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PAS LECTURE #10

DIGIT SPAN ✓

The first test that I have to talk about is the digit span, and the varying kinds of performance you get on the digit span type of activity. Theoretically, the digit span task represents a considerable amount of effort for the kind of individual I refer to as an externalizer. He has to work at being able to perform the particular kind of task of being given the digits and respond to them.

The effort in relationship to this is related to distractability somewhere along the line. Anyone who gives the test over a period of time will find that certain kinds of individuals are much more disturbed, distressed, upset or anything else in relationship to this by any kind of distraction that occurs when the digit span test is given.

To give a personal example, I find that when I think of myself as an E individual, I find it very difficult to give the digit span test all the time if I look the person in the eye at the time I'm trying to give him the test. In other words, I have a great deal of difficulty in keeping my mind on the digits themselves and consequently have to regardless of how many times I've given the test, really look right down and read the numbers off, and not look at the individual at the time I'm giving them the test, they will begin to move away because the distractions they get in terms of that, interfere with their ability to respond to the numbers and they are likely to close their eyes for example, when they are listening or moving in any direction in responding on the digit span test. They close their eyes or then to a certain extent an individual with an airplane going over or a phone ring or anything in terms of that is

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likely to break the concentration in a manner which significantly impairs the ability of the individual to repeat the digits.

You also will find then over a period of time in giving the test, that there will be a number of people who will tell you "if I had gotten more sleep last night" or "if I was not feeling bad today" or "if I hadn't been distracted" or various things in terms of this, "I would have done much better on the digit span test". Yet when you look at their score on the digit span test they will have done a very creditable performance in spite of the fact that they claimed they had difficulty with the test.

So the feeling that a person has about the digit span test may be fairly universal in the sense that the individual feels that he can't perform because he's not paying attention on a number of things in relationship to this. But the performance is very oddly not really interfered with in the individual with an IF person or the IA, the internalizer judgement is really remarkable in terms of what the kinds of individuals can ^{do} in spite of distractions, in spite of people walking into the room, or anything, if they move in the direction of doing the digits they can do it with relatively little effort in spite of how they feel. The E individual is very definitely integrated with it.

Now, one of the places that you can get the phenomena of the digit span test and the phenomena of the internalized individual being able to perform on it is very definitely evident in a mental hospital patient where you are likely to run into the obviously schizophrenic individual who is quite a bit out of context in a number of kinds of ways, who is likely to be able to perform almost perfectly on the digit span test with

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what is in effect no effort whatsoever. In other words, he is not even motivated particularly to take the test but he will persevere and respond very, very actively and very aggressively in relationship to doing the digit span type of activity.

Now the important thing to bear in mind in relationship to this is that any healthy individual taking the test anywhere along the line, would be motivated in the direction of doing the digit span type of activity, one of the things that is going to influence or have some effect on how well he performs on this test particularly if he is an externalizer. Because one of the things that the externalizer is going to do over a period of time is because he recognizes that he has a certain amount of difficulty with certain groups that are a learning kind of ability, that he will develop a system. Now, a system is in a sense, a being able to group the numbers when the examiner is giving them to him. You're grouping them in such a way that they make them into more meaningful categories. 1, 2, 3, 4... 1234 is an easier way to remember 1234, 1, 2, 3, 4 than is 1, 2, 3, 4 than in relationship to what the internalizer is almost always if he develops any kind of discipline or any kind of control in handling the task that the digit span calls for, is going to move in the direction of developing some kind of system for remembering the numbers.

The system for remembering the numbers is going to be very effective when the individual is asked to do the digits forward kind of activity. Any system for remembering the numbers that an individual is likely to learn is going to be very effective when you give him the digits forward, but the minute you start giving him the digits backwards, in most every instance, particularly with the externalizer, any system that he has for learning numbers is going to break down, resulting in the phenomenon that

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certain kinds of externalizers are likely to do very well forward and then begin to deteriorate or to move in a situation in which they are not able to do digits backwards very well.

Therefore, in determining the internalizer-externalizer dimension, one of the things that you're always going to look at before you take for granted that the weighted score that you come up with is the accurate prediction of whether the person is an internalizer or an externalizer, is to make very sure that there is not a very definite significant difference between the number of digits that the person does forward as opposed to the number that he does backward.

And in almost every instance, the externalizer regardless of how effectively he manages to discipline himself, the externalizer is always going to be two or three, there are going to be 2 or 3 points difference in digits forward compared to his digits backward. The internalizer on the other hand is likely to be able to perform far more identically forwards and backwards without very much effort and again even when you have a relatively low digit span score you had better make some qualitative judgment whenever that digit span, the forward and backward tends to be exactly the same, theoretically in relationship to this/^{to}a certain extent the internalizer often times can by paying attention and being very eager to try to do the task when you give him a digit span test, that they are likely to be much more hesitant and much more unsure of themselves when you are giving them the digits forward. When you give them the harder task, or what appears to be the harder task, of the digits backward often times the internalizer who's begun to respond at all in relationship to the digit span test actually relaxes. He relaxes because he now is being asked to relate and respond in a different kind of a way resulting in many

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instances that an anxious internalizer will actually do better when given the digits backwards than he would in giving the digits forwards. Because he moves much more into a less controlled, less aware state allowing him to respond, and don't ask me to explain what happens to the individual because I don't have the slightest idea, that makes it possible for the internalizer in a sense to cut off all the distraction in such a way that they can relate and respond only to the rote task of doing the digits forwards and backwards. So always in terms in of this, qualitatively you've got to be careful when the weighted scores are set up on the basis of just adding the two together. Before you take that weighted score at total face value it's always a good idea to go back and look at something in terms of what level the person is performing on digits forwards and backwards to get a little clearer idea of how the individual is responding to the particular task.

The primary thing, or one of the things that seems to be very evident in test performance, is that a person who has a high arithmetic, an individual who does well on the arithmetic subtest, the second which we'll talk about a little later, but whenever an individual has developed whatever the compensation, the discipline or the control that a high or high arithmetic represents in terms of the test, there is bound to be some kind of spillover or some kind of relationship on the basis of which the individual is going to be able to perform a little better on the digit span because he is a high arithmetic individual, and part of what his control or discipline represents in terms of this is the fact that the individual has learned to handle a certain thing like the rote learning task.

A healthy E moving in something of an intellectualizing direction,

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that is that the healthy E who is attempting to develop or exploit or do something about the fact that he is too much of an externalizer, he has to move into some kind of an internalized mode and to be effect in an internalized mode he is likely to do better on the digit span. But again the digit span performance is going to be characterized by the tendency of the effective, intellectualizing E to do much better on digits forwards than he does on digits backwards.

Now, you will get every once in a while in terms of this, and its not at all unusual in relationship to this that there will be a certain kind of an individual who will do quite badly on the digit span and do very well on the arithmetic. Now, let this begin to happen, this is much more of an indication that the individual rather than being able to control or exploit or move into the direction of developing some kind of effective use of their internalized skills to defend against their externalizing skill. The very low digit span performance with a very high arithmetic performance begins to be an indication is much more engaged in primarily defending against being E rather than by utilizing part of their internalized skill. When there is a wide difference between the digit span and the arithmetic this is a less effective adjustment than when there is a relatively small difference. In terms of this, this is an indication of extreme defensive tension. You will find in hospital records every once in a while an extremely low digital span and extremely high arithmetic and a moderate normal level. And you will often find in terms of this a schizoid type of adjustment. Because it means something to me I have generally used the term of this being a pseudo-schizophrenic adjustment. It's a pseudo-schizophrenic adjustment because the individual is definitely defending against responding and relating by moving into

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some kind of an extremely tense defensive kind of adjustment. Therefore, a wide variation between the digit span performance and the arithmetic performance, that is in the sense of a low digit span and a very high arithmetic, the wider apart those two scores are the more likely is there to be defensive characteristics in the individuals adjustment. Now, by defensive characteristics it means that the individual is likely to move in a direction particularly in an emotional sense of moving in a direction of being very protective, very defensive, very hostile to any attempts to make any kind of an involvement with this kind of an individual. So the very low digit span - high arithmetic as well as being the pseudo-schizophrenic type of an adjustment, also can carry with it a tendency on the part of the individual to be very defensive, very hostile, very authoritarian, very autocratic in the matter or the mere method in which he relates and responds to other people in his environment.

gives Below his normal his normal he will continue to try and much more likely to give completely phoney, they are likely to make up ^{numbers} ~~members~~, or at one particular point they are likely to say "I can't do it" in other words they begin to move into the direction in which they don't try to do the numbers at all. Interestingly enough, one of the characteristics of certain kinds of organic difficulties and this is often times picked up at a very relatively subtle level of organic difficulties is that you will get the kind of an individual who seems to be in no particular distress in the sense of giving you the numbers when you are giving them to him but what he gives you back has no relation at all to the numbers that you've given him. He maybe totally unaware of the fact that he is not giving you the numbers correctly and a certain kind of organic, and I tried this with some of the organics in one particular point in time in relationship to

Organics the DSP

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this, is that they will tend to persevere that even though they are missing the numbers, now you remember the test says that you stop when the miss two in a row. Now, the person that doesn't know that he's missed two in a row, if you continue to give them the test they will continue to give them back to you and miss them as long as you want to give them the test. The subtle organic often times is likely to persevere and continue to do the particular kind of a task without any particular awareness of the fact that they are missing. But more often than not the E individual is so sure right at the beginning that he is going to have trouble with this test that if he's a good solid arithmetic in terms of this, the farther the test goes along the more confident he gets because if he's developed a grouping system he begins to depend a great deal on that and you do not get the deterioration in his performance on the test until you give the process of doing the digits backwards and once you begin to give him the digits backwards he starts out because he's self-confident in the beginning he begins to try to _____ numbers and its very difficult because the average E individual who works out any kind of a grouping system finds that thay grouping system just plain and simply doesn't work for him when he tries to do them backwards and consequently he tends to give up rather than... that is the high arithmetic E gains confidence as he gets more and more of them or thinks he's getting more. He loses confidence as you begin to give him the digits backwards. Qaulitatively, in terms of feeling and in terms of feeling states the I individual is less disturbed about the digit span test.

It's really, to me is fascinating in the number of ways in which individuals can respond to this one particular kind of a test. Part of the interesting thing that you can get is giving the digit span test over

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and over to a number of people to get a little bit of a feeling of how this one specific kind of task is handled in so many different ways by the people that are involved in it.

And including many an E individual, I've had them and have shown them the pattern and they begin to really see that here "I didn't do well on that test, what was that test?" "That was the digit span." "I thought I did very well on that test." And the Ec individual is often times going to be surprised because he's going to think he did better than he did.

The I individual is going to be "I thought I did worse on that test." In almost every instance, there is much more of an awareness of faulty vision. Now again you get the Eu individual, the Eu individual being the low arithmetic - low digit span individual, he's going to tell you the first time that he runs into the unpredictable. "I can't do it." He doesn't even try. The Iu individual is likely not to begin to make any particular kind of distress indication until you give him the arithmetic. The Iu individual, the minute that you start giving him the arithmetic subtest they then begin to move into the direction on the basis of which they say "I can't do this kind of thing. I never was any good at arithmetic. I find it extremely hard" and they don't really work very hard at the test.

Olga: I wouldn't say when you see the grouping you can predict these theories in working out some system I wouldn't say you could carry them beyond maybe seven or eight accurately otherwise there would tend to be a big discrepancy in going backwards. It's very unusual to get very high number of digits forward say nine or ten and then have it low backward. It happens occasionally but very rarely. It's usually a peculiar kind of

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a problem, the kind that I haven't really understood but I've gotten weirdo results the few times it's really happened. Also in some organics you get in clinics you can see something peculiar happening. They'll do a series successfully and then the next time around give you it repeating the same numbers that they did successfully the last series and perseverate in that way, if there is a very wide discrepancy in a clinic you never know what to make of it and you have to finally think it's something like that.

Draw?

John G.: It helps to throw away a minute from the test and to talk to him in terms of the more normal behavior than the digit span type of thing. Again I can't prove this, because I haven't ~~festered~~^{tested} it out long enough, but to a certain degree, one of the ways you can get some clues about whether a person is an internalizer or an externalizer, you do not know very much about his arithmetic yet at this particular point but a pretty good indicator of whether an individual is an internalizer or an externalizer is in terms of using something like a telephone number. Now, one of the things in relationship to this, if somebody says to you, or you say to them "I want you to call me up, ok? What's your number?" I say, "My number is 280-1249." Alright now the performance that is begun in terms of this is likely to be the difference between an externalizer and an internalizer is if they will take out their memo pad, if this is the way that they want to keep it in terms of this, and that the internalizer will, I'd say "my number is 280-1249." He'll take it out, he'll write 280-1249, and then he'll say "Is that right?" The externalizer, what he would do in terms of that, he will get his memo pad down, "Now, what was that number?" Because what the externalizer is

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going to have do, "you give me a number, I don't remember it, now I will need to remember it." and he'll take it out and the thing in terms of this is that he will ask you to repeat the number. Now in almost every instance the internalizer is likely to recall the number. "You said it was 280-1249, didn't you?" The thing, the one that I've used a number of times in relationship to this, the capacity of an individual to remember a phone number looked up in the phone book. Again, I have to be very cautious about this, because everybody is likely to feel they can't do this particular type of thing, but the fact that they feel that they can't and the way they handle how they feel that they can't in terms of this is likely to indicate two different things. Now, if you watch, I've done this believe it or not.

As I was curious about it in terms of what happens in these places where the phone books are over here and the phones are over here, on the basis of what happens to the individual who moves looks up a number and goes over here. There are really about, I could characterize four different kinds of behaviors that I've seen actually happen in terms of this. The first behavior and probably the most common, is the individual who looks up the number and then copies the number as he looks in the book, ^{Second?} and writes it down as he's walking to the phone booth, he looks it, he had it he carries it over. The third behavior, the one who looks it up, goes right in and makes the phone call without any particular effort or energy. Then the fourth, which doesn't happen to often, is the one who looks up the number walks in the phone booth, gets in the phone booth, opens the door, comes back and goes and looks up the number again and then writes it down. Essentially the Ec is the individual who writes the number down carefully by reading it in the book, the Ic, the one who writes the number because he's disciplined enough, as he moves to

that, the Iu, the one who has the _____ that he wants to make, he doesn't have any problem remembering it when he goes across to make the call and the Eu, the one who is likely to go into the phone booth and losing the number and having to go back and look it up again.

Now, I'm not saying that this is an absolute foolproof way to tell this, but it seems to fit well enough in terms of the behaviors that you see in terms of the way that people respond to the digit span and the arithmetic tests.

Olga: Do you think that could be related to the one thing that differs on the digit span is people who relate to things rather blatantly and some people you give them, practically step on your last number starting it and others who give it quite a long pause before they start and they get things organized in their minds and every variation in between?

Would the immediate response be "quick before you lose it"?

John: Well, the immediate is much more likely to occur in the arithmetic individual, immediate response in the sense that the person when you're giving them the digit span task, he feels perfectly confident in the way in which he does it. You get even in the high arithmetic. I individual sometimes a tendency in terms of this, of the business of being able to go right across, immediately begin to react. The difference between an Ic individual on the test and the Ec individual on the test, or one of the differences between an Ic and an Ec on his test performance is the Ic individual is likely to start out with a considerable amount of need to make sure that he's disciplined in terms of whatever it is that he's doing. Now, if he begins to find out for sure what it is that you want him to do he relaxes. In other words the Ic individual may be very *relaxed at the beginning of the test because he's paying attention and*

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he moves into the direction of being relaxed as you move along because the task you're requiring him to do does not require the marshalling of all the energy that he's had in the beginning. In the Ec individual, ~~the individual is~~ hesitation is likely and the intensity in the high arithmetic the intensity is likely to increase as you begin to move down the digit span because of the fact that he's having to work harder and harder as you add more and more numbers on it. It is a harder task for him to do.

I still am absolutely flabbergasted at the extent and the basis of the difference in terms of behavior that one can get by as simple a thing as the digit span test. The first thing that you look for is the relation of digits forwards and backwards. The closer digits forwards and backwards are together the more likely is the individual an internalizer. The more there is a difference between them, the more likely is the individual an externalizer. The more likely in terms of this, and again this begins to sound complicated but like everything else it is complicated. You get rarely an individual who to a certain extent, who is a low arithmetic individual who does quite well on forwards and goes to pieces backwards. Now in spite of the fact that I said when there is a long preliminary delay, a marked difference between digits forwards and backwards, the person is more likely an E, this is true only if there is a high arithmetic.

If there is a low arithmetic and this difference occurs, you are more likely dealing with an individual is a more (well, what the heck I started, I guess I'll have to use the word) an incipient schizophrenic. The thing that I'm saying in terms of this, is that the minute you ask him to do the internalized backwards test, the individual sort of loses control of himself because its a very threatening thing in terms of it.

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So consequently a low arithmetic with a marked difference between digits forwards and backwards is a much worse sign, than is a high arithmetic with digits backwards being different than digits forwards.

Olga: It is really quite unusual that you will get a low arithmetic individual in which there will be a marked difference in these digits forwards and backwards. But if it does, it's highly significant in terms of the test performance.

In fact in the way that any of these tests are set up, and they call them power tests in the sense that they are simple items and they get harder as you go up. And the reason is the test of intelligence is because the more intelligent who are able to get the higher power items. And on digit span it's this way too. The only thing in terms of this, is that in the end you complete the information on the so-called validity of the digit span test, this is the one that many of the studies will indicate that this not a very valid measure of intellectual ability. That's only true because the externalizer under achieves on the test, and he under achieves on the test because this is a threatening test, a test that is difficult for him to do. The internalizer, on the other hand is likely to achieve as expected. Everyone can't do all of the digits forward or all of the digits backwards unless they have a high level of intelligence and the internalizer is the one who is likely to be nearest his intelligence level on the test. As a matter of fact, one of the things you can demonstrate on the digit span test and this is why the digit span is only a useful test for this when get it in an interpersonal way, because the interpersonal aspect of the test, the fact that there is somebody giving this to you and you're having to do it out loud, it has more influence on the externalizer than it does on the internalizer. You can give an

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externalizer the digit span test over and over and over again, until such time as he can perform on the digit span to the level of his intelligence. Give him enough tries and he'll be able to do as well as would be expected from his general normal level. Rarely is he going to be able to do much above his normal level.

But the internalizer, it's relatively rare for him to go above his normal level.

As a matter of fact, a characteristic of a schizophrenic illness often times, is that the individual is likely to be markedly over-achieving on the digit span test for whatever happens he does much better than would be expected because of his normal level because of a certain kind of a focus or a certain kind of a way that he responds to it. But most people, like the internalizer who is going to be able to do digits forwards and backwards at the level of his general expectation. An E individual is going to fall below that. Give him enough chance and he will be able to bring it up. This is what test-retest reliability is often times very difficult in terms of this because it is perfectly possible for me to give you the digit span now and after I've given it to you say "alright, you go out and rest a couple of minutes and we'll try it again." And if you're healthy, when I bring it in and try it again you are likely to be able to improve because you now have had the chance to work the psychological interaction that had interfered with your performance on that test in the first place. And even in terms of this, and I've done this, when the internalizer who said "I didn't do well on that test let me try it again." You try it again and he says "See, I did it much better." You show him it turns up, he really has done no better the second than he did the first time. He just felt a little bit better about it.

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Olga: Some people fall under the anxiety especially anxiety which is supposed to be affected by, according to many people, your anxiety state at the time that you take it.

John: Alright, there is anxiety this is true, And to a certain extent the E individual, the test is definitely affected. This is a very important point, and it's one of the hardest things to get across. A healthy I individual, in many instances is healthier if to a certain extent his anxiety interferes a little bit with his ability to do the digit span test. You'll hear me when I interpret this test, "this is an anxious I." An anxious I, this only means that the digit span is beginning to fall down a little bit from the normal level. It's not way on up and above it. But this is an indication that individual is very aware of the need to be aware. Now that is a very healthy thing to do. And if he loses awareness, and this is thing that I say I can not understand at all the internalizer losing awareness actually does better performing the digit span test than otherwise. Because, what it amounts to, he focuses in a certain kind of a way on a basis which does not give him the capacity to respond in as wide a way as he can. And consequently, if you have a very high digit span test and a very low arithmetic test this is very definitely a schizoid-schizophrenic indication. If you _____ a lowish but still an I digit span and a lowish arithmetic this is an Iu adjustment, but it is a healthy Iu adjustment. It's healthy because the individual is aware of the need to be actively engaged in responding and relating. So the anxiety in an I causing the test to come down is healthy. Extreme anxiety in the E which was likely to move it way on down is likely to be much more disabling and distressing. And consequently the very low digit span with a very high arithmetic this is an individual who is engaged in

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tremendous tension to avoid over reacting. And you get in the extreme, a catatonic state because, again a pseudo schizophrenic, the individual is intensely engaged in making sure they do not respond because if they respond, their response is likely to get out of control.

Olga: You're likely to get higher trait anxiety - well trait vs. state anxiety, that means that when the I is already in an anxious state as compared to a lower trait, possibly he already has a higher state anxiety.