Modeling the Autistic Spectrum

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The map is not the territory; but what patterns lie behind autistic and hyper empathic people's mental maps? Will modeling that with the aid of the NLP distinctions shed light on what it takes to navigate both ends of the autistic universe?

Introduction

The concept, *the model of the world,* is the foundation of contemporary cognitive psychology, as it is in *neuro-linguistic programming* (NLP) since the 1970s. Someone's *model of the world* is essential for navigating nature, society and time – in short, for survival. One's *model of the world* is partly learned from others and partly constructed from an individuals' own unique stance, and it is hard to argue that – although we all live in the same universe–, everyone's model must be somewhat different. Somewhat…? You're kidding! At times, peoples *models* seem sheer incompatible, like in the case of hyper empathy versus austism.

Beside the idiosyncrasies that originate from personal beliefs and values, many NLP-ers consider different world views, as mainly caused by peoples unique collections of *meta-progr*ams. Someone's *meta-programs* are regarded as a set of filters in the mind of that person, that continuously modify their perception and cognition. As if they consistently filter out and amplify different parts of the stimulus spectrum, and by doing so, create their own caricature of reality.

Autistic people are ascribed the meta programs: sorting by self (first perceptual position), internally referenced, sorting by information and thing, specific- small chunking, control within self, maintenance, mismatching, leading, preferring to work alone and think procedural. The meta programs of hyper emphatics on the other hand are: sorting by other (second perceptual position) and we, externally referenced, control by others, sorting by people, global- large chunking, matching, following, preferring to work together and think impulsive.

Although these two lists profile both extremes of the spectrum, it would be a mistake to see them as the autistic- or hyper empathic mental software itself. Because we need to remember, that meta programs are manmade categories. They cannot be found inside a brain. And since they are part of the perceiver and not the perceived, they cannot be changed in our clients, and also, in themselves they explain nothing; they are just useful filters in the observer, that may make the differences between autistic and hyper empathic people very clear.

The differences in models of the world between typical people (the regular majority) and autistic people (0.5%?) have lead to many hypothesis about their origin. However, before we can go into this subject matter, we first of all need to distinguish between people with signs of autism with low intelligence and neural deficits (retardation, lesions, anatomical and/or hormonal aberrations) and those with standard- or high IQ's with a fully intact nervous systems. The first category is not the subject matter of this article; brain deficiencies results in many types of handicap, also in impaired social cognition and behavior. But our focus is on the latter category, that is labeled *high functioning autism* (HFA) or *Asperger syndrome* (AS) after the Austrian pediatric, Hans Asperger, who in 1944 described this type of people as a diagnostic class of its own. HFA is used for people who had a late speech development; in the AS category, speech came in time. For both types, the lack of *demonstrated empathy* is regarded to be the central characteristic.

Modeling a diverse population

Modeling means analyzing the surface and the deep structure of the example's subjective experience. When we model a spectrum, we necessarily have to model a population of individuals (population modeling). In this article the exempts were therapy clients, colleagues, acquaintances, friends and partners of the author, collected over the course of a life time. And I invite the reader to continue this research with their own examples.

Here the modeling starts with the beliefs and values that have initiated the discrimination of the autistic-hyper empathic spectrum in the first place. Why and to whom is this relevant? And what view on mankind drives research,

diagnostics and care? Why is Asperger autism recognized as a major problem and does near to no one care about hyper empathic people?

Modeling contextual beliefs and attitudes

Who calculated the Mayan calendar, measured Stone Henghe and designed the pyramids of Egypt? Aliens? No, people who by our current standards would be diagnose in the DSM autism spectrum (ASD) as suffering from a disorder. What seems to be typical for this disorder is, that these 'patients' don't waiste their time, memory storage capacity and energy on social fuzz. In contrast to most social animals, like wild dogs, chimps, gorilla's and sheep, who put lots of energy in relationships. So, Aspergers prove, that one can accomplish great feats without such spoils. Throughout history, people with signs of Asperger syndrome (AS) ruled in high places and brought cultures to bloom. They thank this role to their outstanding concentration skills, great knowledge, eye for detail, planning abilities and also their argumentation, logic and math talents, in combination with their habit of remaining unaffected by other people's opinions, emotions and authority. Many Aspergers believe they are the best, and quite often, they are also right about that.

However, the female partners of Aspergers do appreciate to join support groups. Because they feel misunderstood by their spouses; they need to withstand their sharp rhetoric, their general mistrust and incomprehensible rage, tempers and panic for nothing. A logical question: Why did they choose them in the first place? Mainly because Asperger males have a strong aura of masculinity, and find a special breed of women attracted to them. Foremost, they say, because they act self-assured, rational, reliable, proactive, calculated and stay with themselves at all times. Women may also be charmed by their somewhat nerdy clumsiness. However, a minority of Aspergers are prototypical leaders, alpha males, that can take decisions no matter what others think. The less common female Aspergers (25%) may possess extraordinary abilities too, often combined with a perfect appearance. However, to most males they prove difficult mates. 'She can look at me, as if I were a total stranger.' However, people with a high social status (the gifted nerds and geniuses), with whom all others emphasize, they themselves, often find little need to be empathic in return. That means that Aspergers may live relatively ignorant of having any

problem at all. They may be happy and successful soloists. But harassment, discrimination, mobbing, broken relationships and depression may bring some high functioning autistic clients to a therapist. Others are send by their superiors to a training or a therapist, to improve their communication skills.

Very emphatic people, on the other hand, are only noticed as such when they show up in the therapists' practice. Most people love these sweethearts, who seem specialized in love, shame and quilt. They are masters of self critic, but need help to see that they are dominated, exploited, drained and disrespected. *Burned out* is a common symptom. They complain about to much confidence in others, and work too hard for people they admire. Who on the other hand often cheat on them, disrespect, overlook and divorce them. Often they talk about a lack of self confidence; and that they are not assertive enough to reach their goals of being seen, appreciated and respected for their affords; they say to be frustrated and disappointed. They may have a large social network of family and friends that they feel compelled to take care off. They are very cooperative clients, that fear to do or say something wrong. They may think they do not deserve therapy or believe to be too hard a case for the therapist and self accuse for that.

Researching diseases

Baron-Cohen, who is together with Uta Frith, one of the most prominent researchers of Asperger syndrome, found different brain activity between typical and autistic people; these were observed with brain scans in the *orbitofrontal cortex*, the *amygdala*, the ventromedial prefrontal cortex and the right *temporoparietal junction*. But are these findings a sign of brain dysfunction, or just a picture of autistic thinking patterns in healthy brains?

Over the last decade, empathy was strongly linked to the functioning of the so called *mirror neurons* (Iacoboni & Dapretto, 2006). The mirror neurons in autists seemed to be less active. The biological function of these neurons is, that they help a person (and animal) to internally mimic what they see others do, and these cells seem incredibly important for social learning. Does their weak performance cause Asperger?

Mimicking what you see others do, does not necessarily imply that you know what these others feel, believe or desire. However, the copying of

emotional behavior may run over the mirror neurons. And that emotional expression is influenced by social learning is proven by the cultural differences in how emotions are shown (compare Japan with Brazil). Yet has to be proven that the *mirror neurons* of autists are dysfunctional; they may just show less activity, because the autistic person is little attentive of what others do.

In this respect it is important to know that the sons of autistic engineers, have a higher chance of being autistic too. But is their interest in machines genetic or learned by imitating daddy? When their engineers behavior is imitated, it is maybe learned by social learning. Would that mean that autistic behavior can be transmitted over intact *mirror neurons*?

A proven link between a high level of *testosterone* (male hormone) in the fetus and the incidence of Asperger syndrome later in life, seems to point at genetic origins. Okay, Asperger austism is mainly masculine, and this maybe also true at a hormonal level. But is it genetic? Femininity is also genetic but a sensible person will not call it a disease. Although many combinations of genes are 'suspect', micro biologist did not yet identify the responsible Asperger-genes. And for most modern psychologists such genetic explanations wouldn't be enough. Those who believe in the interaction between genes, learning and the environment, want to understand how a certain predisposition becomes translated into a certain *model of the world*, that feeds a particular behavior. When we find some related genes, we will also find the examples of individuals who possess these genes but are not autistic; and if we identify non-autistic individuals with autistic genes, comes the question: how did these learn how to empathize?

A diagnosis of what?

As soon as a medic calls something a syndrome, the question arises: how to reliably diagnose it? Doctors need clear measures to discriminate disease A from the disease B. And after a syndrome is named, the search for its determining criteria and its cause strongly interact – the search for the cause needs to be based on a reliable diagnosis.

The criteria used to diagnosis Asperger, are remarkably univocal. But does this mean that this 'disease' is real, like *small pocks* or *high blood pressure* are? A Latin name like autism (=self-ism) immediately suggests the existence of a disease. But is there a common cause behind the list of characteristics of AS and HFA, that makes it an factual disorder?

Asperger syndrome is defined in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) as a pervasive developmental disorder that is distinguished by a pattern of symptoms rather than a single symptom. It is characterized by impairment in social interaction, by stereotyped and restricted patterns of behavior, activities and interests, and by no clinically significant delay in cognitive development or general delay in language. Impairments must be significant, and must affect important areas of function, and the diagnosis is excluded if criteria are also met for autism. Intense preoccupation with a narrow subject, one-sided verbosity, restricted prosody, and physical clumsiness are typical of the condition, but are not required for diagnosis.

The World Health Organization ICD-10 criteria are almost identical to DSM-IV: ICD-10 adds the statement that motor clumsiness is usual (although not necessarily a diagnostic feature); ICD-10 adds the statement that isolated special skills, often related to abnormal preoccupations, are common but are not required for diagnosis; and the DSM-IV requirement for clinically significant impairment in social, occupational, or other important areas of functioning is not included in ICD-10.

Diagnosis of Asperger syndrome can be tricky as there is a lack of a standardized diagnostic screening for the disorder. According to the National Institute of Neurological Disorders and Stroke, physicians look for the presence of a primary group of behaviors to make a diagnosis such as abnormal eye contact, aloofness, failure to respond when called by name, failure to use gestures to point or show, lack of interactive play with others, and a lack of interest in peers.

In 2006, Asperger syndrome was the fastest growing psychiatric diagnosis in Silicon valley. And also in Holland, Asperger is more prevalent around the centers of the high-tech industry. Does that mean that computers attract these people, or do they produce them? An official diagnosis in the autistic spectrum is mainly reserved for school going children; an adult may be called eccentric, egocentric, weird, a nerd, stubborn or not sociable, but this is seldom a reason to see a doctor. Aspergers in high places can be hated and feared for by their colleagues, without they themselves noticing it. Only an acute crisis, severe depression, broken up relationship or violence, may bring someone to a psychiatrist that may conclude: “You are autistic. Now you know why your life is as it is. Make the best of it.”

Early causes?

Beside ideas about pure neurological roots; like lacking neurotransmitters or dysfunctional brain tissue, most believe that Asperger is an developmental disorder. That is why research focuses on what goes wrong in early childhood. Some developmental psychologist believe that the empathic impoverishment starts with a lack of understanding of one’s own emotions. And some point at an omission in emotional feedback during the first months of life. When parents respond too little to the moods of the baby; and provide their child with too limited feedback about what going on inside of it. For most

psychologists, it is easy to believe, that familiarity with one's own emotionality, helps understanding the feelings of others. It might be a logical truth, that if you do not know what is going on inside yourself, it also will be hard to perceive emotional signals in others. But does that cause low empathy in later life?

Other developmental psychologist (Colombi C, Liebal K, Tomasello M, Young G, Warneken F, Rogers SJ. "Examining correlates of cooperation in autism: Imitation, joint attention, and understanding intentions." Autism. 2009 Mar;13(2):143-63.)) point at a lack of *joint attention*: what happens when a child plays together with a parent with the same toy. The *joint attention* creates the experience that what is going on inside oneself is also present in the other with whom you attend to the same object. Like reading and looking in a picture book. So the hypothesis is, that when parents forget to play with their children, they may later fall short in understanding what's going on in other minds.

Other scientist see *insecure attachment* as a cause of autism (Jeanne Segal, Ph.D. *and Jaelline Jaffe, Ph.D. Last updated: January 2012*. Attachment and Adult Relationships: How the Attachment Bond Shapes Adult Relationships.) Insecure bonding comes when the parents are instable, unpredictable and unreliable to the child. This will cause it to avoid connecting on an emotional level. It will be confused about its parent's emotions and will not learn to notice what is going on in them.

Theories about parental failure as the cause of autism, declare the parents guilty of a neglect that they can never make up for. It is logical that parents may prefer genetic explanations, especially when they can point at the genes of one of their spouses' parents.

Immediately we must ask ourselves, whether too much emotional feedback, joint attention and secure bonding will create the child to become hyper empathic? However, from clinical cases, it does not appear to be an overdose of the above. When they complain about their parents, hyper emphatics tell tales of very insecure family situations, in which empathy was necessary to avoid danger. Also a low self esteem seems to help to become hyper empathic.

In 1989 *Autism: Explaining the enigma*, Uta Frith's compendium of two decades of work on cognitive bases of this disorder, appeared. She made a

strong case for autism as a neurobiological disorder and presented compelling evidence for *Theory of Mind* as a core area of deficit, but she also drew attention to a new idea concerning *Weak Central Coherence* as another aspect of the autistic mind. Frith's *central coherence theory* of autism focuses on the difference in the formation of abstraction in the background cognition. The Belgian Peter Vermeulen (2007) proposed an elaborated version of this hypothesis. He states that autism results from what he called *context blindness*. The context is the broader unconscious understanding of relationships around what is paid attention to. When we describe the *scope of attention theory* later in this article, we will share Vermeulen's view to a large extend.

What does an autistic diagnosis mean?

Whatever it's origin or cause is, how bad is autism? Is one dangerous to society? Some infamous Aspergers surely were, but it is not at all a characteristic. And what is the prognosis? Luckily, the prognosis is not always so dark: Autistic difficulties seem to fade with age; because people seem to compensate for their weak social intuition. However, some people receive an allowance based on their Asperger *disability*. To them the diagnosis means income.

Since most psychiatrists learn that autism is incurable; a diagnosis can in their eyes, at best help the 'patient' (or his parents) to understand themselves (their child) and their peculiarities better (in medical terms). But for the appointed patient, to see oneself as a hopeless case is not a great help in life. Joining an autistic support group, maybe more so; but this does not appeal to typical loners. Getting some detailed insights in autism relevant issues may brighten their future to a far greater extend. Literature and self test can do a lot of good.

However, one particular part of insight is hard to grasp for those who do not empathize so well: envy. Because it would be very helpful to understand for Aspergers, that for their parents, siblings, teachers, colleagues, care takers and psychiatrists, the confrontation with high functioning autists (little professors) can be humbling. They may make these normal people uncertain, because they do not particularly respect their social status; for instance, the fact that you are a senior teacher (doctor, psychiatrist) with a great reputation

does not impress Aspergers so much. They may start to argue with you in public and may make some strong points. Their display of knowledge, rhetoric and intelligence can undermine your self-esteem. You can balance this out, by believing that their superior intellect is housed in a *mental case*.

Fresh looks

Modern, self assured Aspergers, define their condition as one side of the human coin, and not so much as a disease: and since it is no disease, they argue, there is nothing to heal. They also state, that every individual is autistic to some extent, or has his or her own autistic moments – like every hetero has some homosexual impulses. They proclaim, enjoy your *self*! Why not focus on the advantages of being autistic? Like emotional independence, productivity, a great capacity for self amusement, good bonding with dogs and horses, a love for jobs others may hate. And such liberal Aspergers propose, that it is just like hyper empathy, high intelligence, dyslexia, color blindness, hyper sensitivity, homosexuality, synesthesia, Down syndrome, multiple personality, Tourette, monogamy and many other 'aberrant ways of being'; a variation of the human population, that delivers its own important contribution to the species. The species flourishes when there are as many males as females, but it may need 10% homosexuals and half a percent of Aspegers. The latter constitute the few sheep that can live independent from a herd; they may single handedly explore fresh grazing grounds.

It does not take much rhetorical skills, to prove that every human is abnormal in his own right, those *without* a diagnoses may however keep up the illusion of their regularity. But why must sociability be the norm? To autistic people, typicals are just as strange. Some call them an alien species, or heterotists, with their addiction to company, hunger for intimacy, blind faith in friends and relatives, fear of hurting others feelings, complex assumptions about what others are thinking and wanting, weird social jokes and pleasure in group work and team sports, strange occupation with the supernatural and spiritual, hunger for sentimental fiction, superficiality, distractedness, neglect of mistakes, senseless chatting and blindness for patterns, rules and details.

Hyper empathic people (mostly women) are not so outspoken. But they could argue along the same lines: compassion has always been one of the

highest virtues. Altruism is the healing force in mankind. And if all were leaders, there was no one to be lead. As a Hyp. Emp. you never need to worry about yourself, because there are always many others to do so about. Hyper empathy becomes a problem when you overlook your own needs too much and others abuse and exploit your natural habit to obey, serve and follow.

At this far end of the spectrum, one is heavily involved with the opinions and emotions of others and frequently loose oneself in interaction. Hyper emphatics are easily intimidated and dominated and find it hard to accept how ruthless and egocentric neuro-typicals are, let alone autists. They tend to absorb the emotions of others; in the company of a happy partner, they will be happy too, and also the other way around. A bad group atmosphere can suffocate them: 'I feel it all… When they quarrel, it hurts me the more than them'. So hyper empathics may work as crazy to keep the moods high, by supporting others and counting themselves out. They may compensate for this sometimes by overeating, alcohol, heavy smoking or substance abuse. As meek followers, they are vulnerable to be oppressed.

Such individuals, who spend most of their time in the second perceptual position, also enrich society when available in the right numbers. Hyper emphatics have a great talent for working with children, handicapped, the elderly and individuals with a limited capacity to express themselves (are they good with autists too?). But when their care taking is overdone, it is called the Florence Nightingale syndrome. Hyper emphatics can be good actors, hosts, waiters, nurses, magicians, sales people and therapists. However, their constant need for interaction can be just as annoying to others as autistic self-centeredness. Their tendency to over identify can lead to confusion in relationships about, who wants what with whom? One husband complained that his wife tried to be him and she believed to know better what he desired than he himself. And he complained that he always felt anti social beside her; always falling short in his attention for her. She always bought him well picket gifts. He said he could not balance out her signs of affection, and asked her: 'No more gifts please!'

The fact that hyper empathics are seldom regarded as psychiatric cases, has much to do with that they are only a nuisance in the long run. Most people love their care. But in love making they may be too much oriented on their

partners' orgasm to have their own. Their children may become emotional dependent, smothered and spoiled. Hyper empathic mothers can be too much identified with their children (seen as *shared locations* in the *social panorama*). Sons of hyper empathic mothers may search their whole life in vain for a woman as devoted to them as Mum.

That the lives of Aspergers can be difficult is largely caused by the responses of neuro-typicals to them. It is fathers, ashamed of sons that rather read than play soccer; who prefer to communicate over the internet about amphibians, coins, stamps, wormholes and black matter; but never go out with their peers. 'Haven't you seen that that girl fancies you? You stupid!'

The sheep that are in constant need of a herd tend to be weary of the happy loners. However, exclusion is often easier to bear for autists than for typicals, but still a burden. The acquaintance with people with identical specialized interests can improve Aspersers' quality of life a lot.

NLP and High Functioning Autism

NLP-ers who work with clients diagnosed as autists, rely heavily on the NLP assumption that: If somebody can learn something (how to be empathic), someone else can learn that too. However, this assumption does not tell how long this will take. There are case reports in which, exercise in taking the second perceptual position, mainly in the shape of role-play, did prevent a re-diagnosis. There are several NLP-ers working with autistic children. (Mol??)

In NLP, the stepping into someone or something, the going into the second perceptual position, is a regular activity. So it is relatively easy to find exercises for empathy and identification. And by doing these exercises, all people who are training in NLP, will improve their empathic skills, not only the autistic ones. Thus one should not rule out *the NLP-training way of cure*.

Autism experts, who assume *the disease to be incurable*, may respond to the idea of training: 'When autism seems to have gone, the first diagnosis was false.' But to the change, possibilities and resources oriented NLP-ers this is an unacceptable position. What NLP-ers tend to think is: A diagnosis is a nominalization that freezes the flow of reality: all categorical diagnosis of autism is false. It is overgeneralization, distortion and deletion. Chunk it down into specific skills and help the person to acquire these step by step.

Beside the Mayan calendar, Stonehenge and the Pyramids, some say that NLP itself is one of the Aspergers achievements (Just as some believe psychoanalysis is). No other part of psychology, than NLP, has developed a more detailed model of rapport and empathy. Remember that sensory acuity (calibration), the ability to mimic others (modeling), recognize patterns (pattern recognition) and a great control of language (meta model, Milton model, meaning reframing, slight of mouth), are among the characteristics of the Asperger syndrome.

From Frank Pucelik we heard he was a cozy fellow. But John Grinder is reputed for his systematical analysis of behavior patterns and Richard Bandler, the other originator of NLP, has a history of inter personal difficulties behind him that may indicate a lack of social intuition. Grinder's and Bandler's capability to see what others overlook, was fundamental for the early development of NLP. Bandlers' analytical skill, in combination with his obvious conviction, that he is smarter than the rest, has brought NLP brilliant ideas, just as trouble.

One can argue, that an empathic, social intuitive way of doing psychotherapy (like Carl Rogers *client centered therapy* from the 1960s), implies that one first learns to know the client, listens extensively to his problems, and then at the same time sense what feelings these would raise in oneself. By empathizing with these negative emotions, one would in a way recreate the problem state in one's own person. Empathic therapist helps the client to focus on their problematic feelings until they dissolve; which may take some time… While waiting for that to happen by itself, the logical impulse would be to solve the clients problem (which now belongs to oneself too) with one's own creative coping, to next communicate to the client to use the therapist's solution strategy, by saying things like: 'What you should do is…' Also the Rogerian therapist found out, however, that these advices were seldom followed by their clients.

From this perspective, the NLP approach is totally counterintuitive. Because, the client's attention is first *lead away* from his problem to *his goal*. And the client is kept from reliving the problematic emotions, because they would become anchored to the therapist and the therapeutic setting. The relived emotions would also reduce the creativity of the client. The experience

of problematic emotions would keep the client stuck in his problem state as he used to be. The client is thus discouraged to talk too much about what is wrong with him or her. Why? Because, the NLP-therapist believes that he will never really understand another person nor the client's problems, however hard he tries. Since words are only symbols for private experience. So trying to really step into the clients problem is impossible. And beside that, NLP-ers believe, that the only solution that will work, must come from the client's creative potential and not from that of the therapist. Thus instead of being empathic, the therapist focuses on establishing rapport. That means that he is doing those behaviors that give the client the *impression* that he is really listened to. However, the therapist is advised not to take on the emotions and problems of the client, because then he may get stuck too – when the client convinces the therapist that his problems are hopeless. Although some NLP-ers see it different, most believe that therapy works best when real empathy is only reserved for those issues that would otherwise be incomprehensible.

To hyper emphatics, with a great social intuition and commitment to help, the NLP approach is often hard to learn. Their empathic reflexes stand in the way and before they know they spend most of their time exploring their clients' difficult emotions. They often declare to prefer to work 'intuitive' and belief NLP to be not 'authentic' but 'technical' and 'rational'. To them NLP is probably an autistic form of therapy.

Autistic NLP

Most people doing NLP, are typical peoples-people, with a lot of natural social competence. However, that NLP also attracts Aspergers is clear. I have met several NLP scholars and trainers who were totally fascinated by the systematic and rational approach to something that in their youth was a great mystery to them: human interaction. A model like the social panorama, in which a relationship, is in a way, no more than *a vector,* and self confidence is the result of *a limited set of spatial variables,* can be very sexy to people with talent for math and a social handicap. Remember that NLP describes the patterns in unconscious (social) behavior; which is what most people call intuition. For people to whom this intuition is under developed, but who are attracted to the clever analysis of complex things, NLP is the thing to do. And as already suggested above, some believe that Aspergers do significantly

contribute to the field of NLP. As trainers they may live themselves out in explaining complex concepts and categories and the relationships between them. They may find pride in showing their extraordinary capacity to perceive minute details in the behavior of the demonstration subjects. They may value the presented concepts over the participant's capacity to absorb this information and miss to pick up feedback about that (sleeping trainees). That some NLP trainers do house autistic talents, also gives a clue why the cooperation between several leading NLP-ers has shown to be so difficult. (And I leave to others to decide about the authors' contributions and autism.)

Modeling success

As I already mentioned, most of the problems that therapy clients with an AS diagnosis face, result from how typicals respond to them. How to assist them? For NLP-ers, the modeling of therapist who were successful with autistic individuals, is the logical thing to do. What do you need to believe and value, do and not do, to effectively work with these clients? The results can be turned into workshops for other therapists. I know several NLP-ers who are successful themselves and who modeled others.

One of my clients with a diagnosis of autism visited me twice a year for four years in a row. He brought me CD's and DVD's and other musical gifts. Why? We made rapport on music and I tried to assist him leaving his mother's home, start playing bass, kit drum and find a lady. These were his desires, but he did not believe them to be realistic for him. His fits of anger had cost him his jobs and now he received an allowance. His mother sabotaged him leaving home. He was her only relative in the country. So I was wondering, how would an expert autism therapist deal with him?

But it might as well be even more effective, to find those Aspergers who themselves cope nicely with their way of being; and then teach others similar strategies. Examples of HFA-people who are doing fine, show how they make use of smart adjustments, to compensate for what they cannot do so natural. For instance, when they understand *why* they do not like games, baby's, fairytales, religious gatherings and parties, they may find acceptable ways to avoid Christmas, birthdays etc. and may engage in more interesting things with their families and friends. They may avoid social chatting by having a repertory

of jokes to tell. They may use MSM instead of phone calls and can learn to reduce their 'lecturing' to their next of kin and recognize their signs of boredom. They may limit themselves to soloist sports and read, write, compute and puzzle. Their temper tandems can be contextualized in wood chopping, cycling, running and demolition work.

Much compensation comes through learning the rules of human interaction in a structured way; rules that neuro-typical people have learned in an automatic manner and of which they are not aware that they use them; neither do they apply these rules as consequent as Aspergers would. The good news is, that many Aspergers have a great capacity for learning algorithms. They might become a little *over polite* and *sociable* – but that is something most people enjoy. NLP as it already is, offers structured social skills to those who fail to have learned them in another way, like the pacing of verbal qualities, posture, key words and meta programs.

I know an example of an HFA-person who is a very successful trainer in etiquette; and has great explicit knowledge of all the implicit rules of social life. What is implicit (tacit) knowledge to most is explicit for this expert. Put your serviette on the left of your tray when you are ready with your main course, then it will not be in the way of the person sitting beside you. And where Aspergers are reputed to have a great difficulty with chatting, this person teaches the rules of *small talk*. Chatting with this expert is a very nice experience indeed. We may compare this, to how an etiologist knows about the behavior patterns in a colony of monkeys. The monkeys themselves – if they could talk – cannot be very explicit about what they do. They just act and make mistakes. The etiologist however (like Dyanne Fossy, The Wolfman), can live within the pack, because he knows the rules. Where most fish never notice they are swimming in the water, Asperger fish may recognize this fact.

The modeling of the structure of the autistic experience, can help to bridge the gap between both sides. What do Aspergers see, feel, hear, taste, smell, believe, value and fantasize about? This leads for instance, to the metaphor of autistic awareness as a navigation device, with a narrow, but very clear image. Such metaphor may be as helpful for neurotypicals as for Aspergers to understand their differences. Or the metaphor in which the Asperger is like a prison guard. He is working between dangerous inmates, the

typicals, whose behaviors cannot be predicted from what they literally say. When you are such a guard, you need to mistrust the prisoners at all times; and whatever the inmates say, you need to stick to your own opinions. The right metaphors to characterize the Aspergers way of thinking, may be very helpful to both parties; especially when they are contrasted to their opposite. For instance, the hyper emphatics would pity the inmates and trust them because of their gentle non verbal behavior and honest eyes. They may want to prevent them from suffering more hardship (it hurts them too), fell in love with them and help them to escape.

When you understand the characteristics, you will start to expect it. Since it will be no surprise anymore, it will become easier to cope with the different model of the world and the connected behavior. Then it will be possible to also more appreciate it. Instead of focusing on the rarities, one may move one´s focus to the advantages. When an Asperger cooks a perfect five star meal; forgive them their panic attack when a tiny detail goes wrong. And such a partner may ask you: What do you like me to wear tonight dear? And then really also wear that. In contrast, a hyper emphatic partner will never ask this, but will try to surprise you. Or believe: 'Our bond is so tied; we don't need to dress up for each other. Don't we?'

Modeling Empathy in Mental Space

In the *mental space* around them, people simulate the spatial configurations of the real world. These spatial reconstructions are used to navigate the real 3D world. The images that fill mental space, tend to be abstract schemata; that are generalized out of recurring sensory perception. In their *mental space,* people show themselves what is relevant to them, by letting these representations stand out, by making them near, tall and bright.

In general, human beings seem to be extremely important to people; so they tend to be on the foreground of their experience. Psychologists, who study social cognition, should focus on how people construct their *model of the social world;* the mental map of everything that has to do with people and relationships.

How do people navigate the social world in general? And how do they navigate when they empathize? To navigate society, people use a 3D mental

spatial map, in which all individuals, entities and groups that are relevant to them are located on their own unique spots. This results in a landscape of abstracted images of people, all centered around the self in the middle (Lewin, 1951, Derks, 1996, Derks, Ötsch and Walker, 2012). Fifteen years of clinical testing showed, that this is how people know *who is who* in their model of the world. Thus in brief; people orient themselves in social life, on the base of a *panorama* full of *social* images, that they create around themselves: a social panorama.

Most people construct social images with great ease and virtuosity. When they meet, hear about, read about or fantasize about someone for the first time, they create a social image that represents this person. Such *file* creation may happen in an instance. But the more one is exposed to information about this person, and the more important the relationship becomes, the more detailed content the mental file that represents this person will contain. 'I know that person well.'

In Derks' (1996) *social panorama theory*, social imagery is the central subject matter. The social pictures are called *personifications,* when they picture living humans or other social entities (spirits, deceased). The term *personification* is used to differentiate between a real flesh and blood human being on the one hand, and the *mental image* of that person on the other. The reason for this differentiation is that humans only know the *personifications* in their minds; they cannot know flesh and blood people. This is true, just because we have only access to the outside world over our senses, and what these let us know about that, is highly influenced by what we already have stored in our memory. In brief, you are married to your own self created image of your spouse, not to the human being out there. But to most of us this is very counterintuitive: we act as if our images are the real things. (NLP's Map=Territory confusion.)

Behind the visual image of a person, that is projected on its unique location in mental space, hides the total cognitive data about the depicted human. Just like all content in memory, a personification is only activated when we think of it, otherwise it stays slumbering in memory. When we start to think of a particular person, the personification, as it were, wakes up. This personification becomes active on its spot in the social panorama – and this

unique location determines the quality of the relationship. In brief: relation equals location.

However, having a personification activated in mind, does not necessarily mean that the subject is consciously aware of the image. No, the awareness of personifications is in fact a rarity; it all happens in the cognitive background – but still somehow, the person 'knows'.

Dimensions of empathy.

The load of information behind a personification is organized in natural categories: *the personification factors.* These consist of the qualities people attribute to others and themselves – like capabilities, feelings, opinions, motives, spiritual connections, a name, self consciousness and several more (*empathy* itself is also on this list). We don't ascribe empathy to autists. We 'normals' do however possess empathy, we believe. By believing that others fail a certain *personification factor* (self awareness, spiritual connection or empathy) we create incomplete personification; we de-personify the other by doing that. Then the other will not be regarded as an equal being (Derks, 2002).

How can someone know what another is feeling? Empathy, as the capability to sense what someone else is thinking and feeling, must be largely dependent on what is stored in the personification that represents the person that is empathized with. Only if we know what the person tends to feel and think, we may make sensible guesses about that. If the person is a stranger, we can only project ourselves or better known others in his situation and fantasize about, what we or they would feel and think in similar circumstances.

In a way, the *personification factors* of the *social panoram*a are an extension of Simon Baron-Cohens' (1985) *theory-of-mind* theory. The common idea is that autistic individuals have too limited knowledge about what is going on in the minds of others. Baron Cohen says, Aspergers are weak empathizers (do not know well how people function on the inside), but they are strong systemizes (know very well how things operate).

The question is, do such autists indeed use personifications with a limited content? And if so, why do they not store emotions, perspectives or other elements of thought in their representation of others?

In general we can state, that most scholars believe that the lack of empathy in autistic people results from some (maybe many) disabling factors: they thus implicitly assume that the autistic person would prefer to empathize more when they were capable. Seldom, their tendency to attend to things above people is regarded as a free choice: 'Just because things are more fascinating than people. Since people are everywhere and silly.'

It's hard for, in general *people oriented,* psychologist to believe that a *normal person* can consider humans to be boring. And to accept someone as ones equal, who considers other people's feelings unpleasant and their ideas stupid. Who has come to the conclusion that there is no reason to waste your time to simulate others within yourself. To most psychologists, loving things over people is seen as pathological by itself.

Many researchers agree that *sympathy* for a person is a precondition for empathy. If that is true, we should not beforehand exclude the hypothesis: That if you are raised between, to you, stupid and unsympathetic others, this could cause you not to empathize. However, many hyper empathic people, empathize with others even though they don't like them.

If you are interested in people, you may create elaborate personifications that contain notions about what they feel, believe and desire. But stepping into others feelings and perspective, takes considerable mental effort. So why try it? Is this an innate drive? Primate baby's need empathic parents, as primatologists believe. Yes, empathy may be necessary to care for a human baby. So being empathic is part of a successful procreation. But what other advantages does feeling the feelings that belong to others have for a person? What could be the reward to do so? Is it not the person who is empathized with, who benefits most? Oh yes… People will love you, when you empathize with them. You feel their love for you, when you empathize with them loving you.

Some hyper empathic therapy clients, tell tales of aggressive, addicted and abusive parents. They needed to be able to forecast daddy's mood, to know to smile or hide. Others describe how knowing about the inner state of others offered them special opportunities; the rewards could be money, support, family harmony, love, protection or play. 'I know Mum feels guilty to me, because she divorced my Dad.'

Me:“Last night I dreamt of Daddy. I felt so bad after waking up.”

Mum: “I am sorry dear.”

Me: “I feel so alone; I want to go out with my friends tonight”.

Mum: “That is nice.”

Me: “Oh, I have not enough for the movies, that is a pity…”

Mum: “Here is ten, love…”

Empathy helps a child to support, predict and manipulate his next of kin. This opens up another hypothetical cause of autism: When parents take care of all of a child’s needs including joint attention, save attachment, it may not need to pay attention to his parent’s moods. Couldn’t Autism be just as well a sign of too much care and reliability on the side of the care takers?

Moving into the location of the other

In the *social panorama model,* all social cognition is analyzed on the base of where personifications are represented in the mental space around the person. In this approach, also empathy is seen as imagination in 3D. Common language speaks in spatial words: *taking the others perspective* or *stepping in their shoes*, *taking the others stance* or *taking the others position.* Therapeutic work on the base of NLP shows, that this is exactly what people do in mental space. For empathy, the center of the self awareness of the empathizer, must move to the mental position of the personification depicting the person that is empathized with. For this, the subject moves from his self position into the imagined location of the other. This move can be made extensively, detailed and consciously (deep identification) or partly, superficial and brief.

In NLP exercises, the spatial location of the other is often marked by moving a seat to this spot. On this seat the person with who one wants to empathize is visualized. Next, the trainee will sit on this seat himself, imagining to be the other person.

Derks’ hypothesis is that during normal interaction, when the real person is present, the move into the personification is fully unconscious and fast. It delivers the empathizer with notions about what the other may want,

believe and feel. Since this usually happens in the unconscious background of experience, it may go totally undetected. However, the move is only possible if there is a representation of the other (the personification), and will rely on the knowledge (or fantasies) about the other that is stored in there. The actual behavior of the other is not so important in the social panorama theory. It will however influence what is stored in the personification.

In brief: We do not need a real flesh and blood other to empathize with him or her, but having just his or her personification in mind is sufficient. Or more bluntly: people may create a personification of an entirely virtual individual (Lara Croft) and empathize in the same way with them as with their loved one. In the *social panorama theory*, there is no difference, since you also love your own mental image (personification) of your mate and not the real flesh and blood thing.

For incapacity to empathize to occur, the social panorama implies four possible causes:

1) Lacking the personification. (You cannot step into something you do not represent)

2) Lack of access to an existing personification (The personification does exist in memory, but it "sleeps" while the person does not think of it. This happens when the person is not interested in the other).

3) Incomplete personifications, with missing motives, feelings and opinions. (The person does not incorporate information about critical categories like feelings, perspective in his or her personifications. So about that the person knows to little when he tries to empathize.)

4) The personifications are too difficult to move in to. (When the personifications are represented *too far away* from the self, this makes traveling the *mental distance* between the self and the others' personification hard. This will often happen when the others' personifications are considered to represent unsympathetic individuals, or as some researchers call this: beyond the *ethical guard*. Think of war criminals or serial killers).

This last, fourth reason for *difficulties with empathy*, arise from having represented the others on too distant locations in the social panorama. It is

useful to know that, some people do pack the mental space around them full with people, while others create a sphere of emptiness around them. It is clear, that for empathy to work easily, close and large (elaborated and sympathetic) images of the others work best. Very empathic individuals have many people grouped around them, large and at close range and in a cozy manner. Close images tend to be larger at a short distance and will have more emotional impact just by their size alone. When the images are more prominent than the self-image, empathy with them seems to become compulsory (see also further below). A low self esteem and a negative self image will help a hyper empathic to occupy themselves with the inner world of others.

Six grades of empathy

The social panorama theory makes it possible to refine the concept of empathy. Therefore, we ask ourselves: What mental options does a person have when he witnesses a person in a difficult situation? For instance, when someone witnesses a climber in a difficult pitch on a cliff face:

Empathy grade 0) This witness notices the other person (the climber) but does not pay attention: 'Yes I saw a climber…; what do we have for dinner?'

Empathy grade 1) This witness stays distanced, with only his or her own evaluative feelings; positive (sympathy) or negative (antipathy) or neutral: 'That is a daring idiot. Maybe we can startle him, so he peels off! Ha ha. You know, climbers disturb the birdlife.'

Empathy grade 2) This witness can project an image of himself (dissociated) into the difficult situation and reconstructs what he would feel if he was there: 'When I imagine what it is like there… pooh! I am way to weak and spastic to climb one meter. Bloody hell… I am glad I am here.'

Empathy grade 3) This witness opens up for the social model of the other, his *mirror neurons* start to automatically mimic the observed behaviors: 'I can feel how he needs to keep that handhold and stretch his body forwards. That must do the trick.´

Empathy grade 4) This witness opens up for the social model, connects his *center of self* to the image of the other, as were it his own self image; the latter will start off role play. Now the person starts to *play act* as if he *is* the other. 'I

just swing up; put my foot in a hook, because I am the super-power-climb-athlete. Oh no, I never worry about gravity. Gravity is my friend; it pushes me on the holds. Tra la la…and I prefer a sniff of coke before I go up. ’

Empathy grade 5) This witness knows the observed; he has created a complete personification in his social panorama of the observed. The witness opens up for the social model and mentally moves his self position into the personification of the observed and senses what he beliefs the observed person experiences. (This is empathy, as the term normally is used). ‘I know he loves to struggle in overhangs. He considers that kind of fun. It makes him really happy.’

Grade 6) The witness knows the observed (has his full personification in mind) and find him sympathetic and opens up for him as social model (his mirror neurons start to work), he also connects the image of the other as his own self image so he can role play (act as if and identify some time) and can estimate what is going on inside this individual and recreate these feelings, opinions and perspective in himself (full identification). ‘Wow, that is taxing for my fingers; that is freighting to, but not too much so and a great kick when I clip in the next belay. Yes!’

As already mentioned above, in the *social panorama model* a lack of understanding of other peoples motives, emotions and perspectives is believed to be caused by the omission of this type information in someone’s personifications. In other words, only if you have an idea that other people do have their own perspectives, emotions and drives, this will be encoded in your personifications. If you do not apply these categories to others, you will never be able to do grade 5 and 6 empathy.

By analyzing the social skill of empathy in detail, it will be possible to test more precisely what a person is capable of. And this will serve to create exercises to train the missing parts.

Some implications.

From the perspective of the *social panorama model*, grade 5 and 6 empathy takes a known target-person. Research into empathy often makes use of stories, photographs and movies of anonymous individuals. The

experimental subject is asked to guess the emotions of this unknown person (Chambers and Davis, 2012). In that way the experimental subject can only at maximum apply grade 4 empathy: by projecting himself in the situation of the unknown individual. “What would I feel in that situation?”

In real life, most people seem very fast in creating detailed personifications. And those individuals who immediately get involved in the characters in a movie, perpetrators or victims, show how quick one can create personifications and empathize with these. This means that research with unknown but briefly introduced characters may work on the level of empathy as used in reading and watching movies.

Hyper emphatics are reputed to *over empathize*, in the sense that they have the habit to totally identify with others (grade 6 empathy). As a result they may avoid individuals, who they believe to possess bad feelings and to seek the company of those who are happy. *Over empathy* can results in, what is called in the social panorama theory, *shared locations:* personifications that share each other’s space. Since empathy takes the stepping into the location of the personification of the one with whom one empathizes, the sharing of space may start to happen on a permanent basis. Then the personifications of the other is experienced within the clients body limits (entirely of partly). Shared location is the product of intense, frequent and prolonged empathy. It seems to be fully natural for mothers to *share location* with their baby’s (As they do for real during pregnancy). But most mothers tend to move their baby’s to their own individual and external spots, some months after birth.

Strange symptoms arise, when locations are permanently shared. These can be labeled as *identity confusion.* The influence from the personification within the body can vary. Some ‘possessing spirits’ are weak, others can be all dominating. Clinical work has supported the idea, that possession is grade 5 and 6 empathy with the personification that is dominating the self image of the possessed (Derks, 2002).

Empathy and power in mental space

Aspergers seem leaders, not followers. Why? The social panorama model makes visible, that a person who is not capable of going into the second

perceptual position (cannot empathize) is not affected by the social dominance of others. The model gives the following explanation:

To be dominated means, to make the other more important than oneself in your social panorama. In practice, such importance means that the image of the other is seen more prominent than the self image. More prominent means, bigger, closer and more in the center of attention (the so called 12 o'clock position).

The *feeling of self and the self image* determine the strength of the self experience. When the balance is tipped in favor of the self, the person stays with his attention in him or herself: stays in his location of self (first perceptual position). However, when *the other* is experienced as larger, closer and brighter, one's attention flips into the other personification's position (second perceptual position). The dominated person will automatically leave the first perceptual position and go into the second with the dominant one, when his self image is smaller, darker, further away and more sideways than the image of the dominating person. It seems that one's perspective (perceptual position) is automatically drawn towards the most important social representation in one's social panorama. When a shift from first to second position happens, a person will become compulsory occupied with what he believes the other one feels, wants, values and beliefs.

Derks, in his clinical work, found this principle so reliable, that he talked about a social psychological law: The so called *law of the dominant personification* (Derks, 2000, 2002, 2004). When one sees the queen as bigger than oneself, one must empathize with her. And it will also force one to see a so called second position self image: one will start to look at oneself as if trough the queen's eyes.

So why are Aspergers domination resistant? Because, if someone is not able (not willing) to empathize (does not go into second perceptual position), such a person is not vulnerable for dominance. The person will stay in the first perceptual position all the time, which makes a strong impression on bystanders. Such person does not mind what others (the queen, the general, the therapist or the husband) feel, because he has no ideas about that. This person will not be affected by emotional blackmail: 'If you do not do what I want, I will feel miserable.' Neither is such a person distracted by his fantasies

about what others think. And the fear of what judgments others might have, proves to be a major cause of social inhibition in typicals and hyper emphatics, but not so much in autists. Shame, guild, self critic and the fear of losing face, is for hyper emphatics.

This theory implies that autistic leaders (Gadhaffi, Hitler, Saddam, Stalin etc.) thank part of their power to their inability to emphasize. They can be cruel, just because of that. Their followers, just like hyper empathics, are the victims of their own superior social skills, since they empathize with these leaders all the time. Women are especially at risk, since they seem to house more empathic skills; they may lose themselves in the proximity of dominant autists. And we may pose the burning question: is it mankind's need for indiscriminate leadership, that helps to reproduce the autistic genes (in the doubtful case there were such genes)?

The social panorama model describes empathy as an imaginary process in mental space, that needs *the self* and the personification of the person that is empathized with. And this personification also needs to contain enough information about the person's perspective, emotions and motives. That the inability to empathize may be interpreted as social power, and, that because in general males are less empathic than females, this has some surprising implications for the distribution of power.

A great hyper empathic manager

Hyper empathics will have many, to them, prominent others in their social panorama's and may have a not such an important self image. This causing the others to overpower their self representation. Clinical work shows several varieties thereof.

Joanne is a very successful manager. Her 50 coworkers love her. They say, 'she really listens to them and she really takes their needs into account'. Loved as she is, she complains about feeling not self assured in her job. Thus I explored her *self-concept* in the way that is done in the social panorama model. This means that I asked her to associate with the problem context and then search for the feeling of self (see Social Panoramas, 2002).

The result was remarkable. In the context of work, Joane felt the core of her being (her feeling of self) 40 centimeters beside and 20 centimeters above her head at the left. This (out of the body) center of feeling, was looking down upon her self- image, that was in front of her belly at about 30 centimeters. What does that mean?

Normally the feeling of self is somewhere in the chest or belly and from there the person connects to a self image that is straight in front. In Joanne's case the whole of herself was experienced at the outside of her. What also struck me, was, that she mentioned that she not only saw *herself* in the self image, but in fact she looked down on *the team* that she was leading. Thus from her imaginary high point, she could oversee her influence on the others around her.

In other words, she had a wide scope self image, that showed the connections to the team members. This probably offered her great empathic qualities as manager. However, the high position where she felt herself, located outside of her body, seemed to reduce her ability to stand her ground. She told me, that in cases where she had to take decisions that could be unsympathetic to the team members, she was very handicapped. Especially in such instances she experienced her lack of self confidence.

I invite the reader to try this out for a moment. Say to yourself something like: 'me' and imagine looking down from beside yourself on an image that shows you in the middle of your team (or family). This image must be waist high in front of you.

Joanne was a clear case of non-autism. In the course of my work I met one other female manager with a related sense of self and leadership issue.

Modeling the scope of attention

Why knows Tom all lines, stations and the entire time table of the London underground by heart? Is that to travel in that city? Not necessarily. Since most Londoners and tourists find their way without such detailed knowledge. So why did this interest him so much that he spend his time to

become a greater expert than the subway personnel? Why? 40 years ago, when we first met, I thought he knew the London metro so well because he was an eccentric. And I wondered, why London? He lived in the Netherlands for goodness sake.

Due to a lack of central platforms in the field of NLP, only few people are familiar with Steve Andreas' (2006) introduction of *scope* as a basic cognitive dimension – together with *category*. Scope can be understood with the metaphor of a zoom lens. Zoom out: widening the scope, zooming in narrowing the scope. Overlooking a *landscape* takes a *wide scope*, while a red tulip flower that is filling up ones entire awareness, exemplifies a *narrow scope*. The s*cope of attention* can help to model the autistic spectrum.

To navigate a big city, one needs a *mental map* with a relatively *wide scope*. For successful road finding ones mental image needs to include boulevards, avenues, squares, bridges and railroads. It helps when one knows where the center lays and where certain quarters, waterways and parks are located. Every old fashioned taxi driver had such a wide scope image in mind.

When someone, however, would try to navigate a city with a narrow scoped map in mind, he may just only be aware of the street he is actually on. And will thus have no idea about what is around the corner. But he may know about the quality of the pavement, street lanterns, sidewalks and the architecture beyond that. But this will not help him find his way very well.

We can see this perfectly illustrated in car navigation devices. What their screen shows, tends to be the scope most people prefer: an image of at least 1 mile across, showing few details. Imagine reducing such an image to one hundredths of its scope. It then will only show the edges of your car and what is immediately behind that. At most this would help you park.

Scope and the unconscious

If we combine the concept of *scope* with the distinction between *conscious* and unconscious, and then also look at both ends of the autistic spectrum, what do we see?

Now we can distinguish between a wide and narrow scope in conscious awareness, and of cause in unconscious cognition too. Are autistic people *narrow scope unconscious* and *wide scope conscious* thinkers? And are hyper

empathics *wide scope unconscious* and *narrow scope conscious* thinkers? Maybe so…

What is called, *unconscious background cognition*, is the knowledge of everyday common things that we know without awareness. This background stuff must be largely learned in an unconscious manner. We pick it up, without paying attention, from our regular routines. Background cognition maybe forms the better part of all we know, and we may expect that it is largely learned with a wide scope, when we are not focused and things just happen in their regular manner.

An example: You arrive on a familiar beach. After looking around for some moments, you lay down and close your eyes. Now you begin sunbathing and relaxation sets in. A largely unconscious wide scope sense of what is happening around you is all there is. You know you are among other recreating people, their kids and dogs. There is sand below, sky above and the sea is somewhere at your feet. With your eyes closed, your muscles let go all tension. Now your body feels asleep but your mind is still awake; blank as a Zen master's.

Now something is licking your ear…

This may evoke an invasion of narrow scoped conscious activity. *What or who is licking?* Now you have two types of information processing going on: A wide scope unconscious notion of where you are in the background and a narrow scope conscious sense of some wet tongue at your ear.

Another example on the same beach: You are no longer awake, you're napping, start to dream, and by doing that lose your sense of the wide scope beach. Now something starts licking your ear! It immediately wakes you up in a startle: but you have forgotten where you are… *Where the hell am I?* Then slowly the notion of the beach comes back, as one big idea.

Now imagine how it would be like if the wide scope sense of the beach would stay switched off forever? Then there is only de licking and this will totally occupy your consciousness without a context to give it meaning. Are you the victim of cannibals? Love? Ah! Panic!

It is the background of unconscious contextual knowledge that provides us with the meaning of experience. Without it, we do not understand things well. Without it, we are forced to create ad hoc interpretations.

Dual mode

The background-foreground, *dual mode* character of cognition was written about by Frederick Meyers and William James in the 1890s, the Gestalt psychologist in the 1930s, Julian Janes in the 1990s and Daniel Kahnemann in 2011. In the wake of Milton Erickson, this has been reduced in NLP to the *conscious*- and the *unconscious* minds. This is a robust distinction, but it misses other critical dimensions of awareness like speed or scope. In this article I propose that in most humans a *wide (and fast) unconscious scope* in the background is combined with flashes of (slow) narrow scoped attention in the foreground. How does such a view match people's subjective experience? Not so much, since the unconscious parts is always unconscious and thus outside of awareness: and thus, not noticed. But most people easily recognize that they're not consciously aware during all of their waking time. They may idle away, dwindle off or be blank out. Flow is the now popular term (Mihaly Czikszentmihalyi, 2008, Flow: The psychology of optima Experience) for functioning flawless without a conscious focus. That happens when well trained unconscious pathways steer behavior in a sheer perfect manner.

When we assume that people can differ in the amount of wide and narrow scope awareness, it becomes easy to see that this must give shape to basic characteristics of their model of the world. Logically, when one thinks always in a broad manner, one's model of the world will be broad. Prolonged wide scoped experience in the background will lead to abstract schematic knowledge that may function totally outside of awareness. What most NLP-ers call, *the unconscious mind*, is partly consisting of programs and databases that are constructed outside of awareness with a wide scope of attention. The *personal time-line* is a great example thereof. People only become aware of them having a *personal timeline,* after this is made conscious with the aid of specific questions.

What does the scope of attention theory imply for empathy?

1) People will vary in the amount of wide- and narrow scope cognition they tend to engage in and this will shape their (social) model of the world.

2) The acquisition of complex social (overview) representations may need unconscious wide scope cognition. In other words, to create a elaborated social panorama, asks for wide scope unconscious input.

3) But the acquisition of detailed knowledge of concrete principles, systems, math and the operation of machines, may need intense conscious cognition. The wider the scope of this consciousness is, and the more intense, the faster the learning will be.

4) When empathy is based on the availability of complex unconscious social representations (a mental constellation of personifications), people with more unconscious wide scope cognition may have more to empathize with, and visa versa.

5) Less access to wide scope background knowledge (general contextual overviews) will reduce the capacity to navigate in life's complex environments. Fits of uncertainty are imminent, when there is only little social contextual knowledge to draw from.

narrower scope	HYPER EMPATHIC	AUTISM
wider scope	AUTISM	HYPER EMPATHIC
	conscious	unconscious

Fig 1: The extreme scope-empathy hypothesis

From all observation it seems that people with AS, experience a narrower scope in their *unconscious background cognition* and a wider and more intense scope in their foreground attention. Hyper empathics have a great sense for contextual data. They may be more steered by the context than by what they themselves want, feel or believe. To them it is difficult to focus on a large enough piece of experience to self determine.

Modeling feed forward

To understand more of social attention, we have to look at a theory from the nineteen eighties, that was originally distilled from observing *resources* in NLP. The main question this theory tried to answer is: What is a *mental probl*em, and how can it be solved with a *resource*? A *resource* is a piece of memory content that is unrelated to the content of the problem. For instance, when the problem has to do with jealousy, the resource that helps to solve it, has nothing to do with jealousy.

In the 1980thies, this question was alien to psychology, for the simple reason that only few scientists were familiar with how people solve their problems. But NLP-ers, who work hands on with clients, frequently witness how something that seems at first insolvable, changes into a fruitful learning with the aid of an seemingly unrelated piece of cognition: *a resource*.

The simple technique of *collapsing anchors* (a NLP- stress reduction technique from 1970s) may serve as the experimental paradigm. In this procedure, the problematic *stress state* is first relived and then *anchored* (classical conditioned) to a touch. Next an experience of *the opposite emotion* of the stuck state is asked for. Then the client is summoned to relive a clear example thereof, and this experience is also anchored with another touch. For instance, the client calls his problem state *fear*, then he may name the opposite emotion *trust*. Next he is asked to explore his episodic memory, with the purpose to find a concrete example where he experienced a strong sense of *trust*. After this memory of trust is relived and anchored, both anchors (the touches connected to fear & trust) are stimulated simultaneously. This causes the two opposites in some way to mix, during which the client goes trough grades of uncertainty, until finally a stable connection comes into being.

This procedure most often results in a reduction of the intensity of the problem state; something that can be extended to future situations that otherwise would cause a similar fear. By creating these future connections the resource of trust will also be associated to these future contexts.

The NLP problem solving paradigm with the aid of resources, gave rise to the idea that this exemplifies the regular way in which people resolve emotional issues. In general: To overcome a problem, you need to create new connections. If you cannot create such connections, you will continue to experience emotions like panic or fear.

Clinical conclusions

Experimentation with NLP techniques leads to the following redefinitions:

1) What is a problem? A psychological problem consists of a recurring conscious awareness, that something is wrong. Most often this awareness is followed by negative emotions (like fear, anxiety, panic, stress, nervousness, anger, etc.)

2) What is a solution? A solution to a psychological problem has arrived, when a previously recurring conscious awareness and the connected emotions, does not recur anymore under similar stimulus conditions. No recurring awareness, necessarily implies that the stimuli that at first triggered the problem, could become processed in an unconscious way. (is now habituated)

From these definitions, the question to answer is: How can a recurring piece of unpleasant consciousness can be changed into an unconscious process with the aid of an unrelated memory?

A long research tradition, that is called *The habituation of the Orientation Response* (Sokolov, 1960), had blocked theoretical progress in this field. The NLP paradigm gave fresh leads. It showed that the relation between unconscious- and conscious cognition and emotion, could be brought under one larger theoretical umbrella. In this way, NLP practice raised a fundamental psychological inquiry (That was however hard to get an audience for in 1986, since the NLP-ers were to practical and the psychologist to theoretical.)

The Feed forward theory of consciousness

This theory followed from hundreds of clinical experiments, that showed very predictable outcomes. Recently, this complex psychological theory, was turned into a *one liner* by Cesar Milan, the star in the popular animal psychology show on Discovery Channel, *The Dog Whisperer*. Cesar said: “When the dog moves forwards, his *mind moves forward*, and all his fears are gone.” In this sentence he showed his comprehension of what causes fear: a mind that comes to a standstill.

The Feed forward Conception of Consciousness (Derks&Goldblatt, 1986; Derks & Sinclair, 1997) is based on the fundamental property of living neural tissue. And that property is, that every cell is always sending impulses to several others. No one can deny, that thought processes must primarily arise from that phenomenon. But the question is: how learning processes can turn this spontaneous neural firing into orderly thinking. The feed forward theory gives a clear answer. The 2012 update of this theory centers around the following premises:

1) All sensory and not sensory input to the (awake) central nervous system gets automatically recorded. The principles of *contiguity* (simultaneous occurring input) and *contingency* (successive input) take care, that we not only remember what occurs together (like in photographs) but also what happens in succession (like in movies). So in principle we record all that affects our neurons. However, not all recordings are strong enough to be retrievable into awareness, and during sleep only the dreams just before waking up are stored.

Contiguity and *contingency* also underlie the traditional distinction between classical conditioning (=several elements become one Gestalt = photo) and operant conditioning (=elements that succeed each other in time get connected = movie). Connections can be weakened and strengthened on the base of the amount of reward or fatigue that follows on inner rehearsal (all according to the so called *rest principle*: Sinclair 1982).

Due to rethinking, everything that is recorded in the central nervous system, will fall prey to generalization and abstraction. In other words, the records of concrete historical events will become generalized, stacked and simplified to more robust schematic patterns as a result of repeated reprocessing (remembering). But un-reprocessed recordings may stay in their pure original shape.

2) All mental processes exist of ongoing chains of associations (This view resembles William James' *Stream of Consciousness Theory* from 1890). Everything flows from the one idea to the next, and such processes may run in parallel and in great numbers. The strength of the connections between the elements of thinking patterns can wax and wean. Repetition seems a factor, but according to Sinclair (1982), it is the variation in activity and rest that creates synaptic strength. Synapses use interval-training, like athletes. By using

them and resting them, ever more efficient associative chains develop, that that become stronger and at the same time involve a decreasing numbers of synapses. Well trained associations run with great speed and little effort; thanks to their reduced populations of strongly connected neurons they can run way too fast for consciousness. Great streams of thought run in the unconscious background of awareness until one of these chains gets stuck. Then bam!

3) Learning is aimed at the formation of smoothly flowing mental programs. This means that all learning consists of the one thought (neural network) searching for possible successors in associative *feed forward chains*. The central nervous system is hard wired to create this forced search from the one concept to the next. Learning is compulsory and this *feed forward search* is the driving force behind all psychological development. It pushes people to create a model of the world – they need such a model to survive – but their neural tissue forces them to construct one.

4) If the connections are running smooth, when each and every piece of thought immediately finds its successor, all is fine. And again, unconscious thought processes are composed of efficient running chains in which succession of the one piece of thought to the other is very fast. However, in the course of learning, the forming of new connections is not always easy.

5) The *feed forward theory of consciousness* is all about the searching and finding of associative links. The key to a new association is called *partial activation*. Potential successor networks need to be inundated with excitation (activity) to a certain level to awake them. This means that a potential successor network needs to be activated for a part by its predecessor, to make it function as the next point in the chain. The structure of the neural tissue itself causes, that when a neural network is activated by a large enough part, it will automatically become active in its entirety. It are the back and forth running synaptic connections that make up the network, that mutually stir each other up. In metaphor: We only need to poor an enough bit of yogurt into a pan of milk to change it all into yogurt. Or, we only need to see enough of one taillight of a Mercedes SL 300, to already recognize the whole car. If we only read a few *ltrs*, we recognize the entire word.

So when a neural network is searching for a successor, it only needs to

activate a key amount of the next network to make this the following point in the chain. This concept of *partial activation* is absolutely essential to understand many psychological phenomena. Among them any form of conditioning and also why rats, that have ever increasing parts of their brains removed, are still able to carry out the tasks they have learned before these lesions. The great redundancy of the networks makes that possible; if thought processes were made of single tracks, linear information transmissions, they would be interrupted as soon as some cable would be broken. As long as there are enough cells and synapses left to do the *partial activation*, the chain of associations is not broken yet. The remaining cells that belong to the networks involved, wherever they are located in the brain, can still find successor networks. But if the amount of activation of a potential successor remains too small, the chain of associations gets blocked. Then the person does not know the next… uh…

6) In the *feed forward theory of consciousness*, we find the integration of cognition and emotion. Although for most of my colleagues this is too good to be true, it also explains consciousness and unconsciousness.

Consciousness, and as a next step emotions, are caused by the process of the searching for a connection. At first, when the connection not yet exists, *attention* is forced to de spot of stuck-ness, and when nothing is found, even after a moment of awareness, a negative emotion sets in. The negative emotion is the consequence of the neural search activity itself. It acts like a storm of searching activity (excitation) that blows trough the central nervous system, touching the sensory and motor areas and by that creating feelings and contractions. The storm also causes background noise; high arousal that impairs the mental resolution level – something that reduces the chances to find something in memory. With higher levels of noise (arousal) one needs bigger *partial activations* to start off the next network.

The view above, points only at how negative emotions arise: from searching in vain. However, positive emotions stem from the finding of the associations that were sought for. And the more profound the searching was, the more intense the positive emotion will be, when the answer is found.

The neurotransmitters (inhibitory, serotonin, GABA etc.) that are released at the moment of *finding*, help to consolidate the new connection and give a pleasant feeling at the same time (Sinclair's *Rest Principle*, 1982). Eureka!

In this model the mind is automatically forced to complete its mental software; it must learn and create a model of the world, or else the person will suffer from continuous forced attention and negative emotions. As Charles Saunders Peirce stated in the 1860s: A mind in motion wants to become a mind in rest. When a new learning is completed, a feeling of satisfaction rewards the person for their accomplishment.

The distinction between cognition and emotion has delayed psychology for decennia. The belief to have found the emotional brain centers (amygdala, hippocampus) mislead us. And made it hard to see, that emotions largely originate from (un-) conscious cognition, as part of the creation of the model of the world.

Autistic panic attacks

In this view, attention functions as the monitor of the mind. Wherever some chain of thought is stuck, because of a dilemma or a lack of knowledge, attention is called in to help. We may call it *forced attention*. When the attention is summoned to a connective weak spot, this speeds up the learning rate to the level of *one trail learning*. So attention (consciousness) is not only the monitor of the mind, it also is the fast learning mode. Within the scope of attention connecting goes fast.

And with a more powerful attention, learning becomes even faster. The hypothesis is that Asperger autism goes together with a more intense level of attention. The scope of attentions seems to be wider and the level higher than in typicals.

Selective attention

To the mind, not all concepts (neural networks) that can be found are acceptable as successors. What is called *selective attention* is a means to steer how the searching for new associations takes place. The search can be directed. Prefrontal parts of the cortex may actively brake, bend and stop searching activity – they can reduce (inhibit) partial activations. They can also diminish (inhibit) some characteristics of a searching concept. For instance, its color. If we do not want to create a connection on the base of an analogy in color, our selective attention can suppress color during the search. By that, it reduces the

chances of connecting to a concept on the base of a similarity in color or any other suppressed quality. But it can also direct the search towards rhyme, for instance.

Higher conscious cognitive activities rely on selective attention. In a wide scope conscious search process (as hypothesized here, that Aspergers make use of), there is more room for direction: the person can think in a more precise manner. The level of control over calculation, logic and speech are higher than average.

By the way, selective attention is the same as *will*. Selective attention is the taking of influence over one's own associative processes, primarily in order to stop undesired, false, irrelevant, stupid, unethical etc. connections. This is a core part of what is mostly seen as the *ratio*. Aspegers tend to be good at that too. Their intense level of awareness however, makes them extra sensitive to distracting sounds and images.

The bad news is, that the prefrontal parts of the cortex, the ones that provide us with selective attention, get tired relatively quickly. And they are sensitive to alcohol and drugs. Their inhibitory neurotransmitters are depleted after a couple of hours of use and can only be restored during relaxation and sleep. They are what affects concentration, self control, selective attention and will.

Bud what does the feed forward theory tell us about empathy and the autistic spectrum?

1) Panic attacks show where someone cannot find an associative connection. Autistic people have more panic in their lives and seem to use ritualistic behaviors to avoid it. They love predictability, order and organization.

2) A high level of panicking may arise from a limited orientation on wide scope unconscious background cognition: lacking context (context blindness). Disorientation, is a characteristic of a lacking background. Autistic children seem to suffer more from difficulties with sleep, probably caused by disoriented awakenings. The contextual background is as it were a library to pick meaning from; with little of that, you forget the beach and panic when a dog is licking your ear.

3) The making of new connections with the help of selective attention is part of the superior cognitive qualities of Aspergers. Fast learning and a very good memory function.

4) Hyper emphatics have little panic. They can live in chaotic environments within a complex social structure. They also seem to have a lower level of general arousal: are more relaxed. However, when exposed to dominating others they can become very stressed, most often by the idea, that they are not fulfilling the others expectations. They may empathize with the stress of others.

5) Although their intelligence may be above average hyper emphatics do not appear to be very smart (they are not *out smarters*), cannot argue so convincing and are bad at logic and math. But their reality testing seems very good; so they do not talk nonsense (except when it comes to their self esteem). They are great in orientation but relatively slow learners.

Modeling the search range

The *search range* is a concept that follows from the *feed forward theory*. A s*earch range* is defined as the proportion of the total mental content that is accessible from a searching engram (or searching neural network). We can best compare this to the searching with Google. When we give Google a couple of words, it searches from these for similarities in the internet. When we compare the brain with the internet, we understand that a *search string* will reach a certain proportion of all available data. It will reach only those data with some kind of similarity (analogy in sub-modalities).

As proposed in the feed forward theory: when the brain gets stuck, an activated concept was not able to find a successor. This may have several reasons:

1) A failure to connect may result from lacking neural links. The synapses and dendrites belonging to the searching concepts are too weak to bring about a big enough *partial activation* of a potential successor. Or their physical reach may be too short to arrive at the far corners of the mind – as was suggested by (Belmontee.a., 2004; Courchesne & Pierce, 2005; Just e.a., 2007). They explained autism from a lower level of long distance connection in their brains, in combination with a more intense network of short connections. Also young

children have less long distance connections; leading to the hypothesis that less access to contextual (unconscious background knowledge) results from impaired neural development.

2) A failure to connect may result from suppression and/or dissociation (Singer, 1990?). The connections may be present, but they are blocked by inhibitory neural activity, selective attention.

3) A failure to connect may result from lacking analogy (similarity) between the searching and searched for network.

In all these three cases we can say that the *searched for concept* lays outside of the too small *search range* of the stuck concept.

When a stuck concept searches a successor, the means of finding something is *analogy in sensory quality*. What Google does on the base of the similarity in patterns in letters and numbers, the brain does by using any type of similarity, in any sensory quality but also words, letter and numbers. Or in terms of NLP: The searching concept has a set of sub modalities (=sensory qualities, color, shape, sound, feeling, weight etc.), and the searching takes place on the base of these sub modalities; they help to find similar, analog sub modalities in other concepts stored in memory. On the base of these overlapping sensory qualities a *partial activation* of the successor may come into being.

Metaphorically: The last concept at the end of a stuck chain of associations, fishes in the files in the mind with its sub modalities as bait. What it catches depends on the amount of analogy between the searching and the potentially caught concept. The amount of analogy necessary corresponds with the *partial activation* that forms the start up key to the concept to be found. So the fish only bites when the bait is big enough.

When the searching is too difficult and takes too long (more than 300 milliseconds), attention is commanded to aid. This we already called *forced attention*.

Search range conclusions

What conclusion can be drawn from the *search range theory,* about the autistic spectrum?

1) Learning with a narrow unconscious scope will necessarily leads to limited concepts with small search ranges; what means that a stuck mind has less options to choose from. A preference for the concrete and factual above the vague and spiritual is not strange to Aspergers and can be related to this point.

2) A strong involvement of selective attention may keep a person on the relevant track; will however limit the amount of sensory qualities of the concepts that are created. This will limit the search range of such concepts. Relevance at the one hand, will lead to a mind that gets stuck quite easy. This will reduce the variety in associative pathways. This may create a procedural and more rigid type of cognition in Aspergers.

Autistic people show all the signs of thinking with smaller search ranges. The narrower scopes with which they created their model of the world, limit de spectrum of choice when it comes to finding new association. Especially on an unconscious level.

Much stuck-ness causes stress and arousal in the mind. Arousal reduces the scope even further in its own way. Because a higher level of nonspecific neural activity (noise) will decrease the effect of an *partial activation*. With a higher level of noise, the signal (partial activation) that it takes to activate a successor engram must be stronger. The latter may underlie the irritation that autistic people show when they have to find to many new links at once.

The broader scope concepts used by hyper empathics will cause them to easily create connection. The relevance of these connections will not always be so tested. This can lead to loose end metaphors and non-logical conclusions. Great associative jumps can be made over the analogy on unexpected characteristics of the concepts. This works better in poetry and art than in science and mechanics.

Final conclusion

On the far ends of the autistic spectrum we met two totally different kinds of people: the strong minded, rational Asperger and the more dreamy

and playful and cozy hyper empathic. It is important to note, that these prototypes do not really exist. The happy loner and social addict are parts of all of us.

I hope this article showed that NLP derived concepts can shed some more light on the differences between us. This can help to understand ourselves better and to assist those who get stuck with too little or too much empathy.

Baron-Cohen's research over the subsequent 10 years provided much of the evidence for the ToM deficit, culminating in two edited anthologies (Understanding Other Minds, 1993, and 2000). His research group have linked the origins of the ToM deficit to joint attention (Brit J. Dev Psychol, 1987) and showed that absence of joint attention at 18 months is a predictor of later autism (British Journal of Psychiatry, 1992, 1996).[5] Based on these and other findings, he proposed a model of the development of 'mindreading' in his widely cited monograph (Mindblindness, 1995 MIT Press). Baron-Cohen has also conducted brain imaging work examining the autistic brain. These studies highlighted differences between the typical and autistic brain in the orbitofrontal cortex (Brit. J. Psychiatry, 1994) PMID 7866679 and the amygdala (Euro. J. Neuroscience, 1999), the latter leading him to propose the amygdala theory of autism (Neurosci. Behav. Rev. 2000). In 2010, with his former doctoral student Michael Lombardo, they showed that the ventromedial prefrontal cortex does not differentiate self from other in autism and accounts for variation in social deficits.[6] In 2011, with Lombardo, they also showed that the right temporoparietal junction was hypoactive in autism during ToM tasks and also accounted for variation in social deficits.[7]

In the late 1990s Baron-Cohen developed the hypothesis that typical sex differences may provide a neurobiological and psychological understanding of autism (the empathizing–systemizing theory). The theory proposes that autism is an extreme of the male brain (J. Cog. Neurosci, 1997; TICS, 2002). This led to him situating ToM within the broader domain of empathy, and to the development of a new construct (systemizing). The extreme male brain (EMB) theory of autism sees autism as being on a continuum with individual differences in the general population (sex differences). Baron-Cohen proposes that the cause of autism at a biological level may be hyper-masculinization. This hypothesis posits that certain features of autism ('obsessions' and repetitive behaviour, previously regarded as 'purposeless') as being highly purposive, intelligent (hyper-systemizing), and a sign of a different way of thinking. He wrote a popular book on the topic of sex differences and its relationship to autism (The Essential Difference, 2003).

Baron-Cohen launched the Cambridge Longitudinal Foetal Testosterone (FT) Project in the late 1990s, a research program following children of mothers who had amniocentesis. This aimed to study the effects of individual differences in FT on later child development. This is summarised in a technical monograph (Prenatal Testosterone in Mind, 2004 MIT Press). This study revealed that FT is negatively correlated with social and language development, and is positively correlated with attention to detail and a number of autistic traits (Brit. J. Psychology, 2009). His work studying FT led him to test the hyper-masculinization of autism at the psychometric level and in regard to developmental neurobiology (Science, 2005; PLOS Biology, 2011). The role of foetal testosterone in autism remains to be assessed in clinical cases, but gains some support from the recent discovery from Baron-Cohen's lab of androgen-related genes being associated with autistic traits, empathy, and Asperger Syndrome (Autism Research, 2009), and from the finding that a precursor to testosterone (androstenedione) is elevated in autism (Psychoneuroendocrinology, 2011). With Mike Lombardo he conducted the first study in humans of where FT influences grey matter in the brain (J. Neuroscience 2012). He is currently collaborating with the Danish Biobank to test if FT is elevated in people who go on to develop autism.