in college. Turns out the reality was my exotic locations were like Columbia, South Carolina and Miami, Florida. Those are my exotic

locations. And it goes back to mindset, you really have to make it what you can make it. You know what I mean? You got to make the best of the situations that you're given.

Beautiful. All right, what's card Number three?

Card number three. All your time is spent working in the field and lecturing. You see, the thing with professorships is they're in their own rat race. They're trying to get tenure. They're trying to do things because they need that job security. So they try desperately not to leave. And therefore jobs simply just don't open up very often. If you want an academic position, you're simply going to have to go to where that academic position is; that's available for you regardless of where it's at. And take it and then pay your dues, because it could happen. It's just unlikely because it's a very small percentage of people, so.

Nice. All right, what's card number four?

Card number four. Pay is not high unless you're on TV. I wasn't too far off there, but I wasn't exactly right either. I just assumed that university professors didn't make a lot of money while these TV archaeologists, they must make a ton of money. But since I've been in archaeology, and since I had my blog and my podcast, I've been contacted actually by a number of producers, and then we'll do a little phone interview, or they'll do a little video thing with you. And then if you get to the stage where I've gotten a few times when they start talking about pay and stuff. I mean, it's really, really minuscule. I mean, you're really not going to be paying the bills with that. They're going to be paying

your travel expenses, and they'll be giving you some money but that's just really not the way towards fortune and glory as Indiana Jones would say.

What's card number five?

Retirement will be full of adventure, writing, and speaking. Now, I think that's actually not too far off the mark. I don't see myself if I stay in archaeology as a profession in general without really defining what my role is in archaeology. I think I could be an archaeologist for the rest of my life without ever truly retiring. I don't think I would I personally would ever retire from archaeology because I always like doing-- you really just kind of retire from different phases of archaeology, you can retire from fieldwork, let's say, but then now you're into project management or you're doing more presenting or you are writing books about your experiences or about different sites or things like that. Maybe if you're out there you are doing speaking engagements. That's the kind of stuff

AUDIO 2:

take, say, Italy today or Germany today. I mean, the differences among the things that we call German are enormous, so enormous as to lead to non-mutual intelligibility. You have to learn the national language when you go to school. It's a different language than the one you spoke at home. What happens is, between generations there are usually small changes having to do with other influences from the outside and so on, and these things are cumulative. Sometimes, they lead to pretty dramatic changes. It's like predicting the weather. It's just too many things going on. A human life is a pretty complicated affair.

The closer I get to the border between France and Germany, would the closer the languages become?

Yeah, well, in particular, if you go from, say, Paris to Rome, as you go toward the Italian border, it starts to sound more like Italian, and at some point it becomes Italian. By now, there's enough national unity and so on so you can really find the border. But if you go back a little ways, there was no border. There was just-- I wouldn't say a continuum. It's just constant changes and fluctuations and variations. And you started speaking one thing in one place and another thing in another place, and they're not mutually intelligible often. But along the way there just all sorts of changes. In France, this position is kind of extreme. In fact, if you go back to its origins, it's even a little bit comical. I don't know if anybody has actually studied it, but if you go back to, say, the 18th century and you read, say, Diderot. He explains very seriously that, here's a prediction for you, he says, "France is going to be the language of science and German and English will be the languages of literature." And the reason for this is that French is very clear. In France, the words follow the order of the thoughts whereas in German and English, the words don't quite follow the words of the thought. So French is good for telling the truth because of what later came to be called it's Gallic lucidity and clarity whereas German and English, may be Italian, they're good languages for telling fantasies and falsehoods so they'll be the languages of literature. It's a sort of naive point of view, but you can see what was going on in his head. I mean, for him, the words in French follow the order of thoughts. When you hear German it seems all confused. And I suspect that the mythology of the purity and lucidity and clarity of French goes back to ideas of that kind. After all, French culture had a certain dominance and appeal for a long time, so these attitudes get established. And some of them may have prestige

associated with them. For example, some of them may be the speech of conquering group or a wealthy group or a priestly caste or one thing or another. And we may decide, "Okay, those are the good ones and some other one is the bad one." But if social and political relations reversed, we'd the opposite conclusions.

But that raises an interesting question; why does language have rules? Why were we taught these rules in grade school? Why is bad grammar bad grammar?

Well, when your taught rules of your own language in grade school, the chances are very strong that what you're being taught is false. Otherwise, you wouldn't have to be thought it. One of the things you learn in grade school is the literary language. Now, in English, the literary standards is not so radically different from what, say, you and I grew up with, but it's somewhat different. The literary standards is not what I learned in the streets. It's not very different but it's a little different. And when I went to school I was thought the literary standard. Now, the literary standard has some principles associated with it. Some of which are those of real language. Some of which are completely artificial. They were made up by people who had crazy ideas about language. The reason you have to teach them is because they are not the person's language. Your actual language, nobody teaches you. You don't learn it anymore than you learn to see. Now, the fact is that the system that grows in the brain is sometimes different from a system which is regarded, for whatever reason, as necessary or appropriate or approved or something. some prestige dialect. And it may be different from what grew in your brain. It typically is. So what we call good English is a system which is partly artificial, I should say, which is taught to people because it was legislated to be good

English. And you asked the question, why do you have to teach people? Well, you have to teach them because it's artificial, it's not there language

AUDIO 3:
talking about extreme wealth that it's an issue of envy, or it's an issue of just playing the lifestyles of the rich and famous or something like that. And also, a broad failure on the part, I believe, of many people to understand just how much money we are talking about. Why do we care? So there are multiple issues. If we're talking about who might be asked to pay somewhat higher taxes to pay for expanded social safety net programs of various kinds, investments in children and so on, you probably are going to be talking about taxes that are a little bit beyond the 1%. If you're talking about people who are in one way or another insulated from many of the concerns that face the typical American family, you're already in that range of the 1%. But there are some really important issues where a much smaller group plays a critical role, and as I think every speaker is probably going to argue, a distorting role in our society. Some of those are more diffuse. I would argue, though, without being able to quantify it that there are social costs, that there is damages through our sense of ourselves as a society from having people who are just completely in a different material universe from the rest of the population. But what I want to focus on, for this morning's remarks, are the political implications of having people with a very, very large amount of money and a very small group of people. There is a group, and we don't need to define exactly. Maybe it's the .01% which is really what people have in mind. This is a group that is elusive. But what we've been learning recently is that there is tax avoidance and evasion. The difference is one of legality but in terms of the implications, it's not that different.That tax avoidance is a really big deal at the top. That we really have only a very imperfect notion of how much money there is there. It's also an elusive group in terms of its role in the political system. I'm an avid consumer of quantitative political science, and there've been several recent studies, particularly as a relatively new book by Page, Seawright called Billionaires and Stealth Politics which talked about how, in fact, great wealth is deployed on behalf of political decisions. And groups like the billionaires who just said, "Please tax us!" are what you hear about, and it's great that they do this. They're also extremely exceptional, and what you have by and large is billionaires spending large sums of money to promote their own self-interest in ways that are mostly below the radar, are really quite hard to track. This gives this very small group of people a lot of power. We have a formally democratic one person, one vote system. In practice, dollars talk quite loudly. The reasons they do are themselves a little bit elusive. I think if you asked even me five years ago, how much raw corruption, just plain bribery there is in the system? I would have said, "Well. That's probably not a big deal." And actually, I don't think that

anymore. There's probably a whole lot more of that than we think there is. There is a lot of soft corruption. People may not even quite admit to themselves that it's corrupt. There is campaign contributions which we talk about a lot, which are definitely a big deal although, I think maybe less of a big deal than we think, if only because at this point there's so much money floating around politics that it probably runs into diminishing returns at some point. But the thing that really motivated me as I started to think about, was the extent to which the very wealthy get to define the agenda, get to define the boundaries to the Overton window if you like, the notions of what is considered to be a responsible, sensible policy, what things do you need to worry about, how do we pay for'em, which things do we not, which things are considered to be sound and responsible policy, and which things are not. But that's been a really big deal on multiple fronts

AUDIO 4:

because often what you would see is, when they discuss the gold standard, they'll put the gold standard under fixed exchange rates, so the gold standard would be one example of fixed exchange rates. And that would be right alongside things like fiat currencies created by a world bank. There would be a fiat currency in the view of Keynes and some of the the later Keynesians which will be issued by a world bank and then individual currencies will be tied to that world currency by fixed exchange rates. So the gold standard was there, and then on the other side was fluctuating exchange rates, and those were a system in which different national currencies fluctuated in value against one another. Of course, this is not satisfactory. The key difference is that between a market-supplied money or commodity money whose supply and demand is anchored in the market, and a money whose supply is monopolized by the political authority, be it through its central bank or directly through the government. So the best systems from the point of view of Austrians, if we're using as our standard, satisfaction of consumer wants and the ability of entrepreneurs to calculate is the market supply commodity moneys, okay then things get progressively worse until we get to a world central bank. So having said that, we know as Professor Engelhardt has told us that all money originated and must have originated logically as commodity money, so all money came on to the market, all general media of exchange as some sort of a commodity. But we have the most information about the classical gold standard. Now, how do we know whether something is really a genuine gold standard or not? A genuine gold standard such as the classical gold standard and unlike the Bretton Woods false or phony gold standard. The mark of the of the genuine gold standard is that gold coins are actually in circulation. They're used in everyday circulation. It's not necessary that there be 100%

reserves though that is better. But almost from the start when money originated, governments began to interfere, so it's very hard to find a pure commodity money operating in history. So we'll stick with what we know best. We'll stick with sort of a slightly watered down version of a pure commodity money, the classical gold standard and we'll compare it, or actually not really compare it. We'll compare a little bit at the end. We'll show the step by step process by which the gold standard was deliberately, really destroyed by governments. That's Mieses' big point; the gold standard did not fail it was deliberately destroyed by governments. So what were the main characteristics of the gold standard? The monetary unit was defined as the weight of gold, I'll give an example a little bit later on. So that really gold and nothing else was money. Gold was the base money. It was in bank reserves and it was a currency in circulation. Nothing else was considered money proper as Mises would use the term. Anything else that circulated as as a medium of exchange was a money substitute. So banknotes and deposits, to the extents that they existed, were instantaneously redeemable into gold at par or at face value, and they were the money substitutes. So gold coins circulated alongside money substitutes which were really as we'll see just claims to gold held by banks. Finally, it was not necessary under the classical gold standard for a central bank to exist. The US during most of the periods of the classical gold standard did not have a central bank. We were the last industrial economy to set up a central bank. Great Britain established its central bank in 1694 or so, mainly till the king could build palaces and fight wars. So central banks were initially creatures of government as they have remained till the monetary unit was, as I said, simply a weight unit of gold. So notice something here, the franc, the pound, the dollar are homogeneous moneys. They're not separate moneys. They are all gold. Their names just denote a different weight of gold, a different unit in which the people in that nation calculate it, but the money itself was gold

AUDIO 5:

the gold standard is not a fixed exchange rate system because all nations on the gold standard use the same currency. They use the same commodity as money. What about paper currency? Banknotes and government-issued notes under the gold standard were not money proper, but as I said, they were money-substitutes. And they substituted for gold in exchange as warehouse receipts. So you were trading claims to gold. You didn't need to trade the physical gold. It gave you greater security. It was more convenient to carry around claims to gold. It was just simply a title that expressed the fact that you were the owner of the underlying asset or thing that was referred to. So let's look at some money-substitutes; prior to 1920, banks could not only issue checking deposits, but private commercial banks could also issue their own notes. So let's take one from

the farmers and merchants; National Bank of Los Angeles. Notice what it says, it will pay to the bearer on demand $20. The $20 is that gold ounce that will be paid to you if you bring in for redemption that piece of paper. So people recognize it as what it was and it was clear what it was. Just like what was written on the face of the note that it was a claim to gold. So let's talk about the connection between the gold standard and money and prices. So when in redeeming $20 for a gold ounce, they were not as a monetarist claim selling gold. They weren't selling gold to you. They were just fulfilling their contractual obligation of redeeming that claim to gold. There was no sale involved here because you can't sell a claim against what it's claiming; that's just illegal interaction. So in the long run under a genuine gold standard, the money supply is strictly limited by gold mine or as we'll see more strictly by the balance of payments for countries that don't mine gold. You can only increase banknotes and bank deposits to the extent that gold flows into the banks. There's some wiggle room there. They can change their reserve ratio, but for the most part the money supply increases and contracts with flows of gold. And this is rational. This is embedded in subjective decisions that drive the trade of goods and services. So the result was that since we had a tremendous economic growth, let's say in the US after the Civil War, we went from basically an agrarian nation before the Civil War to the mightiest industrial nation in the world by World War One. It was a tremendous amount of technological improvement of saving an investment and the accumulation of new capital and so on. And that caused the supplies of goods and services to increase year after year. The money supply under the gold standard increased extremely slowly, much slower than was the increase in the supply of goods and services. So, therefore, the natural effect was for prices to fall, and I call this growth deflation, deflation that results from growth. We were told back in the 1960s and 70s when Keynesian economics was riding high, that inflation always accompanied growth. Growth was inflationary. That's ridiculous. Economists have always recognized that economic growth is, all other things equal, deflationary. But mainstream economists were beginning to recognize that today, and that's not a bad thing. One thing I want to point out is that there's a natural market mechanism to keep prices from falling too much in some sense, even under growth deflation. You don't see it here, but prices began to rise right around the late 1890s. And they rose all the way up until 1913. But that was a natural phenomenon because it resulted from new discoveries in sources of gold and also new discoveries in how to extract gold from ore, so we had an increase in gold production from year to year over those years and that drove prices up again. But that wasn't all simply an accident where we found new sources of gold and so on. When you have a fall in prices, all prices fall, including the capital goods that are used in mining, extracting and exploring for gold. So gold becomes more valuable as general prices fall the value of gold goes up obviously

because it's the other side of the coin. And as a result, that's that that lowers the costs of producing gold exploring for gold increases the profitability of gold mining

AUDIO 6:

nevertheless, over some period, this was reinterpreted and given the contemporary naturalistic approach, namely, aspects of the world can be studied at various levels and have whatever property they had. So if in fact I can affect the moon by moving my arm, sounds crazy, but if that's the way it turns out, okay, intuition is irrelevant. Furthermore, there are many levels at which we can study this reality, whatever it is, we're going to try to integrate them. That's the sensible version of the unification problem. There is no notion of existence or reality apart from what figures in our best explanatory theories. In particular, there is no theory at all of the physical or the material; therefore, we have no coherent question to ask about what lies outside the physical. There no longer is a mind-body problem, except just by arbitrary stipulations. And the reason is, there's no such a thing as body till somebody tells us what physical means. There's no question about what lies beyond the physical, and physics has no concept of physical, just whatever we come to understand. Or maybe more narrowly whatever we come to understand in such a way that there's at least a reasonable prospect of integrating it with the core natural sciences. Kind of a loose idea, but there's no concept of physical of physical reality beyond that. Kind of the case of thinking or solving problems or speaking a language. Right now, in this sense, the physical reality-- we're most confident about the physical reality of computational representational systems, at least by naturalistic criteria. So let's take an actual case. There are recent studies in the case of language, interesting studies. Within the study of computational representational systems, you find many different categories of expression. I won't give details. But for example, there's a category of well-formed expressions, perfectly grammatical, and then various kinds of deviant expressions and they fall into all sorts of different types. That's internal to the study of computational representational systems. Only very recently, there's been some work on electrical activity of the brain called event-related potentials, in which people have pretty surprisingly but interestingly discovered specific correlates to these categories. So a particular kind of category of deviant expressions yields characteristic event-related potential, that specific kind of electrical activity in the brain. Well, that's kind of interesting. But why is it interesting? Well, it's interesting because, notice, the thing we're committed to, from a scientific point of view, is the categories of expressions given by the computational representational system. Those are the categories that come out of a background of theoretical explanation. The event-related potentials are just curiosity. I mean, what's interesting about them is that they correlate with what we understand to some extent, and therefore, maybe they're interesting.

Notice these are two studies of brain at two different levels. One it's electrical activity, one it's computational activity. In the case of the computational activity, we have reasonably well-grounded theories with explanatory character and so on. In the case of the electrical activity, we know nothing, just a lot of noise up there. But now, the study of the electrical activity of the brain has made progress because it has found something that correlates with what we understand much better. Namely, the computational representational systems. Now, maybe if these correlations are extended and placed in a richer theoretical framework, you'll actually begin to rely on them for some inquiry that will tell us something about the computational representational systems. But that's the order of priority and groundedness from the point of view of the natural sciences. I've stressed that because the usual interpretation, again, is the opposite, mistakenly. Of course, in this naturalistic approach, we would never ask such utterly pointless questions as whether airplanes fly? Or whether computers think? Or whether algorithms see triangle? Or whatever. Now, what are the real empirical questions and the reasonable research programs? Well, I think they're the ones sketched earlier. Seems to be if we want to learn something about humans or pigeons or whatever, we should begin by considering something that they do well, and we should try to figure out how they do what they do well. We postulate some particular faculty of the mind, meaning the brain at a relevant level of abstraction

AUDIO 7:

one of them being the integration of various levels of inquiry. The question of the integration of cognitive systems. The first question we expect, just their scientific faith and unity nature or something, we expect that there's going to be an answer to the first question whether we can find it or not. But there's no particular reason to expect an answer to the second, there may be, or there may not be; if there isn't, there's no unified cognitive science. For the moment, there's real progress in a few areas, including vision at the computational representational level. And in this case, also at the cellular level. There's progress in language, but almost solely at the computational representational level, on some performance, things like acquisition, there's studies of conceptual development, closely related language quite interesting. There's studies of probabilistic reasoning and error and various other topics. They’re all sorts of areas where there's interesting results concerning human cognitive function. As far as I'm aware, or within the framework of pilot modular assumptions, which as I said, seemed to be natural, but we're very far from any understanding of the articulation, the architecture, general structure of the mind-brain, apart from; a very few specific modules which appear to have their own special design that leaves most of the questions, one might like to ask in shrouded, in mystery, and it's entirely possible, that this is mystery of a kind that a

human intelligence which after all has its own specific biological properties, is unable to penetrate even in principle.

One thing that struck me was that the statement of the child acquires; language rapidly is introduced relative inexact of the same passion that the statement of Austin is near New York. How do you answer some mind-brain functionalist, who comes to you and says, “The child acquires language; excruciating slow, slowly we have this huge neural net, there are billions of synapse firings and billions of weight changes.” If it is genuinely interest relative and the child acquires right, language rapidly is only a true statement within some shared interest. How do you establish between yourself and mind-brain person a shared interest that establish that your statement is true?

Yeah. Right. That's a very good point. In fact, when I say that language is acquired very rapidly, you're absolutely right. That's like John is almost home, what's rapidly; that's only meant to stimulate your imagination. It's not meant as a proposal, the way to answer the question is to construct an explicit proposal as to how language is acquired. Now, there are specific proposals based on innate structure, kind of what I was saying before; if somebody can propose a general learning mechanism or some kind of a network or something that does anything, then we'll have something to talk about. So far, the only thing we have is highly specific structures.

The idea that we seem to be wrecking our energies studying things that people don't do very well; that seems to point to something on even on a mundane level for me. I get the feeling that are the what might be called "infrastructural problems in society" are when it comes down to it moral problems we treat as economics problems and these sorts of things. And I believe that will have to do with people concentrating on things that humans do well. And when I think about it, I think that a lot of the things that people do well are very simple, subtle things that people also take for granted. And that, most of the people in this world seems to be running around trying to impress each other by doing things better than people don't do very well. I just wonder what you thought about this kind of thinking?

I'm not sure I understand the implications of what you're saying, I agree with particular statements, we ought to be studying things people do well if we want to understand people. I also agree that the problems of society are in substantial part moral problems, but only in the sense that when we plan our actions, we try to change things or whatever. We're doing it in terms of some kind of moral values. We ought to be as clear about that as we can, some conception of what's right for people, and so on, and it’s good to be clear about that. But beyond that, I don't know where to go. I think these

subjects are too intellectually seen for deep analysis to carry us very far. You are creating us by instinct and intuition

AUDIO 8:

The site was excavated between 1962 and 1972. The archeologists that excavated it, Dr. Charles was there and his assistant, George Kretzmann for California archeologists. He had his Ph.D. from UCLA and he just happened to meet the owner of the land who was a famous artist and he had an exhibit at the Southwest museum where Doctor was there working, after talking convinced was there to come up and excavate the site. And so with volunteers and students, he worked on it off and on. seasonally, Unfortunately never wrote it up. I never got it analyzed cause he was a very busy archeologist. He had an active career, but fortunately, the artifacts were preserved and the collection ultimately was kept intact, and then it was donated to the Verde Valley archeology center. One of the spectacular things as a result of analyzing the materials or the plant remains, having worked in the Southwest for 40 years, most of the plant remains that I've been involved with are things that you can barely identify and you have to bring specialists in to determine even what it is. The plant remains that we have at this site are so well-preserved that sometimes I joke my audiences that I just went down to the supermarket and picked it up for the show because they look like they could have been actually, you know in your kitchen for a few days. There were a lot of wild plant products that they ate was a very abundant diet and your nuts, acorns, teapots, Acacia seeds, Juniper seeds, Indian tea or moment tea, and even wild grapes. So these Synology at this rock shelter, and we assume others that were planted before archeologists can excavate them. We're actually living pretty well in the Verde Valley. We also have a lot of a GAVI that was roasted both the basis which is would have been part of the heart, which is a very important part of the story. The Native American diet today and then also banana, Yucca fruits and so the fruits that looked like little mini bananas that grow prevalent all over Arizona also were eating and apparently are very tasty as well. And we have the seeds, even from them indicating that they were collecting them right off the plant and then taking them back home and then roasting a slightly roasted to the GAVI.

And what I think is really remarkable, we actually have three of us with our flowers on them still. I mean, this is just hard to believe that we would find flowers that preserve some of you that were Boy Scouts or Girl Scouts. Remember making a fire the Indian way. And here we have the, the toolkit for making fires and you can see that some are well used and some are not so well used. But clearly, fire would have been important and they didn't have a big slider. So, they had to create their own fires. And when I did some research on fire making, I was surprised to find that so many of Americans were

so good at lighting fires that most of them could light a fire in two minutes with, with this stick that they would refer to get the spark with some finger and get a fire going. And then what was really remarkable where the red arrows and what's really interesting, cause I did a study of these arrows, is that no two are like each one is unique, which is confusing to me because when you read the literature they say that well we think American Indians painted the arrows so they know who's arrow belongs to who? So if that's the case, why do we have 40 something arrows that are all entirely different then? And in fact, some of my informants tell me no, no, no, we know which arrow it is. We don't have to paint it to tell whose arrow it is. It wouldn't be important to know which arrow because if several people are hunting, they want to know who actually shot the deer. You know, cause they get a larger portion. So are there something to the identity hypothesis, but they're beautiful designs and we even have one of the arrows it still has one of its feathers on it and it's a great horned owl feather. Again to have this kind of preservation is pretty unusual for central Arizona. And you can see here where the Seenu, which is a ligament from probably a deer, was used to attach the feather and then upper part, which is missing, would have attached to here. And this would have been one of the three fletchings that would have once been present on this arrow. And a big surprise for me when I studied the four shafts, the arrows are composite arrows. So the shaft is made of Reed mercy secure with probably pitch and also occasionally it was soon wrapping and that was in split at the end to put your stone project off point.

AUDIO 8:

And when Strangelove was finished and I left the theater and I stood on the curb waiting for my father to pick me up, I had totally forgotten that I had a letter threatening to draft me into the United States Armed Services. And that's when I first became aware of the power of Stanley Cooper. The first time I saw 2001 I believe it was in Hollywood, the Pantages theater. He took you into space for the first time. I mean, since 2001 no documentary, no other movie, no IMAX experience being on the shuttle, and looking down at earth has ever really put me in space as much as 2001 did. And made me want it so desperately want to be part of that great mystery want to be at the forefront of the pioneers that would discover, you know, the monolith and Stargate and what lies beyond. So that was maybe for me, his most realistic movie that he had ever made. And I think the second most realistic movie that he ever made for me was, was Clockwork Orange. Clockwork Orange is a depiction of, of, of, of grotesque violence. But it also has utter contempt for violence. And it is almost like saying, why isn't somebody doing something about this? Where's the world when these acts of man against man are happening all over the world? You know, every 30 seconds, you know, you know, where's justice, where's order? You know, you know, why do we allow this chaos to

happen? And of course, the great morality play that is clockwork orange is that after all of this, you know, you know, deprogramming and a kind of proselytizing of the Malcolm McDowell through science and theory, he comes out the other end more charming, more witty and with such a devilish wink and blink at the audience that I am completely certain that when he gets out of that hospital, he's going to be worse than he was when he went in. And so in a sense, I've always felt the clockwork orange was Stanley's most defeatist movie. The film where he's appears to totally give up on society and the film that maybe justifies why he lives in St Albans in the safety of the British countryside. I'll tell you a quick story. When we first met, which was 1980 when he was just finishing the construction of his sets for the shining and we met for the first time, we talked a lot about movies and I was about to make Raiders of lost Ark and I was actually moving on to his stages. When he finished, I was moving in, when it was all over, the movie was done. I saw Stanley again and went to his house for dinner in London and St Albans and, and he asked me, how did you like my movie? And I only seen it once and I didn't love shining the first time I saw it. I have since seen China 25 times. One of my favorite pictures, Coover films tend to grow on, you have to see them more than once. But the wild thing is it made me one Kubrick film that you can turn off once you started, it's impossible. You got this fail-safe button or something? It's impossible to turn off a Kubrick film. But I didn't like the first time I saw it, I really wanted to be scared by it. Number one, I wanted to be frightened by it in a kind of Carnival fear. I wanted things to pop out at me. I wanted to jump out of my seat. I wasn't expecting a psychological shock storm, I was hoping for kind of visceral visual assault on all of my senses. And instead, it was about the descent into madness and he very inexorably pulled the entire audience down with him. So at that moment where you know, you know, you know, Shelley is reading the last three months of what he has been writing and we see the litany of what he has written. That is the biggest shock of the shining. You know, that was the equivalent of the chair turning around the psycho and the sudden reveal of Mrs. Bates, and it's more shocking than the sudden reveal Mrs. Bates. If you get into the protoplasm of that movie, if you give yourself over to it, you'll be more shocked by what he's written over the last four months.

AUDIO 9:

Well, I wanted to put the focus primarily on women's health today because I hear that it's something that you deal quite a lot with and there are certain issues that are crucial for women to get information about. A lot of women are concerned about weight loss and which type of diet is best for weight loss. I mean you have high fat, high carb, high protein, paleo ketogenic, vegan, intermittent fasting. People are so confused these

days, which is probably what the industry wants is that confusion. But I'm hoping you can bring some clarity to all this.
Well, I think, the first thing is we have to get away from this idea that anything that works for a period of time for weight loss is a good idea. I just did a video clip, which will air next week on the new study that came out. Everybody's all excited about and it compared a low fat and a low carb diet. They said they were the same. Well, they were both terrible diets and they were the same. They both resulted in not much weight loss. But when we get into this, anything that lose the causes, weight loss is good. I made the point in this video. Well, I'll tell you a couple of things that cause weight loss. Being in a refugee camp, you would lose weight, cocaine addiction, Oh, cocaine addicts are skinny people. So nobody in their right mind would say, let's go live in a refugee camp or take up cocaine in order to lose weight. But when the only thing you're concerned about is weight loss and you lose track of the health benefits or detriments of what you're signing up to do, I don't like that at all. If you take a look at what is the diet that will cause people to lose weight safely. In other words, you're not trading one problem for another. I know somebody who lost a 100 pounds off a paleo diet bladder kidneys. Wow, a skinny person waiting for new kidneys. That's, that's the one that works fast is a diet based on whole plant foods. It's low in fat and high in fiber and it's pretty easy to stick to feel big. It's so hard. It's not hard. You just have to learn some new tricks and tools and shopping and all that sort of thing. But it's easy to stick with. One of the things that get around that is the detriment of all. It's a problem with some of these weight loss plans is the way measuring portion control point keeping kind of thing. And people say, you know, I can just eat anything I want. So when you can eat anything you want within the realm of the foods that we eat on the side because it is really hard to overeat lentils and rice, how we're trying to do it? How many bowls at 14 grams of fiber per bowl of lentils and rice can you eat? It's not seven. So it's somewhat self-limiting and you can just have out the food and people like eating. I'm like, I don't like restriction. That's the best way to do it.
Yeah, I totally agree with that. I mean I'm, I'm limited in certain ways because I don't and can't eat processed sugars and sweeteners and oils because I get all into it.[inaudible] Sometimes I don't feel so lucky because, I, it's like I can't, you know, grab and go sometimes and go out to restaurants freely sometimes. But I have such a hard, gaining weight, which is actually really good. So, I agree with you. Can you, can you talk about why women lose bone mineral density at a quicker rate than men? And is there something they can do to slow that down?
No, and they shouldn't. It's a normal sign of aging. See, women have higher peak bone mineral density. And the reason is the demands of carrying a child and breastfeeding on the human skeleton are really, really high. So after, after menopause not going to have any more children, you start to lose bone mineral density. Men lose it too, but they have a lower peak and they don't lose it as rapidly. I tell people, you go have a test and they

tell you that you're losing bone mineral density, which is a normal side of aging. And I assume that most people know they're aging before they go have the stupid test. This is not a big revelation in the doctor's office. Oh my gosh, I'm getting older. I had no idea it was an abnormal bone loss and you can develop osteoporosis and have weak bones, but the reason I brought up the other issue is that I think it's important to deal with somebody who really has thinning bones at an abnormal rate because they're not healthy or they don't exercise.
Through, well, it's kind of like age-related, muscle loss, sarcopenia, where people gradually lose their muscle mass.

AUDIO 10:

Nonetheless, over some period this was reinterpreted, and given the contemporary naturalistic approach, namely, aspects of the world can be studied at various levels and they have whatever property they had. So if in fact, I can affect the moon by moving my arm, it sounds crazy, but if that's the way it turns out, okay, intuition is irrelevant. Furthermore, there are many levels at which we can study this reality, whatever it is. We're going to try to integrate them. That's the sensible version of the unification problem. There is no emotion of existence or reality apart from what figures in our best explanatory theories, in particular, there is no theory at all of the physical or the material. Therefore, we have no coherent question to ask about what lies outside the physical. There are no longer is a mind-body problem except just by arbitrary stipulation. And the reason is there is no such thing as body until somebody tells us what physical means. There's no question about what lies beyond the physical and physics has no concept of physical, just whatever we come to understand or maybe more narrowly whatever we come to understand in such a way. There's at least a reasonable prospect of integrating it with the core natural sciences kind of loose idea, but there's no concept of physical or physical reality beyond that. Trying to the case of thinking or solving problems or speaking a language. Right now, we are in this sense of physical reality. We're most confident. About the physical reality of computational representational systems, at least by naturalistic criteria. So let's pick a, an actual case. There are recent studies in the case of language, interesting studies of within the study of computational representational systems, you find many different categories of expressions. I won't give details, but for example, there's a category well-formed expressions perfectly grammatical. And then various kinds of deviant expressions and they fall into all sorts of different types. That's internal to the study of computational representational systems. Only very recently there's been some work on electrical activity of the brain are called event-related tendrils and which people have pretty surprisingly, but interestingly discovered specific CarLotz to these categories.

So, a particular kind of category of Phoebe and expression yields characteristic, event-related potential specific kind of a brain of electrical activity in the brain. Well, that's kind of interesting, but why is it interesting? Well, it's interesting because the thing, notice the thing we're committed to from a scientific point of view is the categories of expressions given by the computational representational system. Those are the categories that come out of a background. The theoretical explanation, the event-related potentials are just curiosity. I mean, what's interesting about them is that they correlate with what we understand to some extent, and therefore maybe they're interesting. Notice these are two studies. Brain at two different levels. One, it's electrical activity. One, it's computational activity. In the case of the computational activity, we have reasonably well-grounded theories with explanatory character and so on. In the case of the electrical activity, we know nothing, just a lot of noise up there, but now the study of the electrical activity, the brain has made progress because it has found something that correlates with what we understand much better. Namely the computational representational systems. Mommy, if these correlations are extended and placed in a richer theoretical framework, will actually begin to rely on them for some inquiry. That'll tell us something about the computational representational systems, but that's the. Order of priority and grounded-ness from the point of view of the natural sciences or usual interpret. I'm stressed that because the usual interpretation again, is the opposite of mistakenly. Of course, in this naturalistic approach, we would never ask such utterly pointless questions is whether airplanes fly or whether computers think or whether algorithms see triangles or whatever. Now, what are the real empirical questions and the reasonable research programs? Well, I think they're the ones sketched earlier. It seems to me, if we want to learn something about humans or pigeons or whatever, we should begin by considering something that they do well and we should try to figure out how they do what they do well. We postulate some particular faculty of the mind, meaning the brain at a relevant level of abstraction.

AUDIO 11:

Because often what you would see is when they discuss the gold standard, they'll put the gold standard under fixed exchange rates. So the gold standard would be one example, fixed exchange rates, and that would be right alongside things like Fiat currencies created by a world bank where there would be a Fiat currency in, in the view of canes, and some of the, the later Keynesians, which would be issued by a world bank. And then individual currencies will be tied to that world currency by fixed exchange rates. So the golf thin was there, and then on the other side was fluctuating exchange rates. And those were were rates or a system in which different national currencies fluctuated in value against one another. Of course, this is not satisfactory.

The key difference is that between a market supplied money or commodity money who supply and demand is anchored in the market and a money whose supply is monopolized. By the political authority, be it through its central bank or, or directly through the, the government. So the best systems from the, from the point of view of, of, of Austrians, if we're, if we were using as our standard satisfaction of consumer wants and, and the ability of entrepreneurs to calculate is the market supply commodity monies. Okay. And then things get progressively worse until we get to a world central bank. So having said that. We know as professor Inglehart has, has told us that all money originated and must have originated logically as commodity money. So all money came onto the market. All general media of exchange as some sort of a commodity. Well, we have the most information about the classical gold standard. How do we know whether, whether something is really a genuine gold standard and not a genuine gold standard? Such as the classical gold standard, and unlike the Bretton woods, false balsa, phony gold standard, the Mark of, of the, of the genuine gold standard is that gold coins are actually in circulation. They're used in everyday circulation. It's not necessarily that, that they're there, be 100% reserves though that is better.

But, but, but almost from the start, when money originated, governance began to interfere. So it was very hard to find a pure commodity money operating in history. So we'll stick with what we know best. We'll stick with sort of a slightly watered down version of a, of a pure commodity money, the classical gold standard, and we'll compare it or actually not really compare. We will compare a little bit at the end. We'll show the step by step process by which the gold standard was deliberately really destroyed by, by governments. I mean, that to me is his big point. The gold standard did not fail. It was deliberately destroyed by governments. So what, what were the main characteristics of, of the gold standard? The monetary unit was defined as the weight of gold. And I'll talk, I'll give you an example of a little bit later on, so that really gold and nothing else was money. Gold was the base money. It was a bank reserve, and it was the currency in circulation. Nothing else. Was was was considered money proper as meta as would use the term. Anything else that's circulated as a, as a medium of exchange was a money substitute. So bank knows in the pockets to the extent that they existed, were instantaneously redeemable into gold, at par or at face value. And they were the money substitutes. So gold coin circulated alongside money substitutes for real, which were really, as we'll see, just claims to gold tell by banks. Finally, it was not necessary under the classical gold standard for a central bank to exist. The US during most of the periods of the classical gold standard did not have a central bank. We were the last industrial economy to set up a central bank. Great Britain established central bank in 1694 or so, mainly until the King could build palaces and fight Wars. So central banks were initially creatures of government as they have remained. Okay. So the monetary

unit was, as I said, simply a await unit of gold. So notice something here. The Frank, the pound, the dollar or homogeneous money or monies, okay? They're not separate monies. They are all gold. Their names just denote a different weight of gold, a different unit in which the people in that nation calculate. But, but the money itself was gold.

AUDIO 12

When it comes to the more bigger macro issues, what we've learned thanks to things, some things I think we suspected, but but I are now much more confirmed is that there are huge differences in priorities perceptions between the the small wealthy minority and the population at large. The I have now seen in the last four days, I think four different articles that used F. Scott Fitzgerald. So yes, the very rich are different from you and me. You see that very clearly on an on a couple of big issues. One of them is is taxes. The polling overwhelmingly says that that people believe that the rich don't pay enough in taxes and the taxes on top incomes and corporations should go up. And yet an enduring piece of the political agenda has been to cut top tax rates. When, when, when Bowles Simpson produced them initial draft PowerPoint, cutting marginal tax rates was right at the top of the agenda. And what was that doing in a document that was allegedly about fiscal responsibility. The social safety net, the public wants to spend more on social security and on health care. But we know from these very difficult to conduct but illuminating surveys, that the the point 1% is wants to cut taxes at the tops, not surprisingly, and wants to cut spending on entitlement programs, diametrically opposed to public opinion at large the web. What you see, of course, is that to a remarkable extent, the policy agenda set in Washington reflects the preferences not of the general public, but of this very small, wealthy minority. And sometimes that has extremely not just just kind of unfair consequences but extremely deleterious consequences for the conduct of of economic policy. So the the case in point that were some of my thing interests come together with all of this is how did we deal with the aftermath of the great financial crisis? For the first few months, we had more or less of a response that was at least in the right direction, fiscal stimulus, monetary easing, then a weird thing happened. Somehow, even though unemployment was still above 9%. Everyone inside the beltway was talking about the great threat posed by budget deficits, and the urgency of entitlement reform. And this was not, I'd like to say it was debate but it didn't even feel like a debate it felt. You can actually document this to a remarkable extent both the political establishment and the and the media simply stated as fact that this was what had to be done. So there was a great article by Ezra Klein at the time about the trouble with Alan Simpson, where he quoted various reporters who would ask, so will President Obama do the right thing? These were not opinion writers. These were supposedly reporters. And the right thing meant cutting social security and medicare. It simply became defined as this was the responsible the right thing to do. The What happened? What happened very clearly was that Oh, I'm sorry, I should say that. And it was also very clear that this was not the right thing. If there was if there was one, I mean, the peculiar thing about the aftermath. Nobody really saw the financial crisis coming except for except for people who saw five other crises coming that didn't happen, right. But once it happened, the we all understood hadn't quite realized

just how much havoc the bursting housing bubble would wreak hadn't realized how much shadow banking restored

AUDIO 13

Now, let’s not to say that it stabilizes prices, we don't want stable prices. We want prices changing continual change in the economy. So the purchasing power of money which is simply the other side of the whole structure prices is to reverse of it or the reciprocal. That's also changing radically. Okay, we want to allow that to change. Roger garrison has used a good analogy and that is full of perspective of we people on earth. The sun is stationary when we're moving around the sun, but yet the sun is obviously moving through the galaxy and so. So gold is like the sun in some sense, it's relatively much more stable than prices of other goods and services of single goods and services. Okay, so let's talk a little about the boom and bust. There could be temporary recessions, and inflationary booms on under the classical gold standard. It was possible because there was fractional reserves for private commercial banks to reduce their reserve ratios, or to multiply an inflow of gold by creating fiduciary media, and to cause an inflation and to cause malinvestments distortion of the interest rate, bad loans and so on, which then would have to be liquidated. So, there was some room for that to happen, and that did happen under the gold standard, but it would eventually end pretty quickly in a recession or a bust, and you'd have all phenomena connected with booms and busts. But what would happen under a gold standard is that you'd have a rapid decline in prices and wages the government never tried to maintain prices and wages up until the Great Depression. So they felt that equilibrium levels, but there were these were minor compared to what occurred after the gold standard was destroyed by governments. Let me say a few words about the balance of payments adjustment mechanism which more or less ensured that number one inflation's that did take place under the classical golf that it could not be too great. And number two, that as people increase the demand for money in one nation because they became more prosperous. Money would automatically be redistributed away from nations that weren't growing as fast to nations that were growing faster. It had a natural distribution mechanism built into it. So let's talk about an increase in the money supply brought about by Fractional Reserve Banks. So they drive the domestic money supply up and of course then the price level rises, the US price rises above world prices because of the kantian effects, the money tended back then to be injected into the domestic economy. The new money that banks created. And then the second effect was Look, if the US price levels above the world price level people aren't gonna buy as many exports from us or exports is going to fall, there'll be an increase in imports from abroad because it's now relatively cheaper to buy things from England and France and so on if they weren't inflating to the same extent as US banks were, then you have a balance of payments deficit. Your imports would suddenly exceed your exports. You'd have to ship gold abroad. The price of the pound for example would rise to the export point, and so pounds would be very expensive and it would be cheaper to ship some of the gold from the US to Great Britain to Germany to your other part trade partners. So you'd have a deficit, and once you had a deficit, the gold would begin to flow out in payment of that deficit to the foreign countries. Both banks gold reserves would then fall. Now, at that point, under the gold standard, gold reserves weren't centralized at the Central Bank, so they couldn't use reserves to move them around and bail out banks. There was no central bank that acted as a so called lender of last resort, or as I like to call a bailout or of last resort. So the bank-- so what this external drain of gold? The external drain was a

drain of gold out of bank reserves too at people came in to turn their dollars in because they wanted to ship the gold abroad to foreign countries. It would also be the threat of an internal drain, as people saw gold falling out of their banks, and they had the money substitutes which they knew were just money substitutes and would give them the ability to redeem for their gold. They rush to the banks.

AUDIO 14

S1 Describing the natural science methods and ways of doing things that are useful, but then obviously a lot of research money is going into these things which are apparently much less useful and isn't quite the point insightful i think is the thing. Now a lot of things are worth doing even though they're not useful because they give you understanding and understanding as a value in itself. Yeah. These things don't even give you an understanding. All they do is maybe fool people or something like that.
S2 So what I'm wondering is there a connection in your opinion, or what do you think of the idea that there might be a connection between the kinds of things that get funded that like real progress in science and the kinds of things that get funded in the economy and politics and so on.
S1 Well, first of all, I don't regard this stuff the science, most of it doesn't seem to be science at all. It seems to me kind of height, or maybe engine maybe sort of badly organized engineering or something like that. But within real science, people make mistakes but I think there are there's a reasonable interaction about what's the right thing to do on sort of a rational basis. You know they're self-advertising and power trips and so on and so forth. But, when you move for a subjects that have more intellectual substance, you move towards more integrity. Not because the people have better genes, but because natures are taskmaster and it doesn't allow you to fake it, so the more we understand, the harder it is fake. So you get more honesty.
S2 Thank you very much. I'd like to close with this comment if somebody makes a computer that can do the sort of analysis that you do, then I'll believe it achieves nothing.
S1 Don't forget you can't design programs that do simple things like talking like a two year old.
S2 I wanted to raise a point with the chess like computer that might be looking at it wrong way to say that a computer plays chess, but it doesn't model human thought makes it useless.
S1 So it would be useless even if it did model human thought, maybe would be interesting but it would be useless if it model human thought.
S2 But isn't it possible if you look at it from a different viewpoint to say, “can we design a machine that can solve a problem within a limited domain that humans had difficulty with,” and in which case the thing of chess playing computers does very well?
S1 There's no point to designing programs in general that will solve problems within limited domains. It’s like an engineering problem. The thing, would it be useful to build a big machine? If you build a big machine that helps you make a bridge or something yeah, that was useful and similar there's no point in constructing a program that will solve some arbitrary problem that you can do, undoubtedly. You can do it in your spare time, if you've taken the first semester of computer science to write a program that will run through some decision procedure for some simple part of mathematics. Once you learn the decision procedure and you learn how to program you can do it. So what?
S2 Okay. Well, my point is that it seems kind of selfish to think that feeling intelligence that we can have or the only way we can solve very complex problems is to use a human brain.

S1 Is it true? Nobody believes that. You know, you want to do weather forecasting or you never use a human brain. You will use all kinds of statistical analysis of weather patterns going way beyond the human brain. You know, you want to solve a picture of problem, you look for the best methods of doing it, but that's because you have a goal, you want to solve that problem for whatever reason. See the reason you try to understand what humans are doing is because you're interested in human beings. If you're interested in human beings, you want to understand what humans are doing. If you're interested in solving a problem, you try to solve that problem. If there was a purpose to playing chess, if there was a purpose to winning chess championships, there's zillions of possible algorithms you make a slightly different game you make a different algorithm, there's no point to it.
S2 I think there is a point.
S1 So what's the point?
S2 The point is that we know if it's doing a good job or not.
S1 We can set up endless numbers of tasks, and we can design machines and do those tasks and we can do it forever. There's no point. Sometimes it may turn out that having tried an arbitrary task, you'll get something of some value, but you got to show them.

AUDIO 15

concentrating on doing things that people don't do well, and they should be concentrating on things people do do well. The things-- The examples that you gave of what people do well were things like walking and talking, and very simple things like this, whereas the examples of things that people don't do well, are things like pole vaulting, and perhaps spending a great deal of money to go to Mars by the year 2000.
Well, going to Mars is certainly not something people do well, but I don't think that answers the question whether we ought to be doing it or not. The question is, "Is there any point in people going to Mars?" Well, you go back and have look at the origins of that program, and I think you get a pretty straight answer to that question. That program originally came out of the failure of the Bay of Pigs invasion. Kennedy needed a political victory to overcome the effect of that, and he decided to set up a big crusade, the Apollo program, we got this fantastic thing, we're going to put a man on the moon. Was there any point to that? Well, it was a big point for the electronics industry, they made a killing out of it. There was a big point for a lot of scientists, you got huge research grants. But there is a question. Did it make sense to put a man on the moon as distinct from a little receptor of some kind? You put a bunch of receptors on the moon, you don't have to worry about an oxygen support system, and precautions for survival, and so on, and so forth. Obviously going to be vastly cheaper, and vastly easier from an engineering point of view. Will you get any less information? In other words, is a man the best instrument to be on the moon? Well, no, scientists will have to answer that, but I'm quite certain the answer is no. That a human being is probably very poor instrument to be on the moon. The choice of human beings on the moon was to have something dramatic, to have something that could get people excited, and distract them from their own problems, and subordinate to the power, and give a shock to the electronics industry, and so on. That was the motive for it, and that doesn’t make any sense. But those seems to be the kind of questions that I want you to ask, not, "Is it the kind of things people do well or badly?" Sometimes kinds of things people do badly are worth doing. Quantum physics is the kind of things that people do badly. That's why there's so few people that can do it well. It's kind of like pole vaulting. Kind of a quirk, some people can do it, most people can't. But that's worth doing.
You put me in mind of a possible modification of Turing's test, which, if you follow cartoons, I'll call the Mark Alan's Body test. I want to ask you what may not be quite a question, but-- well, I guess the question,

or possibly non-question I want to ask is, there obviously is a good bit of research money going into these AI fold. And-- I mean, a lot of people pay good money to make chess-playing programs. It's a funny thing, I was working with a friend of mine's commercial one. And the thing was awfully cowardly. And I found that if I told it to make a move that I thought might work, and that let it keep me from getting killed, then it worked pretty well. But if you just let it work, it took forever to do anything.
Well, I must say on the-- Just give me a minute-- on the question of the chess-playing programs, is it an interesting question at the current moment of science, to figure out how people play chess? The answer to that is probably no. It's not an interesting question of the current phase of our understanding of the mind. But let's assume, for the sake of argument, that it is an interesting question. So, just for the sake of argument. Then we take a look at some program, and we ask, "Does that program tell us anything about the way humans do it?" And the answer to that is flat no. They're designed so as not to tell us anything about the way humans do it. The programs are designed to exploit the capacities of computers, which are different than the capacities of humans, so they have deep search, and fast memory, and that kind of stuff. So we, therefore, throw out the systems instantly, at least on the scientific grounds, because they don't do anything. So they're studying what is probably a dumb question, and they're giving an answer which is totally useless. So what's the point? Well, as far as I can see, the only point is either advertising and getting research grants, or maybe taking the fun out of playing chess. If there's some other point, I don't know what it is

AUDIO 16

I wanted to be a psychoanalyst and that was because I've been reading books by Freud and all the other analysts When I Was An undergraduate night taken a course as an undergraduate from a chest of charismatic teacher who is totally applaud you and I got sort of steeped in all of the the ID the ego and all of that and the medical schools were supposed to do research or hook up with someone to do it for the research and I just couldn't decide so in my freshman. I didn't do anything like that. I took a course in the beginning of the sophomore year in neurophysiology Nathaniel kleitman who is one of the professors that taught neurophysiology gave a talk and talked a little bit about Consciousness and this is not original but I had become very interested in how the mind and when the brain can can interact and how the brain can give rise to the mental and I thought well if here's this man studying sleep and if we can Learn what lose when we fall asleep and what what comes back when we wake up that that should certainly shed some light on how the brain creates a conscious mind. And so I knocked on his door. He open the door. Not not very widely. He was somewhat gris-gris as I got to know him and I don't know why I feel I have to say this now because some people have mentioned that I painted him as a little too abrupt I grew to love him. This is the actual truth.

He I serve greatest it to work with you not really knowing exactly what he did and he said if you read my book and the book was sleeping wakefulness first edition 1939. I was extremely well written and I think I was able to come back to what I've booked was probably impressed him and he's even said you can work with me put me immediately to work helping his only graduate student at the time. It ain't coming to become very interested in nine moves during sleep and There are four years. It had been known that as you fall asleep your eyes can drift slowly back and forth and kind of thought that that might be a good indicator of depth of sleep and he began to study. I motility not saying rapid versus slow, but just I motility or anything in infants and then I think sometimes suggested that maybe you should study older folks and then maybe be good to use brainwave record as well. They're here what they had then. Oh, I wish I had a photograph of it is this

First off Nur electroencephalograms, you look like a roll of adding machine paper one pan, and it didn't work and fortunately for everybody a cardiovascular physiologist named John Perkins who was in the department of physiology had been given a four channel for amplifier grass model 3 vacuum tube, electroencephalogram her polygraph and he would let a zorinsky use it as a room ski discovered.

Our geography now the slimes were very very readily observed both on the polygraph and in the subjects, but what originally were the first rapid eye movement recordings with were thought to be artifact is those vacuum tube amplifiers, you know, you you breathe hard and you get artifact and I would say that the rapid eye movements during sleep were discovered on the polygraph not by looking at the subject and it was quite a while before system is developed. An array of plugging in the electrodes that could tell you that it was an eye movement. Not an artifact and then of course, it was dramatic how rapid the Army was worth. I actually started the velocity later and it was exactly the same or Teensy bit faster than waking saccadic eye movements. Once the dichotomy was, you know discovered then then this differentiation and came about we just had no idea that there were two different types of eye moves from the first very first observations.

AUDIO 17

yes, actually my story starts with somebody from MIT way back. A professor here who went on to win the MacArthur prize and a whole variety of other things, came to me and he said, "Look, I had to stop running the marathon, training for the marathon." : he was one of the early marathoners. Because he hurt his ankle, and then his knee, and he came in and he says, "look, I have adult onset attention deficit disorder," said "I've never had a problem with attention because I've always been running." And that was my-- that's what stimulated me to get more into attention with my patients. And then I came back to the whole idea about exercise and its effect on the brain, and I bring my dog who's a Jack Russel, and when I got this dog, I took him to the vet, and the vet said, "you've got to put him on Ritalin. So my understanding, I think our understanding in neuroscience is that we need to move, we are born movers. So that's one of the key concepts. And meaning if we didn't move, we wouldn't be thinkers. If we weren't the queens and kings of movement, we wouldn't be the kinds of thinkers. Now, if you read the New York Times, you see these warnings all the time, "don't sit, sitting is the new smoking." Okay. And that's a neat phrase that encapsulates it. And everybody's talking about this and studying it. Seeing how much mortality morbidity is increased as we sit. Then we know from studies, that when we stand, our brains are that a little bit better than we are when we're sitting. So that's why as a lecturer, it's very hard to sit and lecture from or even with me. I have to move around, so that keeps me focused. And what it does is because we're using muscles to stand, using the large skeletal muscle, the core muscles all that. It feeds back to the brain, switches the brain on, which feeds forward to the prefrontal cortex which is where we generate our thoughts and this talk and where we learn as well as perform. Now we're getting more and more data, more and more laboratories are picking up on the effect of movement on the brain. It's a watershed event was 1995, coming from worrying about the growing problem down the road with us boomers have Alzheimer's disease and cognitive decline. There was

a big MacArthur study, multi countries looking at what were the things that prevented the onset of cognitive decline and aging. Well there are three, one was optimal weight , two was continuous learning, three was exercise. Now, even when they factored out the effect on the cardiovascular system, the prevention of stroke, exercise was really the most robust prevention for cognitive decline and Alzheimer's disease. So this started a whole series of reports that really was flowering right in the midst of when neuroscience was beginning to really take off. So with everyone's interested in it now because we know that the major factor on our brain, in fact probably the most effective thing that we can do, and now we look at our brain as not a-- we look at it as a muscle. So the more we use it, the better it is, the better it grows. So when we exercise, we're using those nerve cells that we use to think and learn, and all of that

AUDIO 17

you talked about the response to the financial crisis and perhaps not enough deficit spending as a response. My question is our deficit spending and increased taxes on the rich tools that should be used in conjunction; you talk about their applications and their uses together or alone. Okay, let me give you I've been trying to figure out, how should we pay for a progressive agenda, put it that way? How is there's a bunch of things we should be doing, we should be clearly spending quite a lot more, especially on child and children. And we need to be spending on infrastructure. And there's a whole bunch of things in there. We're talking significant amounts of money. And I would say that basically anything that can be reasonably considered to be an investment in the future, it's okay to finance with deficits, real interest costs for the US are very, very low interest rate is below the growth rate of the economy there. You've got people like Olivier Blanchard and Larry Summers saying that, you know, depths of fears have been vastly overblown. I think we're in a situation where we shouldn't be worrying much about deficits. However, that doesn't mean that you can completely blow it away. And so pieces of that program that would require sustained spending, and are really more about social justice than about quite a lot of stuff. That's both investment and social justice. But there's also a fair bit of stuff. That's just social justice. And I would say that you want to pay for the social justice parts by higher taxes on the rich. So that so that the two do go in conjunction, I would say that both some increase in or better targeted deficit spending, because we're doing a lot of deficit spending right now. But it we're running deficits, to pay for stock buybacks, but the, but a combination of deficit spending on investment, and taxing the wealthy to pay for social programs is the way I would go? Well, you talk about the intersection of trade and corporate taxes and tax avoidance, it seems like we are in an endless game of whack a mole with a very inadequate hammer. And I want to understand what the whole what the whole picture needs to look like, if you could design it. Okay. Corporate tax avoidance, profit shifting to tax havens, is a is a is a significant thing, although it's it, it's not 100%. Because if the ability to globalize where profits are reported was Unlimited, then we wouldn't have seen a decline in corporate tax receipts after the Trump tax cut. Right? So obviously, corporate taxes, were collecting a

significant amount of money, despite all of that. But to the extent that it is an issue. Look, it's a it's a handful of small countries where this stuff is being where profits are realized. The, we really are talking, you know, Ireland, Luxembourg, and then the financial industry is the British Virgin Islands, that sort of thing. The major economies have got plenty of leverage to force those tax havens to shut down. If we had a coordinated move on the part of the g7. To say this, this must stop. It would, it would not be at all hard to do it. So you just need an agreement. You need to have progressive governments in enough of the major economies, actually to a large extent, I think basically if, if, if the British and ourselves. I think the Germans and the French would go along, were to say," we're going to have a crackdown on the tax havens." That would do it if we were even starting to move a little bit in that direction. So I it's one of those problems. That is not hard. Technically, it's a political thing. If widespread tax avoidance through international tax havens persists. It's because interest groups within the advanced countries want them to persist. And the moment we decide that that's not going to happen, it will stop happening. It's just it's just an easy problem to solve. With the right leadership

AUDIO 18

and so, we started recording patients and we learned, really from the patients about a lot of things - nocturnal myoclonus. We learned a lot more about obstructive sleep apnea, although it had been discovered in Europe in 1965. So I'd say, one thing people ask me now, with thousands of people practicing sleep medicine and knowing that sleep disorders are maybe the number one health problem on the planet. "How did you do this?" Well, it's just one thing led to another really. Once we're on the trail just follow the trail. When I was in New York City at Mount Sinai Hospital, I saw the first patient with narcolepsy, even though I had been interested and kind of been alert. It was the first time and I decided to do an all-night sleep recording. It was literally in 10 seconds after the recording started I knew I had to find the -- it was a REM sleep at the very onset of sleep. We now know that happens in babies and it happens under certain circumstances but I had never seen that. And so, the rest of that recording that night was known but then then that made me their mainstream to come back the next night and the next night. Wow, this makes a lot of sense because REM sleep has some of the mechanisms that are pathological narcolepsy, namely attacks of motor paralysis that are collectively called cataplexy. REM sleep is a period of motor paralysis. So then I cast about for more narcoleptics. And I learned that Allan Rechtschaffen had started the same thing, and between us we were able to accumulate nine patients. So physicians weren't recognizing it. At any rate that created a tremendous interest and Allan and I were kind of understanding narcolepsy as an abnormal manifestation of REM sleep. And so in a burst of inspiration, I put a tiny little one to add in the San Francisco Chronicle and lo and behold I got about 100 replies. I described the symptoms, didn't name the illness, and I would say about 50 of those replies were absolutely classical narcoleptic patients with cataplexy, hypnagogic hallucinations, sleep paralysis, and of course being tired and sleepy all the time. The story started with realizing

that something as abnormal about REM sleep, and then realizing that the paralysis that occurs during wakefulness can only be the motor inhibitory mechanisms of REM sleep. There's animal research was progressing where some of these things were starting to be understood that the brain site for the initiation of the motor paralysis in the pons, the studies of the pontine giant cells in the areas around the locus coeruleus, and then projections down to the medulla. And then the group in Pisa had done a magnificent study identifying the specific spinal tract that mediated this motor paralysis and then working the cat was beginning to identify the locations and functions of serotonin neurons and adrenergic systems and dopaminergic systems. The first, interestingly, cataplexy this motor inhibition is triggered by sort of eruptive emotion. Well, in dogs, it was a pleasure of eating or play in the puppy so we can actually have all seven dogs become paralyzed together, group cataplexy, very dramatic. And then we began to collaborate. The two people here at Stanford, Roland Serenella and Jack Barkus had biochemistry laboratories particularly Jack. And we started working with him and with Roland. And they found there was an abnormally great level of acetylcholine receptors in the pons of the dogs. So we began to be very interested in the acetylcholine system in the dogs

AUDIO 19

yes, actually my story starts with somebody from MIT way back. A professor here who went on to win the MacArthur prize and a whole variety of other things, came to me and he said, "Look, I had to stop running the marathon, training for the marathon." : he was one of the early marathoners. Because he hurt his ankle, and then his knee, and he came in and he says, "look, I have adult onset attention deficit disorder," said "I've never had a problem with attention because I've always been running." And that was my-- that's what stimulated me to get more into attention with my patients. And then I came back to the whole idea about exercise and its effect on the brain, and I bring my dog who's a Jack Russel, and when I got this dog, I took him to the vet, and the vet said, "you've got to put him on Ritalin. So my understanding, I think our understanding in neuroscience is that we need to move, we are born movers. So that's one of the key concepts. And meaning if we didn't move, we wouldn't be thinkers. If we weren't the queens and kings of movement, we wouldn't be the kinds of thinkers. Now, if you read the New York Times, you see these warnings all the time, "don't sit, sitting is the new smoking." Okay. And that's a neat phrase that encapsulates it. And everybody's talking about this and studying it. Seeing how much mortality morbidity is increased as we sit. Then we know from studies, that when we stand, our brains are that a little bit better than we are when we're sitting. So that's why as a lecturer, it's very hard to sit and lecture from or even with me. I have to move around, so that keeps me focused. And what it does is because we're using muscles to stand, using the large skeletal muscle, the core muscles all that. It feeds back to the brain, switches the brain on, which feeds forward to the prefrontal cortex which is where we generate our thoughts and this talk and where we learn as well as perform. Now we're getting more and more data, more and more laboratories are picking up on the effect of movement on the

brain. It's a watershed event was 1995, coming from worrying about the growing problem down the road with us boomers have Alzheimer's disease and cognitive decline. There was a big MacArthur study, multi countries looking at what were the things that prevented the onset of cognitive decline and aging. Well there are three, one was optimal weight , two was continuous learning, three was exercise. Now, even when they factored out the effect on the cardiovascular system, the prevention of stroke, exercise was really the most robust prevention for cognitive decline and Alzheimer's disease. So this started a whole series of reports that really was flowering right in the midst of when neuroscience was beginning to really take off. So with everyone's interested in it now because we know that the major factor on our brain, in fact probably the most effective thing that we can do, and now we look at our brain as not a-- we look at it as a muscle. So the more we use it, the better it is, the better it grows. So when we exercise, we're using those nerve cells that we use to think and learn, and all of that

AUDIO 20

the concept of REM sleep and the concept of the duality of sleep didn't happen overnight. And one of the, sort of abbreviations, and it does annoy me a tiny bit is that people are constantly saying REM sleep was discovered in 1953. While the rapid eye instance sleep were discovered in 1952, on the Grass Model 3 4 channel polygraph. The notion of the duality of sleep and two entirely separate states took a, I would say, three, four or five years to develop. And by that time Jouvet had come into the picture. And we finally, as we studied more and more of the physiology and the architecture of all night sleep, realized that these two states are the-- when rapid elements are present and when rapid elements were not present were very, very different to the point where you say these are two independent states. I'm not sure he ever embraced that notion. Sleep is one thing, it changes in depth and in order to sort of encompass what we were finding and the brainwave patterns. In particular, in humans, we called it descending stage one, which is the stage one at the onset of sleep, very light, and then ascending stage one, which accompanied the rapid eye movements. And I think the first thing that really convinced me they were different is that in descending stage one subjects were falling asleep, it's just a teensy little bit above the auditory arousal threshold and the subject would wake up. Whereas in REM periods, it took 10 to 20 times more intense stimulus to awaken somebody. I was also working at the time with a young professor of physiology, and he was doing studies of thalamic lesions in cats, and he was interested in what happened to the brainwave patterns. And they was starting to study cats, Horace Magoun. And there was a lot of excitement about the particular activating system. In fact, that was, I think that was the first big bombshell in neuroscience that I was personally aware of, but it said that an activated EEG using mainly cats, very low voltage, very fast. EEG patterns were associated with consciousness, in so far as cats were conscious, and wakefulness. And that when the EEG slowed that would be unconsciousness and sleep. And so when he asked me to study cats, and see if they had sleep spindles and were there changes as a

result of lesions, I realized that the cat could sleep and the EEG patterns absolutely was wide awake as you could possibly be. I actually had a cat asleep on a table and there's no question the cat was asleep. On the table next the polygraph, we could see the polygraph record coming out and the cat lying there sound asleep and the brainwaves look like the cat was wide awake. Now we know all about this, we've seen the same thing in dogs and rats and primates. This was the first time that I had been involved with attempts to implant electrodes in the skull of a cat. And the we of course insulated the electrodes, but I don't think we used skull caps. But at any rate, they always failed. And I couldn't see anything when the cat was awake because the temporal muscles generated EMG potentials that just camouflaged and overwhelmed everything else. But when this is a [Rapid Eye M] period, the EMG completely disappeared and you'd had this beautiful brainwave recording. So that's where I got the first intimation that something happens to the motor system during REM sleep. it's very, very dramatic

AUDIO 21

each of which is assigned and entered an interpretation at the interfaces with other internal systems. One is the sensory motor system, it can be externalized in some form, another is roughly speaking, semantic pragmatic system. We now know that sound is only one mode of sensory motor externalization and that is nothing special about it. Well, the fact that the sound meaning correlation is in principle unbounded, has very rarely been recognized in the long and rich history of the study of language. Darwin was one: he wrote that, "man differs from animals solely in his almost infinitely larger power of associating the most diversified sounds and ideas." The phrase almost infinite is a traditional phrase that is understood ambiguously as meaning very large or infinite. The unbounded character of the association is the basis for what Galileo called the marvelous invention of the alphabet, which in his words, "provides the means to construct from 25 or 30 sounds. That infinity of expressions that enable us to reveal everything that we think and all the movements of our soul, recognition of the unbounded character of the language and the much deeper concern for the creative character of its normal use. And that was soon to become a core feature of the Cartesian Science: what we call philosophy. A century ago, a prominent linguist Otto Jespersen erased the question, "how the elements of language come into existence in the mind of the speaker on the basis of obviously finite experience." That's the problem of acquisition. And that process yields somehow a notion of structure in the mind of the speaker, that is definite enough to guide him in framing sentences of his own. Crucially free expressions that are typically new to speaker and hear over an unbounded range, and it would therefore follow that the task of the science of language is to discover this notion of structure and how it arises in the mind. And to go beyond that, to unearth what Jespersen calls, "the great principles underlying the grammars of all languages." And by so doing, to gain a deeper insight into the innermost nature of human language and of human thought. These are ideas that sound much less strange today than they did during the [structural?] behavioral science era that came to dominate most of the

field. That marginalized Jespersen's' insights while reformulating Jespersen's program. The basic task is to investigate the true nature of the interfaces, sensory motor, semantic, pragmatic, and the generative procedures that relate them and determine how they arise in the mind of the speaker and how they're used. The focus of concern should naturally be free expressions, the creative character of the mind, along with further questions about neural representation

AUDIO 22

at some point I summarized all of the studies that have been done until that point and most of them were running at 80% dream recall from REM sleep, 5 to 10 percent of dream recall from non REM sleep. And in my opinion, the results of tremendous difference in the description of the content that often the dream recalls from non REM sleep would be very abbreviated, very static, containing very little imagery whereas the recall from REM sleep is a huge, long, vivid, real world type story. Now frankly, in today, in the year 2004, I don't quite know what to make of all the controversy. I cannot imagine that the physiological differences between non REM sleep and REM sleep don't account for something. The fact that our motor output is inhibited in this very very powerful and orderly fashion and why? So we can elaborate all of the motor output that's going on in the dream world without jumping out of bed and there is an illness where that system fails and you do jump out of bed when you dream. If I were young, I might just go over all that ground again with some new techniques and whatnot to convince myself, " what is the difference if any between non REM sleep and REM sleep. And I think one would show there are differences. Now the usual interpretation of these differences today is that number one, they're mainly quantitative. And in cats and in other animals, there are spontaneous bursts of activity generated in the brain stem that flow to the rest of the brain that start to build up in non REM sleep. And I would say Hobson Mccarley and perhaps others think, "okay, there's kind of a stimulation in non REM sleep that allows some elaboration of dream imagery, and if it could be shown that this imagery gets more and more intense as you approach the onset of the REM period, I mean that would be a nice way to look at it. But I did an awful lot of that work and as far as I was concerned, the recall from non REM sleep is kind of perfunctory and once in a while someone would come out and I have to say, "yeah, I guess I was biased because I would say, "okay this person is prevaricating or confabulating. But those were the exceptions for me and I think early on, we thought that it was a definition that the exponent of non REM dreaming from the Red Chevron Laboratory was a scientist by the name David [Fox?] and some of his early work, if you said, "oh yeah," so it was one word, I think I was thinking about a plate and saucer. Okay that's a dream. And then there was some work looking at the definition and I would say that it showed differences but I want to believe, I don't know why, REM sleep is dreaming sleep. Is non REM sleep also dreaming sleep? I think that question is not an absolute fact, nobody's really out there taking care of patients who have sleep problems and although there have been some clinical studies from the research point of view, few: Dr. Anthony Calles and UCLA, nobody

had ever offered a service. So in the summer of 1970, with great fanfare, we had a press conference: one reporter showed up. We opened the world's first sleep disorders clinic for the diagnosis and treatment of sleep disorders. And we hardly knew what we were doing, but you learn very quickly because we had the all night test. And that was tough because the people who licensed medical practice in the state Sacramento couldn't understand that you'd have a clinic that was open at night. It's either you have a clinic or you have a hospital, but there's nothing in between

AUDIO 23

and the data is there and they came to that conclusion. The head of the CDC said that exercise is the best medicine for most everything. The cancer people now are using exercise as a treatment for improving our killer cells and proving the effects of medicines. And I started zeroed in on this topic back when I heard about this school in Naperville, Illinois and interviewed the real revolutionary physical educator who had changed the PE program in Naperville to a fitness based one that had been the traditional PE but he felt that the kids were still not fit. They were still overweight, getting depressed, all the things that he wanted to change in effect. so he made a big switch and change in the physical education program. And he got all the kids moving, everyone started to move. They threw the balls out. So they did running games, they did calisthenics and a couple of years into it, he realized he was still giving the athletes the best grades, So he said, "uh huh, wearable measurement." So he was the first one to use heart rate monitors in gym class, and the average then was 33% of all kids being overweight, now it's 37%. So something was happening and this was a big part of it: was this daily fitness based exercise. So not only were they fit, these kids were with it and smart. Now we had known about the power of exercise in my field in Psychiatry for a long time. [Approcates?] wrote about it. However, it was never science, it was never proven. And then Duke University Medical School was very interested in exercise as a treatment for cardiac problems. So they were getting all these post MI and angina patients to exercise on treadmills. And the psychologists were seeing if they could change them from type A to B. What they found was remarkable: that not only were they less aggressive, less anxious, less stressed, but their mood was better. They were less depressed . So they began then a love affair with exercise and depression, anxiety, aggression in the Department of Psychology and they were falling right along and then did a whole series of studies throughout the 80s and 90s. And we've known this. We know that it has an effect on anxiety and stress, that the more fit you are, the more stress it takes to get you stressed. To turn on that sympathetic nervous system and then the fight or flight syndrome. And now we are learning why. That we also have an effect in the hippocampus, which is the big center for our work and exercise. The hippocampus is the memory center for the brain as sort of Grand Central Station. And we've learned that it's also a controller of anxiety and panic. This is where most of the binding sites for cortisol are in a hippocampus. So when we are stressed, we can learn quicker for a while until we burn out, and that's what happens. If you're chronically stressed, you begin to erode nerve

cells. Well, it's also the area of the brain that we have this wonderful process called neurogenesis that occurs. We didn't know that happened before. It was hard for a lot of people to understand it, but we in fact grow new nerve cells all the time: that's what neurogenesis is. And we have stem cells and we grow them into this memory area of the brain every day. And activities such as learning, meditation, enjoying, laughing, being with someone, increase the amount of new stem cells that we change into new nerve cells, but nothing does it like exercise