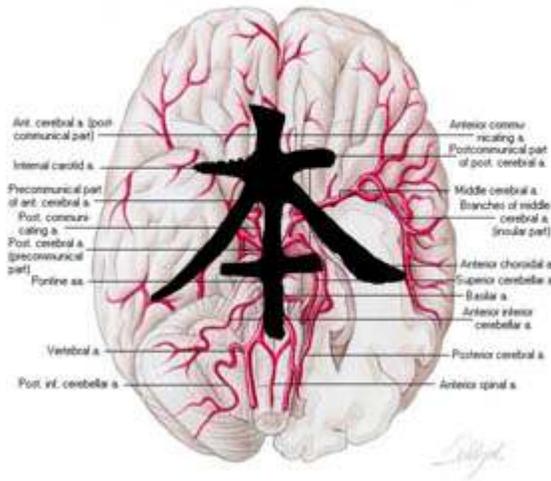


The AM-Node

ARTERIES AT THE BASE OF SKULL (ARTERIAL CIRCLE OF WILLIS AND ITS BRANCHES, BASILAR ARTERY), INTERIOR (BRAIN) VIEW



(adapted from <http://www.nada.kth.se/~asa/Game/Dragons/roots.html>)

The interface between humans and the dragon network is a system of "roots" connecting the nervous system to the genetic messages of the dragons. The roots begin as a diffuse network of changed cells in the body, usually in the gut or lungs, which send chemical signals to each other. After a while, a network of changed neurons begin to develop on the underside of the brain, mainly linking to the olfactory bulbs and hypothalamus, but later the hippocampus and amygdala and eventually penetrating the brainstem and thalamus. Something akin to a second pituitary gland develops around the arteries in the Circle of Willis on the brain underside, and over time the roots extend into the body along the neural pathways.

The root network is sensitive to chemical and genetic signals, and the host will at least at first detect them as strange new smells - smells which can become overpowering, triggering intense emotional states or memory flashbacks.

The root network can do several things. The most important function is to interface the brain with the biological assembler systems in the changed cells. Neural signals can make them produce plasmids, prions and changed cells with new properties. This can then reprogram cells genetically to do nearly anything - produce new chemicals, become new tissues or infect others. Another function is that it can control or change the activity of linked neural areas - the host becomes able to control their biochemistry, bodily state and eventually memory and emotions. This function is really a secondary effect, but usually first detected and can be quite useful.

Infection occurs when the agents released by the dragons enter the body, either breathed or through the mouth. After infection, the roots grow for a few days until they begin to make contact and interact with the host. Usually the first sign is experiences of odd smells, but when the effects become obvious is when the host is involved in a stressful or emotional situation and

the levels of hormones begin to change extremely. The body begins to change towards the ideal self image, and adapts itself to anticipated stressors.

The second stage is more subtle, but begins when the pseudopituitary develops. Now the host can send as well as receive signals, and becomes noticeable by other hosts by their smell. The body changes become more pronounced, and can become more and more drastic. They slowly gain an intuitive sense of their bodies and how they work, based on what the roots learn.

There is a quite real risk for cancer and autoimmune reactions during this stage. Many hosts experience a crisis lasting a few days as the roots interact with the immune system and adapt to it/adapt it. If this goes badly, the autoimmune reaction can kill them with brain hemorrhages. Also, opportunistic cancers tend to develop at this stage. Fully developed hosts can adapt themselves arbitrarily. The process takes a few hours to a few days, and as they become more skilled they can do more drastic changes. Not only that, but they can affect others too. This is due to the hidden "backdoors" in biology originating four billion years ago when the dragons created it - their signals will create changes much more quickly and profoundly than any human genetic modifications. Not only that, but as the roots start to act as senders and receivers, information from the lithosphere will start to flow through them enabling the knowledge of the dragons to be applied practically.

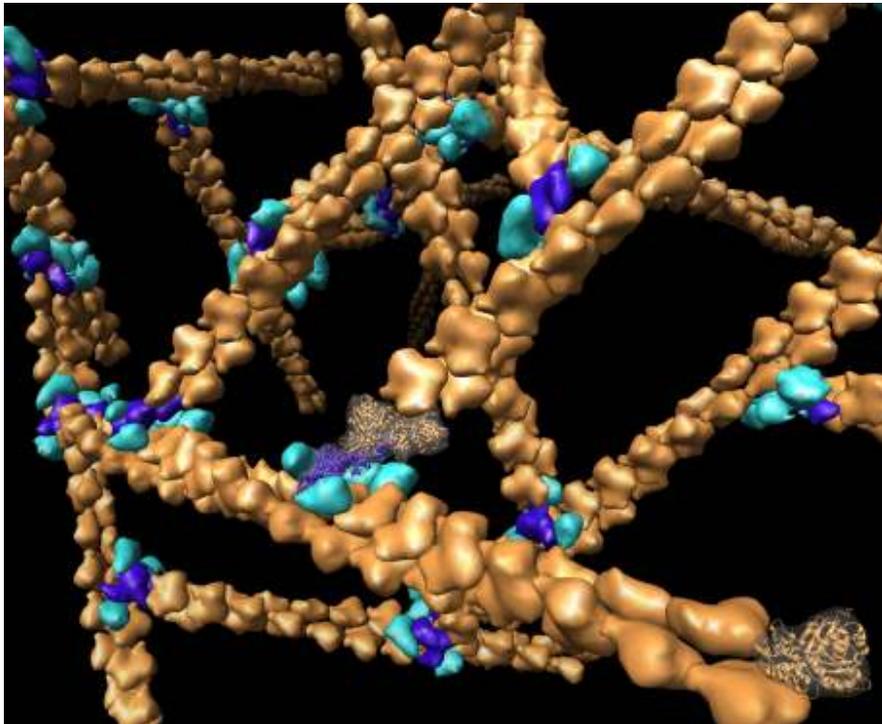


Figure 1 (Tom Goddard)

The more a host uses the roots, the stronger and the more interlinked with the rest of the brain they become. However, this makes them more and more sensitive to the large-scale dragon processing going on around them. At first the effect is just vague, confusing dreams. Gradually they become more clear and more bizarre - endless slow abstract jumbles of emotions, smells,

random memories and sensations without name going on and on. The more the roots embed themselves, the more intense these slow dreams become, and they begin to intrude on waking consciousness too. When encountering whiffs of lithosphere data they can sink into a trance, and when groups of strongly affected hosts meet they can induce trance in each other. Dragon zones are intense, and only very well-trained hosts can avoid going into a trance or even being taken over by the dragons.

If the hosts cannot handle to roots, they will eventually become vegetables, eternally sending and receiving chemical signals, avatars of the lithosphere. At best, they may retain a rudimentary zombie-like daily routine. At worst they will lie comatose, with growing tendrils extending into the air and ground sucking up information and releasing strong genetic messages. The trick is to keep the roots under control, a tool for the mammalian motivations needed for the body to survive and the person to prosper. Another risk for the hosts is that they change their bodies too much, either killing themselves with inadvisable changes or becoming alien creatures. A third risk, which is maybe the most dangerous, is the risk for serious mental disorders due to hormone imbalances, personality changes, modifications of brain chemistry and the social and psychological effects of their hostship.

A fully developed host has superhuman potential. There is no limit to how they can change their own or others' biological structure, and given the computational power of the dragons they could do anything. At the same time they have clear limitations - they are still mortal, doesn't know anything about their powers and are sensitive to dragon signals which may become more and more erratic as the network decays.

Rules

The abilities granted by the roots are treated as skills. The level corresponds to the amount of skill in using the ability the host has developed. They are grouped as a sequence, with the basic ability of sensing chemical messages as the first, followed by autonomous control, self modification, biomanipulation and communication. The abilities slowly increase on their own, but if the host ignores them the growth is very slow. Once an ability has increased to two dots, either through training or a natural increase during a few weeks, the host gains the next ability.

Sensing



Figure 2 (f. aria: *Lapidaria margarethae*)

The ability to detect chemical messages. The host will experience them as strange odours, completely unlike anything experienced before and often with intense emotional overtones or arousing old memories. This is caused by the infiltration of roots into the olfactory bulbs, amygdala and hippocampus.

Signals from the lithosphere can be detected but usually not understood, except for some. One important class is warning signals: when geological activity is imminent, alarm plasmids are diffused giving some warning of impending earthquakes or volcanism. Some areas with crashed network will have a highly distressing odor.

* The host can notice plasmid and prion messages as smells, but not understand them.

** The host can distinguish different messages. Other hosts, the environment and modified lifeforms become apparent. The host can recognize the DNA of different species, and distinguish people by smell.

*** The host can follow plasmid scent trails and (with some difficulty) normal scent trails. The emotional and health state of others can be felt. The host can learn to recognize different genes by smell. By ingesting part of an organism its genes become available for biomodification.

**** The host can understand the meaning of the messages if they have the ability involved. The host has an extremely sensitive sense of smell, and can detect people, objects and chemicals from their emissions, essentially gaining a kind of awareness of what exists in their surroundings.

**** The host intuitively models the smell-environment, building up a kind of map together with the other senses. Even unknown smells can be interpreted subconsciously. For all practical purposes, they are totally aware of things going on around themselves (as well as occurred a while ago) as if they were seeing it directly. Sensing leads to autonomous control.

System: Usually roll Perception + Sensing to detect something. Decoding messages or genes is based on Intelligence + Sensing.

Autonomous Control

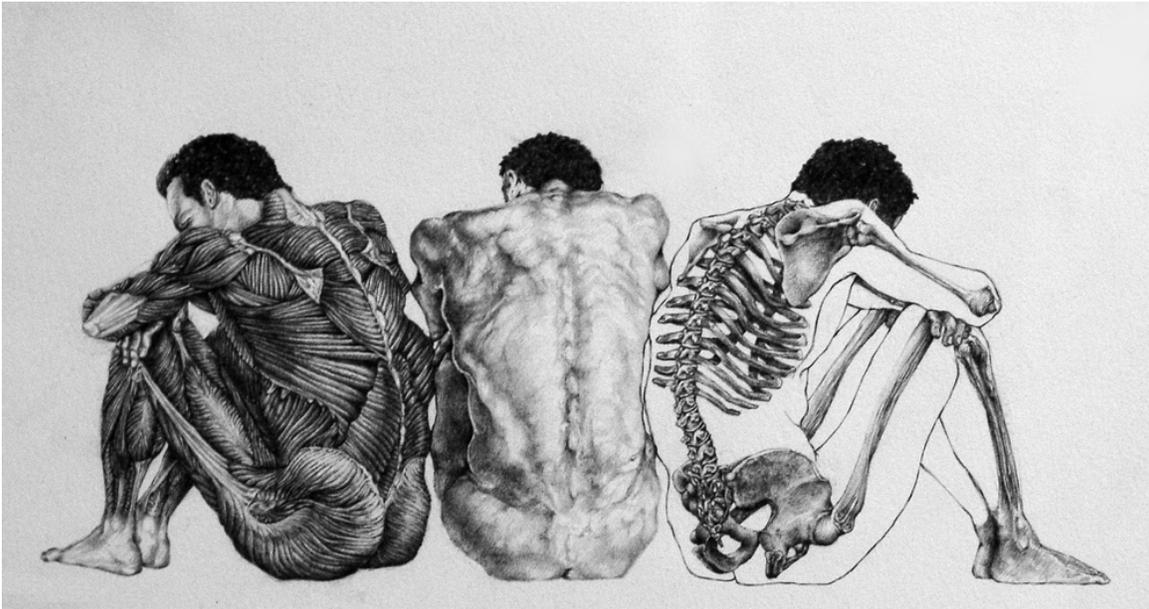


Figure 3 (Chow Martin)

The ability of the hosts to control their hormones and body image, as well as subtle influences on attention, arousal and metabolism. This is caused by the spread of roots into the brainstem, hypothalamus and pituitary gland. The effect is that the host will gradually change their body to become like their ideal self-image. Each level adds one dot to an attribute, according to the priorities the host subconsciously holds. A person with a strong desire to become beautiful will improve his appearance, a person with feelings of physical insecurity will develop greater muscles. Later on it becomes possible to redistribute the attributes (the process takes a few days). Autonomous control leads to self modification.

* The host can release hormones at will.

** Sleep, hunger, thirst and other drives are totally manageable.

*** Attention can be focused totally. Attributes can be redistributed.

**** Pain control. Sleep can be avoided by sleeping with one hemisphere at a time like dolphins.

***** The person is a Yoga master, with total control over bodily functions. The autonomous nervous system can be controlled just as if it was voluntary muscles.

System: In most cases, use Stamina + Autonomous Control.

Self Modification



Figure 4: (Playstation)

At this point the pseudopituitary gland has developed, and the roots can secrete plasmids, prions and subviral vectors to modify or regulate the genes in host cells. It becomes possible to perform "gene therapy" on oneself, redesigning tissues and organs. A network of root cells develops, giving the host an intuitive sense of their body. Using Sensing and Communication, genes can be taken up and integrated into the genome.

* Simple chemical changes, like secreting drugs or hormones, cryoprotectants, changing basic metabolism or modifying the immune response.

** Tissue changes, new small organs (like making saliva poisonous). Appearance can be modified slightly (hair color, skin tone, eye color). Ageing can be stopped.

*** Organ changes. Appearance can be modified reasonably well.

**** Morphological changes. Overall build can be changed.

***** Total modification. The hosts can redesign themselves to become nearly anything. Self modification leads to biomanipulation and communication.

System: Usually Intelligence + Self Modification.

Biomanipulation



Figure 5: (Caro's lines)

The host can now secrete vectors from their body, affecting other lifeforms. The transformation takes a few hours to days and requires an exchange of plasmids through bodily fluids. This is actually an unexpected side effect of the root system; the messenger plasmids and proteins used by the lithophiles have actually become part of surface biology too. By now the host is easily detectable by people with Sensing. The levels are the same as for Self Modification.

* Insert a tracer plasmid, making it possible to easily follow the individual. Enhance growth.

** Induce cancer or other serious diseases.

*** Create plasmid link: signals can be sent and received from the individual, enabling further reprogramming.

**** Make the plasmids infectious, able to spread from organism to organism doing whatever they are intended to do.

***** Create a root system.

System: Intelligence + Biompanipulation

Communication



Figure 6 (Maurice Mikkers, Sharing thoughts)

The host can now transmit messages in plasmid form to others, through the air, handshakes or other ways. This power is usually subconsciously active, making the host very easily detectable by people with Sensing. When trying to communicate with someone with Sensing, use the lowest score as the limit on the communication.

* Basic emotional concepts ("fear!"). Creating moods in other hosts.

** Simple messages ("come here"). Simple subliminal commands.

*** Everyday language ("look out for Wang"). Suggesting thoughts.

**** Advanced messages ("We must go to New York to fetch more sampling equipment, the present economic situation makes it necessary"). Suggesting actions in other hosts.

**** Complex abstractions. Mind control of other hosts. The host can communicate with the lithosphere by downloading requests into it and then wait for responses. Practically all human communication is utterly ignored and the dragon world is impossible to understand, but things dealing with plasmid signals, genetic switching and ecoprogramming can be communicated. This makes a person with level 5 Communication extremely powerful - they can get dragon processing to figure out how to do biomodification for them. The drawback is speed: the dragons take plenty of time to answer, usually on the order of weeks or more.

System: Intelligence + Communication

Other Effects

Crashed Land

Crashed land has been affected by the dissolution of the dragon network or the Blight. The effects are noticeable to anybody with Sensing as a noticeable absence of signals and a nearly painful feeling of dread caused by the instinctive withdrawal mechanisms of the roots inherited from the dragons. Crashed land is not dangerous in itself, but distressing (especially the first time encountered).

Dragon Trance

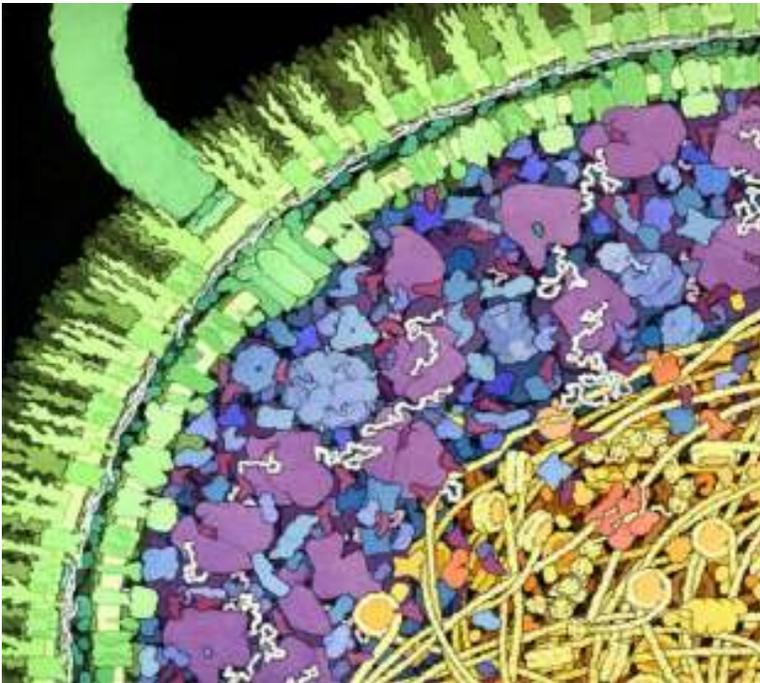


Figure 7 (Julia Rrap)

Whenever a host encounters a strong new genetic message signal there is a risk that the roots take over in order to process and respond to it. This mainly occurs when encountering fairly pure messages, very new or unusual messages (such as when travelling to a distant place), when meeting other hosts and when using Sensing and Communication too much. The host becomes distracted by the smell, and ordinary consciousness fades into a trance where only the messages (usually incomprehensible) exist. Since the roots respond by sending back a strong message, other hosts in the vicinity may be dragged along. Large groups of hosts are especially vulnerable.

The host needs to succeed with a Willpower roll against a difficulty equal to Sensing modified by the strength of the signal (normal land environments -2, a fresh whiff +0, a sending host +2), +1 for every 4 dots of root-related abilities other than Sensing, +1 if the host is employing other trance-like methods such as meditating and -1 or more if the host was aware of the risk. If the host fails he or she goes into a trance for a while. A single success implies a distracted state (+1 or more on difficulties) and more successes indicates that the host can handle the signal well. Botches may lead to the host subconsciously using self modification to create better sensing organs, turning plant- or insect-like with feelers, tendrils and mucous surfaces.

Dragon Possession



When a person has become sufficiently well attuned to the roots, the programs of the dragons will be able to influence drives and thinking. The Dragons had not planned any special programs, the roots were merely a desperate quick fix done with no knowledge of what surface entities were like. But when the host experiences many dragon signals and the roots are able to draw upon the thinking of the host, programs will begin to develop based on the overlap.

The first programs are simple survival drives adopted from the host. If the brain is damaged, the roots may take over some of the low-level functions.

The drive to communicate is second. The roots may affect behavior so that the host will communicate more efficiently with the dragons, by bathing in rivers or the sea, climbing into caves or mines, eating mud or inducing dragon trance in others.

The drive to spread the roots is third. This requires the ability to create the complex root package, but once this can be done the host will subconsciously feel the drive to spread the ability to more people.

Today Dragon Zones can deliberately craft programs that are even more complex and mysterious. This is how the Voices function: they are partially protected/controlled by programs, giving them a place in the Dracosphere.

Accidental Changes



Figure 8 (Shu Konishi)

When hosts lose control over their bodies, the bodies begin to change in unusual ways. Some possibilities are:

- Growth of previously Sensed DNA - the host changes partially to fit DNA that has been sensed. It could be growing hair similar to a friend, developing the same face or having random body parts from animals or plants sprouting in odd places.
- Tumors - random changes induce bizarre tumors in the body. While managed by the roots (hopefully) they can hurt or impair the host.
- Development of antennas or other tools for more efficient communication with the surroundings. This may be discreet or the total transformation into something plant-, insect- or mollusc-like.

- Adaptation - the body may adapt to fit the environment. In strong sunlight the skin may turn black and hard, in cold hair production may run amok, in a threatening situation the body may begin to produce poisons.

Hosts often meet a bad end when they manipulate their bodies, since they can too easily disrupt key systems. A surprising number of hosts manage to stop their hearts, burst their blood vessels or damage their brains. This is why these days newly made hosts are carefully initiated.

As Hosts manipulate their bodies, not all of their cells follow the plasmid programs perfectly. This produces small amount of "misprogrammed" tissue that doesn't quite fit into the new body. Over time, as the body is modified more and more, the amount of misprogrammed tissue grows. At first this might cause "neogenetic immune dilution syndrome", NIDS - there are so many genetic variants in the body that the immune system either reacts with autoimmune effects or by ignoring them, increasing the chances of catching illnesses or being affected by random plasmids. NIDS can be treated by carefully purifying the body, a process that has been developed over the last decades within the Host community. Different hosts use different methods, but the goal is to get rid of the "rust".

Malignant neogenetic transformation: Over time the misprogrammed cells may become further mutated, often when in contact with outside plasmids. This makes them start sending their own plasmid messages, subverting tissues. In most cases this is a minor issue not unlike the growth of benign tumours. They can cause teratomas that resist corrective plasmid commands, as well as enhance normal cancer growth to make it hard to suppress. MNT occurs when these growths begin to aggressively transform themselves and their surroundings according to random neogenetic programs. At this point the host body becomes a battlefield for contradictory plasmid messages, breaking down their control. There is serious risk for organ failure, autoimmune reactions, deadly transformations and plain tissue death.

By 2100, the oldest known hosts have been active for 60 years. Few have avoided NIDS, and it appears that MNT is an increasing risk with age unless a strict purification program is used.