

# r0oT

an organism to achieve global coordination  
and true civilization. (Manifestum v1.4)

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Time has arrived for civil society to start *real* global changes. Governments, global media, big corporations... are just trying to maintain their current and unsustainable status quo in which a ridiculous minority [2] benefits from having the rest of the natural and human world under *inadmissible* conditions [3, 4]. We cannot trust them anymore. We need to *take over*. The ominous prospect of the climate crisis urges us to start acting now. This is *no utopia*. It is an imperative and urgent need. The whole ecosystem in general and humanity in particular need a wise plan, a smooth renaissance to peacefully build a sustainable, fair and life-friendly future [5]. This text introduces r0oT, a nonprofit global network conceived to allow people to be strongly coordinated. A coordinated society would be properly informed and would start acting, for once, in its own favor, for its own survival. This necessarily implies acting as well in favor of our natural environment, to which we belong and on which we all *depend*. If you really care about the world you live in, about yourself and your family in the long term, about human civilization, about our fellow creatures living on Earth... just read this, study it and join. It's not that you are welcome here: you are simply *indispensable*. Give it a chance. It could be the last.

## prolove

What does an astronaut see when leaving the atmosphere? What is (s)he able to contemplate when the distant perspective allows her/him a glimpse of the whole planet? Does (s)he see flags and frontiers? Not a single one! Does s(he) recognize any of the details of a *political map*? Not at all! It is the *physical* one which really *maps* reality. From the orbit perspective we can see the oceans, the poles, land, clouds and the spherical surface that should limit our only reasonable nation: the whole Earth. I ask you to elevate your perspective to such a height and don't lose it anymore. Why? Because the beautiful picture

you see from it, when properly analyzed, appears sick and threatened by our pollution. Among all the many problems arising from a rigorous and scientific analysis there is the excess of Carbon dioxide, CO<sub>2</sub> [6], which is already producing a global warming that will change everything in a near future, even if we would take immediate action. The Paris Agreement [7], a commitment signed by many countries stating that we must hold 'the increase in the global average temperature to well below 2°C above pre-industrial levels', will not be enough [8]. I don't think we should put our trust into what some people from the governments say. I think we should all put our trust in

flags, nations and governments to a halt. The perspectives they provide are too mediocre, too small, too superficial. From the perspective of countries we are not going anywhere. We all need to ascend to the astronaut view and start to see the world through the physical map. We are too similar, too family related to be separated by artificial lines that only serve to the interests of a few people. Those unreal lines are blocking us from evolving to a true civilization, and from acting against the imminents dangers that we face. Dear reader, unload all your national feelings, at least for a while, and let your mind lift towards an astronaut perspective. See by yourself how nations are a lie, how political maps are an illusion, how capitalism is a disagreeable joke. What is real is the natural world. Nature is not something pheripheral that you find when travelling out from the city (such is the evil in the term 'environment'). Nature is not just a private scientific journal oriented to business, where many scientists fight hard to publish knowledge acquired usually through public money. A knowledge that ends under a further payment lock [9]. No, Nature is *everything* and that includes you, so no one should hold the exclusive position of speaking in her name. Nature speaks herself and not only through our very imperfect and inconstant voices. Absolute truths about her only come through infinite times.

You may think that the vision presented here is somewhat 'hippie' and 'naive', with the so called 'world citizen' flavour and 'Gaia' mysticism. You may say that it is better to be realistic and avoid day-dreaming about utopias that don't lead anywhere. But... what you may *not* be thinking is that all the concepts and perspectives that allow a better world, no matter how realistic they can be, have been degraded by the powers in charge of the world, in purpose, to make you laugh of those paths that could save you. Through media, school and in general through the Zeitgeist of your environment [10], you may have learned to reject all that has a 'green' taste behind it, because 'greens' are just 'utopians' detached from the 'real' political world. You may have been manipulated to think that economy is the real game, while ecology is for a few mystics. Much in the same way as astronomy is a serious science while astrology is almost a joke for the empirical mind.

But there is some subtle terminology crossing here that could have been misslead you. Astronomy is a serious and scientific discipline. *Ecology is serious and scientific too*. Astrology, at least the horoscope astrology in the newspapers today, is a pseudoscience based on non-empirical grounds, subject to personal believe. Economy, at least the economy ruling the world today, is as well a pseudoscience, based on the non-empirical grounds of never-ending growth on a limited environment, subject to personal believe in the free market, volatile speculation and slaving debt. The astrologic horoscope simply tells you what you want to listen, and so does global economy. Of course, the powers-that-be, through media, want you to think that they are the serious, the scientific, and they surely buy many scientific voices to support them while they silent others, usually through not funding their research. They want you to believe that ecology is a utopia, a place only possible in dreams. But, is there a more blatant utopia than the lie of steady wealth growth for everybody in an exponentially increasing population living in a world with very limited resources? Come one, wake up. You may not be green because you do not have chloroplasts on your cells, but you dramatically depend on these little green structures because they are the producers of the oxygen that you constantly breath. Let's do a quick experiment. Hold your breath for at least 20-30 seconds or even more if you can. Begin now, and keep reading! During this time think that the green and tiny organelles are allowing you to breath for free, with no debt, no taxes, no questions. That each oxygen molecule you need is processed by one of them. That many of the CO<sub>2</sub> molecules that you exhale are captured by them. Hold your breath until you cannot resist it more. Come on, a bit more. Stop here until you cannot resist it more. Already suffocating? OK, exhale and then, inspire deeply, feel the new air coming into your lungs and giving you life again. Shouldn't you say thank you to the Earth for this oxygen, for this somewhat clean air? Feel how strongly you depend on it, and consider how strongly we are damaging it. Is this air compartmentalized by the political lines on the map? It is absurd to even say it, isn't it? As absurd as admitting a compartmentalized world in any aspect, indeed. Think now

that the ones in charge of the economy are not in the mood of changing their plans on keeping the pollution going through. Is this attitude serious and scientific? Of course not. Don't you feel more green now? At least green of fear? It is true that many hippies, mystical people, green eco-activists are not always totally rigorous in their acts, their grounds may not be scientific, they can even make mistakes and act against the Earth when trying to defend it, but so what? At least they have good feelings towards her, and this is way more scientific than some Nobel laureates talking in favor of a private and harmful corporation like Syngenta, owner of the Golden Rice's patent, while denigrating NGO's like Greenpeace [11]. Genetically modified organisms (GMO's) may not be unsafe for the health of an individual, but what about the health of Gaia? Are monocrops and patents good for her and for humanity as a whole? Not even close. Science is the understanding of Nature and let me repeat it: no one has the exclusive right to speak in her name, not even Nobel laureates, because such speakers may have personal interests that do not align with Gaia or simply may lack a perspective beyond their ambitions to publish and pursue an ambitious scientific career. Someone who studies Nature without loving her may be a genius, but an idiot at the same time. However, a lover of Nature, even if ignorant, mystical or naive, can always bring a practical benefit for her.

You may think now that there is a practical problem: how to defeat the powers-that-be? Even if many of us have good will to act, what can we do? This is the muscle/bone paradigm. If we have the will to do something we have the muscle, but what can a muscle do without a skeleton to give it structure and direction? Not much. Maybe have clumsy spasms as a poor contracting piece of meat. That is why we need a structure to give bone and skeleton, lever and direction, coordination and purposeful motion to our well intended but not enough muscular will. This text is an introduction to such a skeleton: r0oT. In it I will briefly explain the motivations and the global mechanisms of its structure. But it is not an easy text to follow. On the contrary, it contains many details, although by no means all of them, and it demands the reader to actively work on them. Better than an introduction, it is a germ, a call to encourage cre-

ative and brave people to join and, together, produce more pedagogical and visual material in the future in order to reach the maximum number of people. So I don't apologize for the lack of pedagogy here, because more pedagogic introductions will come later. What I am trying here is to provoke you, to trigger the action that is now sleeping under your consciousness. Sometimes, through your reading, you will to literally have to draw your own pictures. Don't be afraid of that! I have not included my own drawings because I want you to be actively involved while you read. The depth of understanding always grows exponentially, (or even better, factorially), when you work out the details on your own. The r0oT network is for everyone, but perhaps the first steps must be performed by people who are not lazy and not afraid of taking a piece of paper and a pencil (or go near to a blackboard) and figure out the graphical picture that is whispered through a somewhat demanding text. But one step at a time: If you get stuck at one section during a first reading feel free to jump to the next one. You can go back later to the most difficult parts. It would be reasonable to begin with an overall reading to capture the global ideas, to see if you consider that the project deserves further effort and time investment, and then, if encouraged, to perform a second analysis to get through the most technical sections. If you don't manage to understand all the technical details after several attempts but you still want to participate in the first stage of r0oT, please don't feel discouraged. The most probable reason is that they are not explained well and long enough. Don't base your joining/not-joining decision on this. Once you enter the network you will have personal guiding, better explanations and more time to get used to some technicalities. If I have written many complicated explanations here it's because many people need (and like) to see some details to believe that this is a serious project. If you prefer to focus on the main ideas instead and consider the complicated numbers and connections as secondary, feel free to skip them for now. In fact, we need people of all kinds. Some will prefer to work on details and others on more generic aspects. All approaches are welcome. Maybe you feel that this project is not for you right now, at this early stage. Then, please consider joining

after some time, seeking more visual and pedagogical introductions that will appear after some time. Maybe you know people that would be interested in this project right now so you could send this text to them. Don't hesitate to share this document everywhere if you think that this project deserves a chance. I deeply believe that behind the details, the formal approach and the length of the text there is an extreme simplicity in all this: to be organized to defend our true interests. There is no reason to be afraid of being the first to join. Some people have already told me that even if they like the project they don't feel strong enough to be the firsts joining. Well, if we all avoid the responsibility of being the first members, then the project will simply not start! If you are wondering whether you are suitable to be part of the initial crew just base your decision on **love**. This text is a call to join a network in which love is the main player. Love is non-negotiable in r0oT. Love is the only strict requirement to join and its ultimate goal. It should be your main reason to participate in it. Do you meet this special requirement? I am sure you do! Love...But...to what or who? What do I mean by love here? For now, let me just say that love is our muscle and r0oT is the necessary set of bones. Let's begin.

## organisms

Proteins, DNA and many other molecules and chemical substances can be coordinated in such a way that they form a new supra organism we call cell [12]. This is almost a miraculous *leap* of organizational level, because if we took each building block separately we wouldn't find hints for such a leap in them. In order to put a strong word to describe such amazing achievement we say that a cell is *alive*, even though we haven't been able to reach an agreement in defining what exactly life is [13]. We also say that the cell has *agency*: it performs actions, takes decisions, reacts upon external and internal situations...But again, no one has been able to explain from fundamentals what agency is and how it emerges [14, 15]. Nevertheless, all of us accept life and agency as useful *metaphors*. They are handy, fancy terms and point

to a giant leaps in awesomeness, so we can see magic, spiritualism or even divinity in them if we want. The same happens when many cells coordinate themselves to form a second giant leap of organization: the *multicellular organism*. Cells can also live alone, or in colonies, a more loose form of organism, but it is in multicellular mode when we find again a bold emergence of agency. The result is so great that defies all explanation. While many scientists try hard to uncover the path of such leaps, most people simply accept the agency metaphor, this time adding other terms like consciousness, soul or whatever we want to assign to the awesome result of cell coordination. Even if one day science would be able to recover the path from passive to active, from mechanics to consciousness, these leaps are so giant that such explanations will not be handy, and regular people, even scientists in their practical life, will keep using the 'magic' terms: agency, life, will, consciousness, soul...But even though the agencies of a cell or an animal can be seen as a unique feature, they are in fact a composite of the influences of each single gene in the world, not only from the ones carried in their bodies [16]. The behaviour of a mouse, for example, can be influenced by the genes of a parasite or any other organism. So it is not trivial that an organism, even if exhibits a single agency, will use such agency *to its own interest*. The organism can be manipulated by other organisms, sometimes in a symbiotic manner, and others to its own detriment. This will be crucial to the r0oT hypothesis and is also crucial in how you have a perception of yourself. Even if you feel a 'you' inside you, and it is this 'you' who performs 'your' actions, who is in fact benefiting from such actions? Yourself? Are you sure? Remember that each idea soaring in your mind or through media, a meme, is as powerful in exercising manipulation on organisms as genes are. It is ironic, but great coordination, leading to the emergence of great leaps such life, agency, consciousness, soul does not lead to the conclusion that the actions of such life, agency, consciousness or soul are for the benefit of themselves. In fact, it is extremely easy to manipulate them to act against their own interest. Nature is full of such examples.

## Gaia

What if there was a third giant leap? Could you guess what it could be? Multicellular organisms interact as well, between each other and with the inorganic world in which we are immersed. We all form a huge network that we can call environment, even though it does not simply surrounds us. We can call it ecosystem, even though it is not just a subsystem but *the* system. Or we could just call it *Gaia*. Professor James Lovelock proposed some decades ago [17] that the whole ecosystem can be seen as an organism with agency features like the homeostasis (self-regulation) of temperature, radiation or salinity on the atmosphere, among other properties. The knowledge of such a complex and subtle network of interactions is still quite limited, but there are many hints that point to a real global agent that seems to act to keep physico-chemical variables within life-friendly limits. Gaia has achieved this through almost all her life, and it is remarkable because external conditions have not been constant through Earth's life [18]. Is Gaia a loose organism like a cell colony or a tight one like a multicellular organism? No one knows yet her degree of agency. In fact we don't even know how we could define such a thing. But again, it is handy to have a short name for such a miraculous leap of organization. It is true that from an academic point of view the theory of Gaia still needs serious work. How could such an organism evolve without other organisms competing with it? Under the selfish-gene theory [19] perspective it is difficult to justify a selection at the organism level [16]. What is the role of each species in the Gaia network? Clearly, the proposal of Lovelock, even though appealing, faces big problems from a formal point of view. Problems that may be solved or not [20], but this is not the place to discuss this. What matters here is something beyond academics, although it would be really important to workout the academic result of this. But even if Gaia is today a conjecture, it cannot be doubted that the whole ecosystem has many global mechanisms of homeostasis and thus of protecting life-friendly limits. What is also sure is that our ignorance from the ecosystem as a whole is even greater than the planet itself. And here appears the dilemma: do we spend our time dis-

cussing whether the concept of Gaia is academically suitable or not while the ecosystem is violently degraded to an extreme? Or should we better accept the Gaia metaphor, at least partially, as we do with life and agency, in order to focus on the practical problems, like global warming, that it poses? For example, we cannot explain today concepts as feelings, consciousness or intelligence in purely scientific terms, but we don't postpone the use of such terms to the day we will grasp such knowledge. I think we should do the same with Gaia. Of course, we should devote many efforts to understand her much better, but at the same time we could take advantage of the power of this concept, its usefulness and mightiness, in order to raise global attention on her delicate current state. The concept of Gaia, its possibility, is too great to lack a good name, as is the idea of life itself. Life can be seen as pure mechanics as Gaia can be seen as a complex dynamical system, but you already know what I mean. Great leaps need great names, or at least a name. That is why through this text I will acknowledge Gaia as the name for our whole ecosystem. Academia is a bit slow today in its pursue of knowledge of complex systems because the mathematics needed to describe them are daunting, and because their chaotic behaviour makes impossible any numerical prediction, even with supercomputers. But our reaction to defend Gaia cannot wait for total understanding. Let's not be afraid of being labelled as mystical or slightly unscientific. We already are everytime we speak of soul, or any vitalist-related term like life, or even when you refer to yourself with the simple word 'me'. The most scientific approach in this case is to maximize prudence, and if action can be enhanced through a concept that is still half-defined, let this be. After all, absolute rigor tends to lead to poor solutions in complex systems, while the best choices are reached through a balanced mixture of rigor and somerazy/random/intuitive jumps now and then to overcome barriers. Named after an ancient Greek goddess, Gaia, the mother of all gods, is, very possibly, the supra organism to which we all belong. Gaia is the name for the third great leap of organization level. The fact of using a goddess name does not qualify as a religion. It is, instead, a practical approach to exhibit respect, love and care for

something that transcends us, at least at an organization level. Gaia has been protecting herself for millions of years against the inexorable fate of thermodynamic equilibrium, as all living creatures do, feeding from low entropy sources like the Sun and the Earth's own internal heat. And well, you already know this: we, the *Homo sapiens* species, are just killing her. Or at least forcing her to move to other conditions in which she could (probably) survive in a different form that no one knows but which will surely not be comfortable to us. Neither for the rest of species. This said, when using the expression 'saving Gaia' we are just saying 'convincing her not to shift from her currently friendly (to us) conditions'. Saving Gaia means, among other things, saving us and the rest of most living creatures, which are our true family. And I think that considering the ecosystem as a creature transcending ourselves, with a name of her own, can help to spread the message of the dangers that she is facing. It can also help to reinforce the value of care and respect, which is no small thing. But, if you are a die-hard scientist that will not accept the Gaia metaphor until a full blown theory supports it with perfect rigor, that should not prevent you from participating in r0oT. In the same way that a perspective based on selfish-genes does not prevent you from considering yourself as an organism that deserves to be looked after even if you are sterile from a reproductive point of view. Summarizing, I encourage researches to double the effort to formalize the Gaia theory and at the same time I encourage everyone to use the Gaia metaphor, at least as a unifying mechanism to face together the hazards that, don't forget that, we have created.

## **cancer**

Cancer can be abstractly defined as uncontrolled individual growth producing a destructive behavior towards the global organism. Cancer can be seen as a rebellion from the global tyranny that leads to the destruction of all, even the rebels themselves. There is, however, no moral in it, because there are no absolute morals but simply moral perspectives [21]. A virus is good for itself and bad for the host. A cancerous cell

is bad for the organism and good for itself, at least in the short-term. There is no absolute good and bad, only more or less persistence in time and more or less power while such persistence lasts. Coordination is what allows to persist longer in time, sometimes at the expense of less individual power. We, the *Homo sapiens*, are acting in a cancerous way from the perspective of Gaia. We grow without control. We harm her everywhere and in many ways. We are rebels that don't respect the main organism. We act against her mechanisms and limits, running the path of killing her and ourselves in the process, or at least in the road to awake her destructive (for us) and healing (for her) powers. In fact, Gaia was born long before we did, so she doesn't need us at all, even though we are one of her creations, in the same way that cancerous cells are our own cells too. As I have already said before, Gaia could cure herself from us by moving towards different climate conditions in which she could keep living through the interaction network of the organisms that could survive the shift. She could even go back to her currently pleasant climate state after some long recover time. No one really knows. In fact, no one has the slightest idea of how close in time or how violent could be such deadly shift. We don't even know how robust are her homeostatic powers or where are her points of no return. Our knowledge of it, as Lovelock says, is that of a XIXth century physician of the human body, incomplete but enough to tell when things start malfunctioning. However, we know very well how wildly unpredictable are nonlinear complex systems, and be sure that Gaia is as complex and nonlinear as a system can be. Having said this, should humanity start to worry about expanding its life-span as a civilization or should we keep living with our current cancerous, *carpe-diem* style, without worrying about future time at all? There is no absolute answer for that. It depends on your moral perspective and no perspective is better than others in absolute terms. To some people, worrying about the future could be a bad idea because more coordination and more ahead-of-time planning usually implies a more ascetic and material renouncing life style. My own perspective choice is to care about the future, even beyond my own life, to care about civilization and about the lives of all living creatures

with no exception. I choose to take care about Gaia in her friendly form, but there is no rational path to convince you on this. You have the (rational, but not reasonable) legitimacy to choose to be destructive. But as we already know from history, morals are regulated by the numbers and forces of their carriers. What I am trying here through this project is to call for all people sharing my vision of loving, respecting and caring about Gaia and to fight for it until it becomes the dominant perspective.

## Homo sapiens

We, the self-acclaimed culprit of evolution, are in fact elevating the probability of a total involution to a value close to 1. As individuals, when we are in our teens, we see ourselves as immortals (at least with death very far on the horizon), powerful, owners of the future... During these years our attitude peaks in stupidity, disrespect, destructiveness and self-destructiveness as well. We are too blinded by our hormones to see what's going on. Later, when hormone levels decrease, at least in some cases, we start to appreciate the effect of our actions in ourselves and in others, we start to see death as a real thing, and with the consciousness of death comes maturity. Both concepts may be exact equivalents. As a species, the Homo sapiens community did a very fast growth in size and capabilities, so it entered the puberty, and as a teenager has played for a couple of centuries with an extreme, arrogant and plainly selfish attitude. I assume that is the way it had to be, with death (here extinction) being a thing not to be seriously considered, with such new powers and with an environment (Gaia) so capable of accepting damage and humiliation that there was almost no visible (to us) feedback of it to learn from. Like our real parents, mother Gaia had a lot of patience and resources to cope with her teen ape babies. But now it's over. We have grown too much, too powerful and we have made our mother, Gaia, a poor old woman weakened by our damage. As a species, we are right now around our middle twenties, starting to see that we cannot keep behaving like this. Death is in sight, the effects of our irresponsible attitude are now visi-

ble, our mother has reached her nurturing and feeding limits. Homo sapiens is starting to accept, to swallow the crude fact that the feast is over, that our beloved teenager stage has ended. We now begin to face species maturity. And it can be hard to accept it.

## capitalism

Capitalism is, in short, and continuing the previous section metaphor, the non-stop party in which we, as teenagers, have been for too long. In this party, while some danced inside, most starved outside and Gaia, our too patient mother, suffered a great deal. Now many people are starting to leave this party and watching the horror that lies out there. They cry, they go back to the dancing floor and try to convince the rest to leave. But there are two problems. 1: the party is too addicting, too pleasuring and it is psychologically easier to keep dancing denying what is outside. And 2: the organizers of this party don't want and won't allow it to stop. It is just too lucrative to end it. They have their own VIP lounge in which everything is extremely pleasing and luxurious, so denial is, reasonably, even bigger. They are the true junkies of all this, addicted to luxury and money, the ultimate design drugs of such a deadly feast. These organizers have decided to manipulate media to hide how the world outside this capitalist-disco is. They also lobby almost all governments to work in their interest. The situation is that mostly all people in the first-world dance-floor are at the same time enjoying the big party and trapped inside it. Trapped by a manipulation that goes from media to education, from social network alienation to brainwashing advertising. The big voices of science, who should be exemplary in their rigor and independent thinking, who should be the firsts observers of Gaia declining state, are also subjected to high pressure, and those who speak against the party are easily cut on funds and muted [5]. My question is: are we going to perish as a kamikaze late teenager, burning the world along it? The probability of this happening is alarmingly increasing, but there is a way out of this, and it requires all people already out from the party's

dream to join and act together.

## r0oT

Gaia the Greek Goddess (GGG) was the personification of Earth, the ancestral mother of all life. She created Uranus, another god, and gave birth to the great titans, among others. However, Gaia the Lovelock Hypothesis (GLH), is completely alone. What if the big tumor called humanity could reshape itself into an Olympian being, a god or a titan that could live with(in) Gaia? This is what this text is aimed for: all humans convinced on the necessity of a global change in favor of Gaia must take this chance and build together a coordination network that in the future, if successful, will acquire organism properties like will or agency. Its mission is two-fold: to protect Gaia in her current life-friendly state and to make of humanity something truly great, a true civilization. We could at the same time expand our life expectancy as a species and expand our amazing creation capabilities. Right now, Earth's surface is dominated by governments, corporations, media... and they are not working in favor of Gaia. In fact, they are working against her, consciously or not. So our new organism has its place underground. Its growth will have an architecture similar to the roots of a tree. Its name is r0oT. Its target, to become r0oT@humanity.

## game theory

Game theory is a mathematical framework which is frequently used to model societies with simplified interactions but with the amazing capability of describing pretty realistic scenarios. It's useful to describe economic, biological, political systems among others [19]. Classical game theory, with its typical doves vs hawks model, is able to explain at first order what happens in the global capitalist society. Let me briefly describe this famous game: Doves (not real doves but just the players of the game representing here nice and usually poor people) are willing to cooperate, they don't fight each other and if they are attacked they don't fight back. Hawks (not real

hawks but players representing here those people in charge of the world powers) are the opposite, they fight easily and find no resistance unless confronted by another hawk. Doves want a peaceful community and care about others while hawks have more material, immediate and profitable plans. The optimal global situation, under the dove perspective, is an all-dove ensemble, but such scenario is vulnerable and not stable. If all are doves, any individual that turns into hawk (we all are potential hawks) will rapidly develop above the others, and at the expense of others. If there are too many hawks the system is also unstable because they begin to confront each other too frequently. The equilibrium, called Nash equilibrium, is a minority of hawks and a majority of doves, but with hawks, being the strong players, in charge of the game. Does this sound familiar to you? Is there a way out of this dynamics? I think not without introducing a third type of player: magpies (not real magpies, but new players representing those people joining r0oT). While dovish players are quite altruistic and cooperate for a better world (better for them) in a peaceful and somewhat dumb way, magpies coordinate themselves to actively fight any danger from and to their society. Magpies will care about others because they know that they need the world in a good condition if they want to be well too. Magpies are clever and don't hesitate to confront hawks if necessary. But magpies are not hawks. Magpies' moral is the same as doves' moral, but their methods are different. Don't take all this literally because real doves, real hawks and real magpies are way more complex. In the theoretical game, however, we can define magpies, doves and hawks as we desire. The main point here is that you, the future r0oT player, need to convert yourself into a magpie player and transform your passive (dovish) cooperativeness into active coordinability. Hawks will always exist, as virus and parasites are always present inside multicellular organisms, but they will be kept at bay if magpies do their work. The problem with the dovish attitude is too simple: uncoordinated cooperativeness. A virtue, but a weak one. If they would sum their forces, or even do synergy with them, resulting in something greater than the sum, they would overpower hawks by a great extent. Hawks have been taking advantage



of solitary, cooperating and peaceful doves. Now with the appearance of magpies they have good reasons to worry because magpies will have coordinated cooperativeness. If you take now the rules of the game, where doves don't fight, and say that every time that a hawk confronts a dove or a magpie, all magpies nearby will come and attack the hawk back, the result is a totally different one. Of course, you may answer that hawks can coordinate themselves too, so at the end you may have a confrontation between a supra-hawk and a supra-magpie. Very well, but who would win such a battle in which numbers dominate? The supra-magpie, of course. That is why hawks want a loose society, with non-coordinated individuals, because they, alone or together, don't stand a single chance against a structured society. Of course, if magpies succeed in forming this structure, the hawks game will shift to a more subtle world, the world of manipulation in which they will try to infiltrate r0oT and make the whole system to work to their benefit. We will need to avoid such danger with a great effort, to be discussed later. As a side note, I have used the term magpie-player here because I have personally watched many times groups of magpies (many of them, not just pairs) defending their territory against real hawks. True that many people hate magpies, but I think this is only because they remind us in many ways. A bit too clever, too human... But enough of animal terms, because it doesn't seem fair for real doves, hawks and magpies to use their identities for a game that has nothing to do with them. They are just victims in the real game, even if some of them seem to temporarily benefit from urban territories. From now on I'll use a different nomenclature. It will be concise, technical and you may feel initially scared by it. But don't worry, you will get used. Cooperative, dovish, nice people but not participating in r0oT will be called s/p. Nice people, magpie-type, actively coordinating themselves inside the sub-way network will be called qns. Hawks, not nice (to Gaia) people willing to maintain their capitalist party will be called snd. Finally, as I'll explain later, we will have over-ground immunity members forming a bus network called snq (with many layers of depth) and different (underground) specialist communities tagged by qsn that will add satellite value to the main network.

The sub world will be populated by qns (r0oT) which some will act also as qsn (r0oT), while above ground we will find the snq (r0oT), the s/p (not r0oT yet) and the snd (anti-r0oT). All this will be more clear later, with some practice. For now, just remember that r0oT will be formed by members tagged as qns, snq and qsn while the current rulers of the world, tagged as snd, act as brainwashers and manipulators of s/p to keep their party. I know, this nomenclature is confusing, but it is totally on purpose. Maybe you can find an easier way to see it if you turn the paper 180°...

## r0oTing

There are many organizations, most of them NGO's, working for real changes. To cite just a few would be unfair. Some of them have a small impact, some others a bigger one and each of them is precious in its own value. But let's face the truth: none of them has the power to bring the decline of Gaia (and the consequent decline of all of us) to a turning point. The reason is simple: they are micro-structures fishing in the big human sea. Even if their structure is good and solid, the human sea is highly unstructured, so their messages become diluted, distorted, manipulated and unreachable to most of us, as they have no other means than global media to globally spread them. They are just patches, wonderful and well intended patches, but not enough to reach global changes. In order to achieve global power, global reach, what we clearly need is a *global structure*. Specifically, a vascular or root-inspired structure. The blood on multicellular bodies is able to reach all cells because of the branched structure of their blood vessels. The nutrients in a plant are efficiently acquired and distributed by its structure of roots and branches. So this is what we can do: emulate these structures. We will start r0oT by building the main qns network, the sub way in which information will flow and reach everyone in the network without the need of corrupted global media or useless governments. The beginning is marked by one person becoming qns.1.1.1, or just qns.1, so we have the center, the first node of the qns network. Two more persons will become a

link to qns.1.1.1 and become qns.2.1.1 and qns.2.1.2. The first digit indicates the *layer* number, the second indicates the *station* number and the third one, which designates each member's number within the station, is called *node* number. If you really want to follow me, start drawing it, preferably starting from first node 1.1.1 at the center and expanding the links and branches circularly in 360°. Using different colors will help a lot. The qns' 1.1.1, 2.1.1 and 2.1.2 form the station.2.1 (surround the three nodes with a closed curve to mark the station) in which 1.1.1 is the station agent and 2.1.1 and 2.1.2 are station nodes. Stations must also be called by family names: station.2.1 could be called Pangaea, for example. From nodes 2.1.1 and 2.1.2 six more people will join (draw the links and the new members) the qns network, three of them to 2.1.1 and the other three to 2.1.2. The qns.2.1.1 will be the station agent of the station.3.1 while the qns.2.1.2 will be station agent of the station.3.2. In station.3.1, with qns.2.1.1 as agent, we'll have qns.3.1.1, qns.3.1.2 and qns.3.1.3 as station nodes. In station.3.2 we'll have qns.2.1.2 as agent with qns.3.2.1, qns.3.2.2 and qns.3.2.3 as nodes. Draw the stations with closed curves again by surrounding the station members. At this point you can start drawing layers, like onion layers, with concentric closed loops. You will notice that from each member in layer  $n$ ,  $n+1$  new members are linked to it, and that the group made by the  $n$  agent and the  $n+1$  nodes emerging from it form a subway or qns station. In order to check if you got it, now expand the qns network to layer 4. Until now, your drawing should have layer 1, made by qns.1.1.1, layer 2 by qns' 2.1.1 and 2.1.2. Layer 3 by qns' 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2 and 3.3.3. Notice that at layer  $n$  there are  $n!$  people, being  $n!$  the factorial function defined by  $n! = n \cdot (n-1) \cdot (n-2) \cdot \dots \cdot 1$ . In other words, multiply  $n$  by its immediate number below and so on until you reach 1. We have  $1! = 1$ ,  $2! = 2$ ,  $3! = 6$ ,  $4! = 24$ , etc. A scientific calculator usually has this operation available. You will find that  $13! = 6227020800$ , almost the whole population on Earth! So we can form a network with just 13 layers and coordinate the whole population while each nodes only interacts with a very low number of other nodes. Before you try drawing layer 4, notice that up to level 3 we already have 3

qns stations, 2.1 [Pangaea], 3.1 [Gondwana?] and 3.2 [Laurasia]?. Now stop reading and draw layer 4 with all the nomenclature, beginning by creating four new links and nodes from each node at layer 3. When you are finished check it here: At layer 4 there are  $4! = 24$  qns members, grouped in six stations called station.4.1, 4.2, 4.3, 4.4, 4.5 and 4.6. The respective station agents are qns.3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2 and 3.2.3. station.4.1 is formed by the station nodes qns.4.1.1, 4.1.2, 4.1.3 and 4.1.4. station.4.2 has nodes qns.4.2.1, 4.2.2, 4.2.3 and 4.2.4. station.4.3 has nodes qns.4.3.1, 4.3.2, 4.3.3 and 4.3.4. station.4.4 has nodes qns.4.4.1, 4.4.2, 4.4.3 and 4.4.4. station.4.5 has nodes qns.4.5.1, 4.5.2, 4.5.3 and 4.5.4. Finally, station.4.6 has nodes qns.4.6.1, 4.6.2, 4.6.3 and 4.6.4. There are six stations with regular, family names to be given by its founding members. A station will be usually called by its familiar name but its official address has to be attached when required, for example in all reports. As a last feature, notice that branches are formed in such a way that stations 4.1, 4.2, 4.3 and their members belong to the Gondwana branch while stations 4.4, 4.5 and 4.6 belong to Laurasia branch. All of them belong to Pangaea branch, the main one. So keep in mind that each station name also names the branch that emerges from it.

## the sub way

In essence, the goal here is to create a subway network in which we, real people, are mainly qns members that are in charge of subway qns stations. Notice that each qns member is at the same time a node in one station and an agent in another. For example, qns.2.1.1 is node at station.2.1 and also agent at station.3.1. So each member, except qns.1.1.1 and qns's at the 13th layer, has a double station membership. You already know that this network has, added to the root structure, an onion character in which we find 13 layers. Layer 1, formed by just one person, is the most inner layer, while layer 13, formed by 6227020800 people is the outer layer. When we will talk about changing or migrating to another layer we'll say we make a radial motion, because we change the radius position in the onion. Any

motion within one layer will be called angular motion. This is important in order to understand the two types of lines that this subway has: radial and angular lines. There are two angular lines at each layer, one clockwise (-) and the other counterclockwise (+). (Draw them and notice how they could match the curves establishing the layers. This reveals the fact that each person, in fact, belongs to a layer boundary instead of a layer surface. Each node defines a frontier between two layers.) Angular line +4 travels from station 4.1 to 4.2 to 4.3 to 4.4 to 4.5 to 4.6 and goes again to 4.1, while angular line -4 performs the loop 4.1→4.6→4.5→4.4→4.3→4.2→4.1. They can be called aL+4 and aL-4, respectively. Then we have the radial lines, rL, which are (+) if they travel towards outer layers and (-) if they travel towards inner layers. Here the travel is more subtle, but don't get confused in your drawing because these lines are in fact the links you have already drawn to connect the nodes. Let's take a train that starts from station.2.1, the innermost station, and goes radially towards +. The first thing to notice is that there are two stations to reach, 3.1 and 3.2, so simultaneously we launch a train from 2.1 to 3.1 and another from 2.1 to 3.2. Once each station at layer 2 receives a train from layer 1, all layer 2 stations (3.1 and 3.2) launch three trains each, 6 in total, to reach the 6 stations in layer 3 (4.1, 4.2, 4.3, 4.4, 4.5 and 4.6). And at the same time they return the received two trains to layer 1. Notice that a station 3.something belongs to layer 2, and a station j.something belongs to layer j-1. This is, briefly, the structure of the qns network, the subway. You may ask, who travels through it? What is the cargo in these trains? The answer is: information, but we are not there yet.

## speed

Along the lines described above there are 4 possible trains to be running. Type 1 speed is called the slow speed, or priority 1 speed. Type 2 is the regular speed. Type 3 is the express speed. Finally, priority 4 refers to the lightning speed. This nomenclature is valid for angular and radial lines, so we may have a train a+4.PN2 meaning angular train in fourth layer

going counterclockwise with priority number PN=2. Or we may have a r-.PN3 meaning a radial train going towards inner layers with priority 3. In order to understand the priorities I need to set a calendar for r0oT. It has to be the same to all people on Earth, so no religion-attached systems. It's easiest for all to count just days, no matter if they grow longer as Earth's rotation become slower. Just days. For time within the day we'll all use UTC in order no to reveal our time zone. Day 1 is defined as today, the day I'm writing this: July 25th, 2016 of Gregorian Calendar. Notice that trains in r0oT are extremely fast, so it's not the travel time what counts, but for how long it waits until it is launched to the next station. This waiting time, defined as processing time, is what defines the true speed of the process, or in other words, it's the rate limiting or bottlenecking process. As we already know, it's information what is traveling, so when giving a PN we're defining information speeds, with nomenclature PN=1,2,3,4. PN=1 means that at each station, information has to wait (but never passively, as it has to be processed) for 14 days. PN=2 means processing time=7 days. PN=3 means 1 day and PN=4 means as little time as the station can manage to relaunch it forwards. So, a radial package of information with PN=1 takes  $14 \times 13 = 182$  days to go from layer 1 to layer 13 or vice versa. PN=3 would take just 13 days to travel the whole radial line. The same happens with angular lines, but in this case the outer the layer the more time it takes the package to loop around. Later I will describe how packages change priority and also content as they travel along the sub way.

## information

Information is a term that adds two concepts: information + action. These two things are required, always in conjunction, to achieve coordination, so it is useful to stick them together in one word. Information, when it arrives to our minds, changes our inner state. It can add, subtract and change ourselves or simply leave us the same. But generally speaking is a state changer. Our actions depend on our state, so new information implies new actions. But it also

works the other way: through new actions, new information can be spread and reach our minds, producing further changes. It is practical to join the two notions in one, as two sides of a unified process. It is information what travels through the r0oT networks and what will give coherence to the whole organism. The information travels between stations through reports. Reports are sent by end-to-end encrypted email through Tor, VPN's or whatever reasonably secure method we can figure out in the future. Once a report arrives to a station, depending on its priority number, it will have a processing time in which the station staff will study it, process it, make the required actions, modify it, add to other reports, split it in two or whatever they consider necessary. In due time, the station will package the new version of the report and pass it through the corresponding line. Information is the heart of r0oT, its blood, its sap, its Ichor. It will allow us to stay informed, to learn, to collectively create solutions, to coordinate our votes in elections and our choices of consumption in order to force governments and corporations to act as we decide. Imagine a big textile company using people in a very poor country to manufacture its products, paying them indecent salaries or allowing them to work under indecent conditions. Can we allow this? Of course not. But first, this information will have to percolate through all the network to make everyone aware of the true face of this company, and then we will all act by stopping buying its products. Such company which will have no other choice than fixing the situation or become bankrupt. You may reply to this that some products would increase their price if all workers are under ethical conditions and all Gaia damages are accounted for, but in fact is the other way around: It is now, when we exploit Gaia in general and most human workers in particular when we are not paying the true costs of things. In a fairer world, prices would not increase: they would be at their true value. It is now that we are buying some products almost for free, but nothing comes for free and in the long term we are paying it. We need to learn more, to unmask the processes of some corporations and governments, to unmask the corruption of advertising and global media, and to begin action in order to provide good alternatives. School is not

just for kids. We should make of r0oT a permanent school for all because we are all too ignorant. Extreme ignorance is what makes us so manipulable and docile. Once we know the monstrosities that are currently taking place on Earth and once we figure out alternative ways, we will act against them, because they concern and affect us, short, medium or long term. But first we need to know, to learn, to unmask the capitalist dream. We need to share our knowledge and to purge ourselves from the brainwashing to which we have been subjected. For how long are we going to swallow the lie of indefinite economic growth, when resources are, in fact, severely limited? For how long are we going to measure the state of things through silly numbers like GDP (Gross domestic product)? Should we measure our world by what markets tell us? Markets that simply try to make money out of nothing? Are we going to continue following the evil advice of credit rating agencies? Human economy has become a nightmare resting on the justification that the 'only' alternative, communism, is historically shown to fail. The truth is that both approaches have been shown to be ineffective, leading to dictatorships of all kinds. We all live in a huge dictatorship today, the dictatorship of money, debt, speculation, consumerism. We can be either on the zombie side, the first world, on in the slave side, the third world, but in fact we are all just puppets of that 1% of snd people that own nearly half of the world's wealth (according to Oxfam). There is a single reason for all this: information does not have right now a way to propagate and percolate through the world, so we all remain unconnected doves dancing hawkish music. For some time I thought that usual social networks could provide a way for uncorrupted information to flow, allowing a humanity phase transition from disconnected doves to coordinated magpies. But that was a mistake: these networks have upgraded themselves to big corporations and they are more worried trying to target you personalized ads, to increase their profits, to violate your privacy and a long etc. . . than being true platforms of information. I don't believe in them anymore. I think they are harming your brain, washing it with ads and a never-ending stream of alienating entertainment. They seem to connect you with the world, but they

are just disconnecting you from yourself, disconnecting (even more) you from Gaia. They may have some nice aspects, but they are a total disappointment as information carriers. We need a platform that it's not a private, profit company, belonging to all. Information is there, waiting for us to let it flow and then global changes will become a reality. Capitalism is, or so they say, the free circulation of capital, but to me is the blocked stagnation of information. Money can be useful for many things. Free market could be OK, but first we need free thinking, free people to manage it with responsibility.

## reports

Reports are the main unit of information that we will deal with. They can be born at every station, and then to propagate it through all directions. The task of each station receiving it is to process it having in mind the different directions it has to be retransmitted. For example, if traveling towards the inner layers it could be desirable to synthesize the information, to abstract it in order not to clutter the inboxes of the inner layers and not to over inform them. If information travels outwards it would be desirable to specify, to become concrete, to propose practical aspects, to develop pedagogical tools, to adapt to the special circumstances of each branch. . . To perform angular transmission it may not be necessary to synthesize or to specify, but the reports can be refined or adapted to each branch's idiosyncrasies. Sometimes, especially for high speed priorities, reports will not be processed at all, or just edited to a minimum. We should keep in mind that an important topic and an urgent topic are different things. If the information is to be transmitted fast, it will not be well digested, so each one has to think what is the best compromise for each report: speed and processing quality will usually be antagonists. Additionally, each node should have more or less the same amount of work. A node at layer 3 cannot deal with millions of reports coming from outer layers. The work of the stations is clear, then. Information processing to make inner layers more universal and abstract, and outer layers more local and practical, with the constraint that all

nodes must have more or less the same amount of information to be processed. With time, each station will have to learn what to do, and reach a good equilibrium. Finally, each report will be received and sent with its 4 previous versions attached, so everyone receiving it can see the last 4 edits and see if they need to report suspicious editing of previous stations. Plus it can be interesting to see the course of the information. As reports merge and split, all its history of the last 4 steps must always be attached, with the names (formal and non-formal) of the authoring stations. Each bit of information needs to have attached the station authoring. If a station creates a content, it will sign it. If some station edits this afterwards, it will propose a shared authoring through a percentage that next stations, inspecting the edit history, will approve or reject.

## join

The first issue about joining r0oT is anonymity. A r0oT member, as any activist, needs to protect its own personal identity. The list of activists that have been victims of violence is just too long [22, 23]. Don't be scared by the following set of advices. It is quite easy to get used to a more or less safe protocol. You can expand your knowledge of it through a nice app called Umbrella [24]. In order to safely join r0oT you need to either receive an invitation from a r0oT entry door, from an already existing member or by sending an email to the address r0oT@tutanota.com, which is the first entry door address. Other doors will appear in the future. The email must be sent from a tutanota email service [25], which uses end-to-end encryption and through a Tor Browser [26]. Right now it is not possible to open an account in protonmail through Tor, so for now we will stick to tutanota, which does an efficient encryption, it is open source, and allows a sign up through Tor. Unfortunately, right now it's not possible to send emails from different servers to tutanota and viceversa without sacrificing end-to-end encryption. There are methods more secure than this, like assymetric PGP or Bote from i2p [27] but they have other difficulties. Tutanota provides a free, easy and fast encryption which

is sufficient for this step. You need to create the tutanota account just for this purpose and not use for anything else. In it you will never write any personal data (from you or others) and you must avoid sending emails to non-secure accounts. Moreover, you need to sign up through an updated version of Tor Browser (and ideally through a virtual private network [VPN] as well, but is not strictly necessary), in which first you will set the security level at the highest. Don't use the same browser for anything else during the session, and renew the circuit each time you perform a new login or browse a new page. If the sign up process asks you any personal data, included a phone number, don't use the door and look for other doors that will eventually appear. And very important: *never login into this account through a browser that is not Tor*. You may think why not using i2p, which is an invisible network that could be even better for r0oT than the tutanota+Tor duet. The i2p network, among many interesting applications, has a secure, serverless email service, Bote, which may be ideal for our purposes. I think that i2p or something similar should be the true future tool for r0oT, but right now the very low speed of Bote emails and its still buggy behaviour makes this service a bit unsuitable. However we should all start configuring i2p in our computers to make this network better, as its quality will grow with the number of users, and hopefully in some near future we could switch to a serverless email service within the i2p system. For now, we will use i2p and Bote only for very delicate messages that need high security and anonymity. We return to our joining protocol. In the email you will send you should explain your motivations, what you think you can do, your time availability and other relevant details that you may consider, avoiding any detail that could reveal your identity or location. Once accepted you will receive further instructions concerning privacy and you will go through an apprenticeship stage for at least 28 days, in which the agent of your assigned station will be your main guide. They can ask you for a previous test to enter, designed and approved by the station rules. Your ID will be the secure email address that you will use in r0oT. For example, nick@tutanota.com. Of course, you will end up having many ID's, for different ser-

vices and for different times. Inside a station you can be known by just the current nick, but nicks can be repeated in different email services so officially you will be identified with the whole email address. Your nick needs to avoid telling anything about you, and if you use nicks elsewhere for other purposes invent a new one, as far from your personality as you can. You can even use a sequence of letters, symbols and numbers as a nick. Of course, we should not rely on just one server like tutanota. We need to explore and probably create better options. The ideal solution, for now, would be for everyone to change their email ID's every 28 days. Your password needs to be as complicated and long as possible, always containing capital, non capital, numbers, other symbols... And it has to be changed at least once each 28 days. Furthermore, if you belong to a layer from 1 to 9 you will sometimes need, for extremely sensible information, to further encrypt your texts and files with some resources you will learn during your apprenticeship, like PGP. If your station agent tells you to, or gives you permission to change your ID, you must/can proceed to it. But don't worry about these details now. A clear consequence of anonymity is that you can join r0oT with more than one ID. Nobody's going to know anyway. No one will know your age, gender or any personal data, and you should never provide it. In r0oT we are all of neutral gender, we are nodes, we are it, not he or she. If you belong to layers from 1 to 9, single-digit-layer (sdl), you will never tell anyone that you are a sdl member. *Don't login from your cell phone ever*, at least for now. It would be ideal to login from a RAM stored live-usb operating system when you are not in your computer, or even in it. Tails Linux [28] is a good choice, as it already channels connections through Tor by default. Never run Tor browser from a root or administrator account. Neither from an open wifi network. From wifi networks that you don't own you'll need to use Tor through a Virtual Private Network or VPN. There are plenty of them, and many of them with free plans. Be aware of metadata as well, the information that is attached to each document, image or file in general that you create. It could include data such as your name, your location or your computer's address. Even the date of creation could provide clues compromising your iden-

tity. The best solution is keeping things simple. Use plain text instead of complex word processors. Create everything under a live-usb system which leaves no trace after shutdown. Process each file under MAT (Metadata Anonymisation Toolkit) [29] before sending anything. This program is already included in Tails. Once you are in the network, after your apprenticeship, you may want to recruit some valuable people you know. You will never reveal that you sent the invitation so they cannot find that you are a member. Or you just can send it using your non-secure identity by saying something like ‘hey, look what I found somewhere, should we join?’ Invited people should receive an introductory r0oT text as this one with an invitation to join or to share with other people. One final and very important side note: never give any money and report whenever you see someone asking for it in this network. This is not a ridiculous and fraudulent pyramid scheme in which they ask you for money with the false promise that you will receive more money from others [30]. It is true that these fraudulent schemes are usually based on a similar root structure, but so do plants and vascular circuits in Nature. Don’t associate the idea of a root structure with fraud because millions of years before some thieves and criminals used a root scheme to steal money from people, Nature already used these structures with great efficiency and with no hidden intentions. The r0oT network is based on these natural examples and is completely non-profit. Anyone trying to make money from it must be reported and banned.

## locality

The qns and snq networks should grow as non-locally as they can. People managing the recruiting accounts shouldn’t know, if all has done well, the location of the new members so they will be assigned to random stations. The idea is that people from all over the world will get mixed and all countries can be involved. All people in sdl should write in simple English and be nice to people with more difficulty with it. When layer 9 will be completed, the network should start to grow locally, so secure emailing, Tor, and other

precautions are not strictly necessary there. Instead, at each 10-layer station there will be a local recruiting system that can use local languages. From then the network will grow even more locally. The idea is to arrive at layers 12 and 13 by having stations that correspond to neighbors, local friends or job partners. Single digit layers will be non-local and anonymous, while double digit layers will be local and will act as a hugely coordinated local cooperative. Special attention is required to members of the 10th layer, who will be on the edge of the anonymous onion. Of course, double digit layers should be as private as they can, but it is not a major issue. Specially at layers 12 and 13 where all members will personally know their immediate network neighbors. If you happen to belong to a sdl it wouldn’t be a bad idea to join the qns network with a second, passive profile on the 13th layer, just to cloak yourself. Wherever countries don’t allow for Internet or where the resources are limited, information and reports can simply be transmitted by other methods, by hand for example. At layers 11, 12, and 13 the station interactions could be physical reunions. At countries where r0oT becomes banned, or where Internet itself is severely firewalled [31], the Tor network and VPN’s can be very useful tools to avoid prohibitions. In those cases, ddl’s may be kept as anonymous as the sdl ones to protect the people taking part in r0oT there. The coordination of this new organism cannot be stopped by any government and wherever it is more difficult to penetrate is even more necessary to do so. I am sure many governments will try to forbid r0oT information freely moving on their lands. Let’s help their people to reform such governments and unfair laws then. In order for the network to be really global it is of especial importance that you consider first those friends or acquaintances living far from you, specifically if they live in undeveloped countries. If r0oT grows out of just first-world geeks the network will not percolate the world and its values will not be representative enough.

## democracy

Once you enter the network and go through the apprenticeship stage you will be a qns (or snq) node,

and some time later an agent of a station as well. But obviously you will not stay where you have begun, at least not necessarily. You can change of node in an angular and in a radial way. The networks must be dynamical, to avoid corruption as the main reason, and to allow the evolution to equilibrium states where everyone can find its most suitable position. First of all, everyone enters the network from the outer layers available. Then, each 28 days an election must take place on each station. In it, the nodes and the agent will vote who they want to be the new agent. The current agent can be re-elected or not. If not, the old and the new agent will simply switch their positions. At each of these elections, it is important to remind all the station members that the agent is by no means a superior position. There is no vertical gradient here, no higher or lower ranks. No layer is better or superior than the other. They are simply different. While some people will feel more comfortable and inclined to operate in outer, more local layers, others will be oriented to inner nodes. This is not a game in which the target is to reach layer 1. If you reach that node you won't be able to power and rule the world more than anywhere else on the network. You can't even broadcast your voice over the whole network. Your messages will reach just the two stations you will be connected to. If your messages go any further it does not depend on you. If you become blinded with the less populated inner layers, as a form of targeting a more 'special' position in which to implant a kind of global dictatorship, you are not truly understanding r0oT. Of course, it is natural to think that with time there will be a certain radial phenomenology, where people more oriented towards universal matters, of a more abstract tendency will migrate to inner layers, while people that like more to be in direct contact with other people will prefer to be in outer layers, where more specific actions can take place. Middle layers can be thought as more administrative or of political-economical nature. But no one knows how such a radial phenomenology can evolve. No one will force it. What is clear is that every layer has the same importance as others, and that there are not nodes superior to other. You can also seek angular mobility through your current layer, for whatever reason, using a mechanism described later in the text. I

call micro democracy to the process of voting inside a station. Each station will have to decide its own things, for example a new (or reelected) agent each 28 days. My goal is to establish a structure where typical left-party assemblies can take place without the chaos and disorder that usually reigns in them. Each station is in fact an assembly. With this network, democratic coordination can be achieved by interacting in low-numbers, which is the efficient way to do it. Macro-assemblies, typical in well intended but poorly-structured left parties are simply a waste of time. Micro democracy is the answer to make democratic assemblies efficient. The r0oT network combines the democracy of the left ideas with the organized structure of right wings and also with the efficiency of nature root and vascular systems. But don't panic, there is also a universal macro-democracy in r0oT. As the qns and snq networks grow, each station must write some statutes that we will call branch statutes. In them we will find a set of rules that will apply to all the stations emerging from that station, or in short, to the branch that emerges from (and names) it. Each station must write its own statutes with the condition that all its rules must be compatible with the rules coming from inner and more global branches. The macro democracy comes here: any addition, change or deletion, or put in general, any modification of a branch statute must be approved by all members affected by that branch. So if station.2.1 wants to change even a comma from the 2.1 station rules, all people on the qns network will have to vote for its approval. Micro democracy is more for report processing and agent voting, more local station things. Both in micro and macro-democracy, an approval for change must reach at least the 2/3 of the votes, for everything. Below 2/3 of approving votes, whatever is proposed becomes rejected. This mechanism ensures that all the world enjoys the same universal rules, while on more external layers (and smaller branches) some differences can appear to adjust for any local idiosyncrasy. Further details of voting processes will be discussed below.



## immunity

Here comes a major point: every organism needs its own immunity system. Cells have it, multicellular organisms have it, and even Gaia could have it, though none of them are infallible. However they give to these organisms a robustness that is unthinkable otherwise. r0oT, as an organism, needs one of these too, and devote great efforts to such task. As I have explained before, if r0oT starts to succeed in its effort to coordinate people, hawks, and people will not stand a chance against a coordinate humanity. They are too outnumbered to do so. But and are usually very clever people and know that as every organism, no matter how big or mighty, can be manipulated by an almost invisible parasite, they can also make r0oT to work in their interest. So instead of fighting the organism fight, which will also occur, they will surely fight the subtle war of manipulation. For example, introduce r0oT members to enter the network pretending they care a lot about Gaia and humankind and trying to get information and conducting the structure to their interest, or at least to minimize the attack on them. If for example r0oT agrees on banning some products, some infiltrates can benefit by putting a certain banned company the last on the list. They can also use global media and internal reports to introduce memes, ideas that can act against r0oT and Gaia. Even inducing internal fights to sow doubts on the system can benefit them. Notice how these manipulations are already present in our current society. Everytime you say 'I don't have (or I have lost my) faith in humanity' you are reproducing a manipulative meme that benefits those who subjugate humanity and Gaia. Each time someone says 'We are bound to extinction' this efficient manipulative meme unfolds its power. There are plenty of memes dedicated to make you believe that humankind is intrinsically bad, doomed to extinction. Their effect is to accept evil, to be silent when you see it, to make you passive in front of the colossal injustices that you witness. And who gets the benefit from your passivity, from your acceptance of an evil? Yes, you have guessed it! This kind of memes or manipulative ideas can be too subtle and diverse to discuss all of them here, but we need a hard

work to identify and fight most of them. The truth is that manipulation can come from a great variety of sources, and it does not need great apparent power to change the behavior of the whole organism. That is why the attention devoted to immunity has to be extreme. We will build the snq system through an auxiliary set of networks that will be perfectly coupled with the main one. We call snq1, or just snq, to the main immunity network. Its structure is just the same as with qns, with the same rooting linking, with stations, agents, nodes. All is the same, but it is not a replicate of the qns network. Its peculiarity lays in the fact that it starts one layer after (more external than) the qns, so it builds its own network in such a way that it has one available node to belong to each qns station. Again, you need to draw this to fully grasp the details. Take the drawing you made for the qns network and prepare to complicate it further (and there is still further complication to add, so you are warned to make the drawing as clear as you can). The first member of the snq network is snq.2.1.0. If you want you can drop the 'snq' for now, as snq members are the only ones with a 0 in their formal address. The nomenclature means that it belongs to the qns station.2.1 and the 0 means that it is the snq member of it. As the qns is thought as a subway network, the snq is better thought as a bus network. There will be a bus connecting all the stations through an overground based bus network, so when the subway fails, the buses overtake. Now, even if 2.1.0 is the snq member of the 2.1 snq.station, it is also the agent snq station of the bus station snq.3.1, which is the innermost station of the snq network. The nomenclature means: snq for bus, 3 because their nodes are located at layer 3 (and always the station takes the number of the layer of nodes, not that of its agent), and 1 because it is station 1, in this case the only one of this layer. In station snq.3.1 there is an agent, 2.1.0 with two snq station nodes, which are the zero members of qns stations 3.1 and 3.2. Their addresses are then 3.1.0 and 3.2.0. Now, things get more complicated. From each of these two snq nodes we link three more snq members, forming two snq stations. But what is more important is that each of these six members will be the zero member of the six qns stations described some sections ago. From a good drawing you

can follow the mechanism. There is a qns network and there is a snq network, they all forming their own stations, angular and radial lines, they all transferring information, etc. But there is a snq member as the zero node of each qns station as well, so both networks are perfectly coupled. Now, snq members, even if they have the tasks of managing their own snq network, they have some special jobs to do as zero members on the qns network. They will be the vigilantes, the rule-keepers of qns and a long etc of other tasks. But their main one is to ensure that the health of the main, the qns network is in good shape. As immunity keeps their two main tasks are 1) identify external or internal infectious members, what we call infiltrated snd, and 2) fight them to expel them from r0oT or to convince them to rejoin again following a better approach to the values of r0oT. Notice that every time a snd member is located, non-snd members have the opportunity to interact trying to convert it to a more Gaia friendly set of values. In any case, to perform identification of possible infections snq will analyze all the information that the station where they are 0 members deals with. Information or station behavior will be tagged as possibly infectious if we meet one of the following and hierarchical criteria: 1) if the whole Gaia is not considered more important than r0oT itself, 2) if r0oT as a whole is not considered more important than a part of it. And of course, if a rule at the specific location is not respected, or simply a not cooperative attitude is found. The snq members will have the power of triggering the alarm of possible infections and to act against them through mechanisms described later. Of course, you are now thinking that the snq network can become corrupt as well, as it also happens sometimes in other organisms. It is true, but we have yet another mechanism to make the organism even more robust. The trick is the following (yes, more complication): the snq network described here is just the first layer of immunity, simply snq1. But there are more, and again you probably need to continue drawing. What we need is to iterate the process we have described above to create the snq2 network, which is again another bus network that will have its own structure and that will have at the same time a single presence at each snq1 (or just snq) station. They don't have a direct presence at

each qns station, though. (The qns can be thought as a snq0 if you like.) A qns station has a 0 member of snq1. A snq1 station has a 0 member of snq2. And so on. We need to iterate this process again and again creating snq3, snq4, snq5, ... until the snq9 network is complete. We call these networks, in general, d-snq networks, where d is their depth. Each layer of immunity will be responsible of the integrity of the previous layer and they can act only upon their immediate next health-purposed-layer even though each one can report irregularities from deeper-rank snq layers. Of course, even the snq9 network can be corrupted as well! In order to add further immunity, each major action taken by snq networks must be accompanied by the favorable votes of a purposed-created and randomly chosen station jury's taken from the double digit layers of the qns network, so local qns people have the last word. But the system is obviously not infallible. Mobility within different depth layers of snq is done (each 28-days) through micro democracy involving the d-snq station and its 0 member from (d+1)-snq depth layer. This works as well for a switch between a qns and a snq member inside a qns station.

## specialists

This is the last complication, the one that will render your drawing an impossible mess. If you get lost here you can still join r0oT because during your apprenticeship stage your station agent and your 0 member will guide you to a deeper understanding of how r0oT works. But who knows, your station may use your initial understanding of this text as a test to whether you are really into joining... Anyway, the r0oT organism would be foolish not to benefit from the specialist knowledge that humanity has accumulated and keeps accumulating (and refining) through centuries. There are scientists, farmers, physicians, cooks, lawyers and a large plethora of specialties that need to be incorporated to the whole structure. The mechanism will be the following: each time a member enters the qns network, it will have to reveal a little bit of its personal data: its specialties, that we'll call labels. If it's a specialist in music,

teaching, or whatever, the new member will declare it to its station. Each member can declare more than one of these labels, or none. Let's track a single label, for example that of a chemist. The member will declare that has the label called chemistry and by extension those labels from which it emerges, as the more general label 'science'. If it is the first person with the label chemist it will be the first node in the chemistry network, and the next people with this label will follow the formation of it. As each network in r0oT, all the chemists that have declared to be so will form the chemistry network where we'll have again stations, lines, agents, etc. And every 28 days, elections with micro democracy will take place, so each member can migrate across the whole chemistry union. (Yes, and also elections for the 'chemistry' associated snq layers as well.) The mobility inside the specialist network is independent of the mobility inside the qns network. This will help, on the one hand, to chemistry community itself because it will be globally structured and very specific and useful information can flow across it. But on the other hand they will benefit the whole society through a visiting system. Depending on the size of each specialist network, generally called as qsn networks, the snq system will distribute and organize visits to the qns network in such a way that for some time, each qsn node will be visiting a qns station, being a temporary part of it, with the right to vote in micro democracy as another regular node. During this time, there will be a cross-flow between technical and human information, so both parts have to teach the other and discuss what can be significant, or just teach without apparent benefit, because r0oT must be first of all a never-ending school. Reports must reflect the acquired learning and how the mutual benefit process is achieved. The difficult part is how qsn networks can perfectly couple to the qns branches they visit. This is explained later. For now, it is enough to say that bigger qsn networks attach their innermost nodes to some stations of the qns network, and less numerous qsn will attach their visit from outer qns branches. The visiting will rotate in angular loops so every qsn will visit all its available branches after some time. A chemist can be involved in the visits of the chemistry qsn network and the more generic science qsn

network as well. Of course, a station can have different specialist visitors at the same time, but not two of the same size (k-order). This system ensures that some specialists that care so much about their specialty but not too much about a qns activity can engage on r0oT as more global players even if they prefer to remain locally as qns 13's.

## the r0oT hypothesis

You may have noticed that this text does not tell you what to do, what information you should transfer, change or create. Of course there are some topics that are too important to be overlooked, like CO<sub>2</sub> reduction and strategies to at least stop the growth of human population (and ideally decreasing it slowly as to only fill 12 layers, for example). Is there an ideology intrinsic to r0oT? Yes, of course. It is built in its own structure and it's formulated through the following hypothesis: a coordinated society, in the form of the r0oT organism, will necessarily act for its own good. By 'good' I mean the moral perspective I described before: the one allowing to persist along time with more warranties, and to create a more respectful and fair (universal) civilization. Notice that our own good implies a hierarchy for prioritizing information: 1)Gaia, 2)r0oT and 3)parts of r0oT. This is in fact redundant and unnecessary to be verbally established but it can be useful for snq members as a handy mantra. Think about it, if we would act in favor of a part of r0oT against the whole network, wouldn't it be bad for the supposedly benefited part? Maybe it could benefit short-term, but if the whole suffers, the part will follow the same path, sooner or later. The same if we act in favor of r0oT at the cost of damaging Gaia. Isn't this a contradiction? If we hurt Gaia it is to our own cost even if we don't see it with our short-sighted vision. You have two choices: to remember the recipe 1)Gaia, 2)all-r0oT,3)smaller-parts-of-r0oT as your priority credo or simply to think that the global good is always your particular good, in the long term, and it is precisely the long term what matters (if your moral is to persist in time in the long term). If we find a member that prioritizes a short-term benefit against the whole

r0oT or Gaia, you have the duty of reporting this infectious behavior to the snq member of your station or others within your reach. You may think the r0oT hypothesis, the assumption that we all will seek the long term and the global good when information can freely flow through all the population is hugely naive. This may be true for an uncoordinated society, but not for r0oT. It is naive for doves, but not for magpies, to use game-theory nomenclature. When our new organism will acquire its first bit of agency, even loosely, it will precisely this will who will target its own good. No doubt there will be many infections, as snd people won't be willing to abandon their lethal luxury easily, but that's why our coordination is for: to be together to think and act for the greater (global) good, and to persist through time longer and better. Of course, in every organism the phenotype is not always a reflection of the genes that are carried inside, but they can be altered by other external genes. In our case, the r0oT hypothesis should seem as naive as the claim in biology that each organism acts maximizing its own benefits. This is many times the case but not always. An organism can act for the benefit of other organism's genes, or memes, so the r0oT hypothesis can only be true if our network has an efficient system of detecting a phenotype or behavior that is directed against itself. Do we see examples of such a system in Nature? Of course, immune systems fight against virus and infections, but what about fighting direct and explicit manipulation? Natural selection will always favour mechanisms that at least neutralize to a point the effects of external manipulation. What about conscious fight against manipulation, using intelligence? Can this be an effective mechanism? Of course. Critical thinking is to manipulative memes what white cells are to parasitic genes. In the case of r0oT, not only the cultivation of critical thinking will be critical as its name indicates, but also the layered action of the snq networks and the also immunized action of specialized networks that can provide uncorrupt knowledge to society [32]. Notice how many people are involved in snq and qsn structures, but such investment is crucial, as there is no perfect defense against manipulation.

## freedom

When you become a member of r0oT you will be able to manage information however you want, but you will need to ask yourself many times what is what you want, and why. What is the source of a desire that appears in you? Can you trace the causal chain that made your will formulate it? If you trace it, is the source in yourself or somewhere else? Are you just repeating what you heard without deeply thinking about it? Are you acting against yourself? You may think you have independent thought, but how sure are you? Who is the true owner of your thoughts? Who is really driving your phenotypic behavior? Your teachers, parents, advertising, media? Are you sure you can trace the influence of each source on you? If you want to enter r0oT you may start to ask yourself all these questions, and not just once. If you are ready to answer them immediately then you are already suspicious of being manipulated. What is freedom, then? Is freedom to go and vote the party you like more without any impediment? No, just no. This is not freedom. Freedom is not about what you can or cannot do. There is already a word for it: power. Am I free to vote this party? Wrong question, sorry. You have the power to go and vote it, yes, but freedom is a concept that orbits around what you want, not around what you can [33]. Do I really want what I seem to want? This is the freedom question. To the can/cannot issue you have the concept of power. Freedom is about whether what you want is the result of your own critical thinking or simply the output of the manipulation powers that surround us everywhere. To be sure, no one escapes completely from them. Total critical thinking, 100% freedom, is an utopia, but I am sure everyone of us can improve their default percentage. And it's not your fault if you don't have much freedom right now. School programs, media, ads, governments...all of them have been shaping your way of thinking, especially trying to disable your critical thinking through all your life. Do you remember a teacher trying to teach you critical thinking per se? If you do, consider yourself a fortunate person, and think that probably that teacher did that on his/her own account. The world right now is designed for you not to think at all, just the

bare minimum. The difficult part is to recognize it. If you are reading this your ego will probably react and say ‘I’m not a toy, I do think freely, I am not a slave of ads, I’m not just repeating what I hear without an independent filter’. This is the magic of brainwashing mixed with ego screening: the washed brain, without the capacity to think freely, cannot easily awake from its dream by itself, and its ego will shield it from any external message trying to awake it. It is probable that if you are brainwashed this last sentence says nothing to you, so great is the strength lying on these shields. In fact, there are no clear recipes to know whether you are strongly manipulated or not. And there is no way to measure or quantize this. But there are some useful hints that may help you in order to self-diagnose (in private, no one will examine you on this). First hint, 1): you may be pretty manipulated (or extremely under informed) if you don’t think (or know) that Gaia can be right now under critical danger [34, 35]. 2) if you don’t think that, most probably, mankind is the main factor hurting her. 3) Do you read a lot of books? People who read a lot are less manipulated. 4) If you read, do you read only novels? Or watch only films? Non-fiction and documentaries are essential tools for developing critical thinking. 5) Do you have nationalist feelings, thinking that you should defend the interests of your country against the others, instead of defending the whole humanity and Gaia without frontiers? If so, you are severely brainwashed. Other questions you may ask yourself are: What do you eat and why? [36] Do you know what is the effect of the food you take on your body and on the world? What are your political ideas and why? Have your ideas changed recently according with the mainstream? Are you voting a right party while being poor? In these questions you can find many signs of you being strongly brainwashed. You can continue: What clothing do you wear? Which marks do you use? Do you know the true cost of all these products?[37] Do you know how far are they from true price? Do you take drugs, any drugs? If yes, it is a sign of not being able to see long-term. Do you rapidly and negatively react against the idea of being brainwashed? Lack of self-doubt is a clear sign too. And one of the most important questions of all: do you talk to yourself? If not, how do you really

think? Do you think that being mildly aware of your inner and capricious chattering is real thinking? I suggest you to start writing to yourself on a daily basis. Question everything by writing to you, and if you don’t want to keep the text just delete it afterwards, it doesn’t matter. Do you consider thinking a task that is too hard, claiming that you don’t have time or that you are too tired for that? Then, consider yourself completely brainwashed and start writing to yourself immediately. This can lead you to discover yourself, at least many parts of yourself that have been hiding or that were not listened to. It may help you to discover to which extend you are being manipulated and how you can acquire true freedom. Notice that I’m not telling you how or what to think: only that you and we all should benefit from you stopping your zombie life and starting to awake from this sweet but dangerous, alienating party. You have my relative respect if you are utterly rich and want to keep your privileges, but most probably, by definition of probability itself, it’s not your case. And then, what are you waiting for? Will you start racking your brain or will you continue feeding on the brains of others, being the body that acts for the benefit of others?

## P2P

r0oT is thought as a structured P2P, peer-to-peer system, in which there are no servers or clients, or in which we all are clients and servers. All nodes are of equal importance. It would be more comfortable to have a server with all the rules and mechanisms incorporated in it, a kind of ‘facer0oT’, but then the network would be extremely vulnerable. We don’t want information to be anywhere but in our personal computers and our minds. The P2P architecture allows to be more robust in such a way that if one node fails or is compromised, the rest of the network can continue working. If r0oT would rely on servers, no matter how many backups we had, we could be intervened or just hacked. By being P2P, any attempt to track and disable us would mean tracking everyone of us. However, this implies that your personal computer approach should be refined in order to comply with some security requirements. First

of all, every time an email or a document or a file, in the email server, a cloud server or in your local drives (don't trust cloud storage, especially if unencrypted) becomes unnecessary, you need to delete it. Especially if it contains compromising information. Don't be a keeper in r0oT. Take into account that it is not sufficient to empty your desktop trash, since there is usually a data remanence which can be used to retrieve the data again. You will have to learn to destroy data, not just delete it, and also to strongly encrypt it. There are many tools for that purpose, depending on your operating system. The most simple way to participate in r0oT is, as already suggested, to create a bootable usb stick or CD with an updated live-operating system that loads in RAM, like Tails Linux. When you are finished with your r0oT work you can shut down the system and open your regular user environment. Any files you want to keep (and better stick to what is necessary) you can store them in a flash drive under strong encryption. Files generated by r0oT that can be of social utility, then share them everywhere you can to maximum reach, without revealing your role in r0oT. You can also run a specific OS (operating system) like Tails as a virtual machine within your current OS but it is not so recommended as a RAM booting method. The more you read and learn about these privacy and security tools the better. In any case, the 0 or snq member of your station has the responsibility to teach, advise and guide you on all these topics. Even trying to hack you to test your protocols. Again, avoid using your cell phone for r0oT if you belong to a sdl.

## agents

What are the main tasks of a station agent? First, it doesn't matter whether it is an agent from a qns, snq or qsn network. They all need to coordinate their associated stations. First, they are responsible to send the reports (information packages) in their due time. They will be the actual writers of these reports, or at least the ones editing final drafts. When a report arrives to the station, it is the agent who receives it and it shares it with the rest of the station crew, including snq and visiting qsn members. Then it has to

establish a timing for the processing of the information. It is difficult to propose an all-valid model for this process but it essentially consists on: 1)reading, 2)discussing, 3)acting, 4)drafting, 5)agreeing on a final writing and 6)sending. And of course you need to include a 'thinking' step through all the process. The agent needs to put a clear scheduling establishing deadlines on all substeps. Nodes can and must contribute providing material to be changed or to be added to the report. Discussions will be 1)all-to-all, 2)node-to-agent and 3)agent-to-node. All ways are useful. Node-to-node interaction cannot be forbidden but the more transparent is everything to the 0 member the better and less suspicious of infection the station will be. Secure real-time chats could also take place provided they are through Tor and using OTR protocols. But wait until more specific instructions are given to you in this topic. In essence, agents are the main coordinators of the stations and are responsible for the information processing and transfer. They will also act as moderators, as recruiters on the growth stage, as guides (along with the more technical guiding of 0 members) for apprentices. Another task is providing data as statistics of some processes towards inner layers in order to capture the global status and numbers of the network. I'm sure there will be more tasks associated to them that will emerge with the first growth stage of the network. At these initial steps, to find good protocols and perform drilling will be an essential part of their work.

## snq

Each snq or 0 member of a station is responsible for many things. First and most important, to guard the health of the station, identifying infectious behavior and acting against it. Other tasks are also important: looking after the security and privacy of all the station members, being a technical guide, teaching the necessary tools and checking that they are properly used. A 0 member can and should try to constantly hack the other members computers and accounts in order to test their health status. If a member becomes hacked compromising personal data, it will be expelled and invited to rejoin again elsewhere. Zero

members are also the ones that will manage the voting processes. Notice that each snq station will have a member of a deeper  $(d+1)$ snq layer so the process there is analogous. They are also responsible of managing the qsn visiting system. But most of the time they will manage crisis. When someone fires an alarm, and everyone can (and must, if they find something suspicious) do it, a crisis process will be opened by the snq network. Any suspicious observation must be reported from everyone to everyone available. In principle, to the station agent and to the 0 member, but what if they are the ones we are suspecting from? Every member has the right and the duty to know the addresses of the agents of its own branch up to three inner layers, which includes its own agent and 2 layers beyond. This in its own network, but additionally each node needs to know the addresses of the 0 members and the snq agents two inner n-layers beyond. Remember that an n-layer is a layer on the onion, while a d-layer is a depth snq layer of immunity. Finally, each node needs to know the addresses of the three immediate deeper d-layers of snq, which includes its 0 member of its station and two layers beyond. Summarizing, in your node you will need the addresses of: your partners in the station, including nodes, the agent and the 0, the nodes and the 0 from the station in which you are the agent, the agent of your agent, the agent of the agent of your agent, the snq agents of your 0 partners (2 since you belong to two stations), the snq agents of the snq agents of your 0 partners, and finally, if you are at a d layer of snq (where layer 0 is simply qns), the  $d+1$  agents of your 0 partners and the  $d+2$  agents of the  $d+1$  agents of your 0 partners. (Here you may need to use your drawing.) And whenever you have the visit of a qsn network you will need the addresses of your visitor, of its qsn agent and of the associated d-smq member. You will have all these addresses securely stored and updated and also, as agent of your station, the collection you need to provide to any new node that you may have. Whenever you migrate, update the lists and destroy all the addresses that you no longer need. If you decide to keep some anyway, at the risk of compromising the network, you are not allowed to contact to them. Remember, just three levels towards the inner radial direction and towards

snq depth. Towards the outer radial direction you already belong to two stations and cannot directly contact beyond that. The snq members will also manage angular mobility of nodes. If a node wants to change it will inform the 0 member and this member will look for a switch node of the same layer by using its snq station contacts at different levels of d-depth. If two nodes agree on the exchange it will be performed without questions.

## priorities

Each station must arrive to the deadlines associated with the priority number (PN) received in the report. However, at the moment of transmission the station will attach its own opinion on what the priority should be. Then, the next station receiving the report will take as priority the average of the recommended PN's through the report history. For example, if a report is originated at  $n=13$  and starts with  $PN=2$  but then at the next station PN is reconsidered as 3, the next cell will face a  $PN=(2+3)/2=2.5$ . In this case the PN will round up by default, to 2. If this new station considers that PN should be 3, then the next cell will face a  $PN=(2+3+3)/3=2.67$  and again the priority will be rounded to 2. Only when the average PN reaches a number greater or equal than 3 we will assign  $PN=3$ . If a cell considers that a report is of no importance at all it will assign a proposed PN of -1, in such a way that if an average PN reaches a negative value this report will stop propagating. If two reports merge into one, the priority will acquire its mean value, but keeping the whole PN history inside. If a report splits, both will share the same PN at this moment and share the same history up to the splitting point.

## crisis

When a snq member receives an alarm, it will open an issue to investigate what is happening, in coordination with its snq station partners and informing deeper snq d-layers. The snq networks will have regular information processing, reports, and these will

be tools to communicate and coordinate, but a crisis will be a special type of report opening that will not be closed until solved. Of course, once solved it will travel as regular reports do, to all directions to inform the neighboring stations and to deeper snq layers. In a crisis, all the snq station associated to the 0 member in which the crisis is declared will join this flagged station and the station agent will act as a regular node while the agent functions will be worked out by the agent of the immediate depth snq station. If the problem requires more intervention, deeper snq layers can override. The snq networks, any of them, can decide to merge two or more neighboring stations from every depth that is of lower d than them, so they will become a temporary single macro-station. This could be helpful sometimes to manage a problem. Once it is solved, all regular nodes can be reallocated in a different station than its previous one, which is another mechanism of angular mobility. This can be done by the agent proposing it and the station agreeing and by two nodes just wanting to switch. During a crisis, and only through it, members can be expelled from r0oT. In order to do this the temporary snq agent (acting as overriding agent) or anyone else in this station will propose it and it has to be accepted by a 2/3 or greater majority. What if the crisis is on a bigger scale? Then, the snq network can even perform a cut on the network. This is the most radical form of crisis action. It means cutting a piece of the qns network, expelling all the members from this piece and readjusting the network by making members from more external n-layers to go to inner positions in order to fill the gaps. This radical action can be proposed by anyone involved in the crisis and it has to be accepted by 2/3 of all the involved members including the associated nodes of all the deeper snq d-layers. In order to cut a piece of a d-snk layer the same process need to be followed but it will involve the approval of a more reduced number of snq layers, as there is a finite number of them. In all these cutting processes, the last layer, the deepest, must also counted in the approval process. This deepest and popular snq layer is, as already mentioned, a station formed by randomly chosen qns members. If the crisis occurs in sdl layers, the popular jury station will be formed by ddl random members who can under-

stand simple English, and if it occurs in ddl layers, the random jury will be chosen from any layer. Randomly chosen qns members can either accept or reject to form part of it.

## voting

Each 28 days each station needs to vote to refresh its agent if needed, and also its 0 member. Not all stations need to vote the same day, and the voting for agent and for 0 member does not need to coincide. The voting date for agents will be fixed after the founding date of the station and for 0 members after the station initial coupling with the snq network. The founders of the station will as well establish its family name, which can be changed later through macro democracy only, as each station names its emerging branch as well, so all branch members need to give their opinion and vote, or even a name proposal, why not. An agent or a 0 can propose not to be voted and the rest will have to respect this. A node can say as well not to be voted and this is to be respected too. Everyone will know which n and d layers they are more comfortable at. Voting is among those who are willing to migrate to an inner position. In case of a tie the voting will be repeated until there is no tie, but second and further voting will only include candidates that have tied as the most elected in the first round. The processing of reports will undergo voting as well in order to accept some aspects or to approve the final version to send. For macro democracy, voting will begin at the outer layers, where each station will vote, collect all results and send them through a report to inner layers. At each layer, each station will vote and sum their results to the already accumulated data and keep transmitting them towards the center of the network. This process will stop at the station where the issue requiring macro democracy has been emitted. The snq networks will be responsible of the fair play and will perform its own parallel vote counting as well as inspections of qns processes. They will also undergo macro democracy on their own networks. In macro and micro democracy all the votes are of equal weight and importance. In macro democracy only the total numbers are to be specified, along



with the partial sums at each layer, but it is the total result what counts. In these two democracies, votes will be globally anonymous but not to their own station, in order to be sure that there is no cheating. There must be nothing to hide because we are all supposed to seek the global good and in the case of radial mobility we should all remember that any layer is of equal importance. And of course, any node at any station can propose a change or a new rule or whatever changes it thinks of. The proposal will travel as a regular information package, subjected to priority changes and its own station's approval.

## qsn

For the last time, you need to draw. If you manage to produce overall clear pictures of all this you may consider to share them within r0oT or just share them by public media. I have not even tried to share my drawings here because they are not pretty enough and also because I want you to actively engage with the text. With a picture not made by you I'm sure your understanding of it would be less deep. Let's continue. In order for the qsn networks to blend with the qns one, the qsn cannot start with a one-member first layer. When it is growing, qsn networks will begin with a first layer of 9 equal members. Each will establish a qsn station by being their first agents, so at each of these 9 stations new members will attach, with 10 nodes (plus the agent) per station, in the usual style. When (and if, because some labels will stay low numbered) the 9 stations are full, we don't open layer 11. Instead, at random, one of the stations is chosen and dissolved. The remaining 8 stations will choose, at random, one node each and kindly expel it as well. The result is that we have 8 stations with 9 nodes each. All the dissolved and expelled members will then attach, randomly, at the once more created layer 10. When (and if), the layer 10 stations are full, a branch is killed at each layer in order to convert stations of 9 nodes into stations of 8 nodes, and stations of 10 nodes into stations of 9 nodes, so 10-stations can be opened again. The process is repeated as many times as the layer 10 becomes complete, and always the randomly expelled

are immediately attached to it. More than an expulsion it's simply a redistribution, so no one has to become offended by it. With that system, there is always a most inner layer with  $k$  equal members. They will form a special station with no agent, but with micro democracy. We define a  $k$ -qsn network with  $k$  being the number of people at the most inner layer. As a qsn network grows it increases its  $k$ -order. Who is doing this cut and paste process, choose randomly and also watching the health and possible problems in a  $k$ -qsn network? Of course, a dedicated snq associated to it, with the same structure as the generic snq networks, d-layers included. It is very important that specialist knowledge does not become corrupt, as it is right now happening on the real world surface. The visiting system will be regulated by the generic snq network, and during the visits, generic and specific snq members will interact to share and inspect possible issues. The visiting system works in the following way: the  $k$ -qsn networks are designed to blend into the qns network depending on their  $k$ -order. If  $k=5$ , the qsn network will temporarily be attached to a  $n$ -layer 5 branch. But there are  $5!=120$  branches, so when one visit ends, the 5-qsn network will visit the next 5-layer qns branch, following angular order. If the qsn network changes its  $k$  order it will change its visit cycle to  $k=6$  or to  $k=4$ , if it loses or gains an order, respectively. How long are the visits? If there would be a  $k=1$  qsn network it would be ideal to be always visiting, but this is the trivial case of the qns network visiting itself. If there would be a  $k=2$  network, it could be in two branches, so both branches should have this visit half of the time. If there would be  $k=7$  qsn networks at layer  $n=5$ , all of them should have equal visiting time but they would overlap. And even if possible we don't want to overload the stations with multiple visitors. At least not at inner layers. So let be  $k$  the order of the qsn network,  $j$  the number of them at a given layer with  $N$  stations, and then we establish that each branch should be visited again by a given qsn after  $D$  days. A possible solution is the following: if  $j \nmid N$  or  $j=N$  we divide  $D$  days by  $N$  stations and  $D/N$  is the number of days per visit. The qsn networks are then distributed with equal angle separations and they start to cycle. If  $j \nmid N$  we make  $D/j$  and again we obtain the

number of days per visit. But this time, when a qsn network finishes a cycle must wait some time before it can enter the cycle again. If  $D/N$  or  $D/j$  is not an integer number we must approximate by default, so 7.9 becomes 7. The generic snq network will watch the formation of all the qsn networks and their associated snq's. With this system, each specialist network will be constantly interacting with the main qns network and exchanging information. The greater the  $k$  the outer the rotating qns cycle of visits will be, but from the interaction with the qns, qns will report information to inner qns layers that will not be directly visited by high- $k$  qns networks. Of course, all the internal dynamics of qsn networks will be the same as in other networks already described. The  $D$  numbers need to be established from practical experience. We could begin by  $D=28$  as an initial value.

## random

Each time a random number is needed, it is for a station to emit it, not for a member alone. In order to get it, each member of the station, nodes and agent, will invent two 10-digit-integer number between 0 and  $NMAX=9999999999$ . For example, 7941567858 and 8765567845. And also their current Unix time, easy to get from web pages (just write `unix epoch` or `unix time` in `duckduckgo.com`) or by just typing `date +%s` on a Linux shell. This date is, for now a 10-digit number as well. For example, I now get 1472240054. So each member sends three numbers of 10 digits each to the 0 member of the station. Privately, without letting the other station members to know its numbers. The snq member will collect all these numbers. The first operation for it will be reversing the Unix times, for example, to convert 1472240054 into 4500422741. The second operation is to sum each digit separately with modulo 10. In this case we have  $7 + 8 + 4 \pmod{10}=9$ ,  $9 + 7 + 5 \pmod{10}=1$ ,  $4 + 6 + 0 \pmod{10}=0$ ,  $1 + 5 + 0 \pmod{10}=6$ ,  $5 + 5 + 4 \pmod{10}=4$ ,  $6 + 6 + 2 \pmod{10}=4$ ,  $7 + 7 + 2 \pmod{10}=6$ ,  $8 + 8 + 7 \pmod{10}=3$ ,  $5 + 4 + 4 \pmod{10}=3$  and  $8 + 5 + 1 \pmod{10}=4$ . The sum consists in just a regular sumation but forgetting about any second digit that it may appear. So

we get the number 9106446334. In fact, there is no need for adding by packs of three and then add the results to get a total result. We can directly sum all of them. For our example we continue with 9106446334 as if this were the total result for the whole station sum. We need now to divide it by  $NMAX$ , so we get  $9106446334/9999999999 \simeq 0.910645$ . This is the number that we'll define as  $u$ , a number between 0 and 1. Now, if the random number is required to be between, for example, 0 and 214, we just multiply  $u$  by 214 and obtain 194.878 which must be rounded by default to 194, which will be our randomly chosen number. It is very important that the 0 member does not include any number of its own. After all this process, this snq member has to inform the station of what is the resulting random number along with the rest of data, so anyone can check that there has been no cheating in the process. For each new random number needed, repeat the whole process from scratch.

## implication

The work of a r0oT member cannot be paid with money but it will definitely be paid with results, with a better world. Again, this sounds naive to s\p [doves] or laughable to snd [hawks], but not to qns or snq [magpies]. However we all have other things to do and usually enjoy from some hobbies, so we cannot expect this network to work at its maximum imaginable speed. I think it is not necessary. Learning how to participate can take some absorbing hours but once inside it shouldn't require too much time. The dynamics should be fast and simple, to the point, without wandering around eternal discussions. These can be carried to those willing to it, but they must not be a condition for membership. Time is precious and what we are doing in r0oT is just investing some time in the short-term to gain much more in the long-term. If you have children or direct family, this is a great opportunity to tell your particular genes to improve the odds for their future... If you don't care about the future and continue with your (active or passive, conscious or not) harming of Gaia, and pull the typical excuse of 'as I won't see it...' you shouldn't join r0oT. Maybe you can change your attitude, your

moral perspective, in the future and reconsider helping then. But for now, at the very first stage, I am calling for strong willed people with energy to build, rebuild and debug this organism until a solid foundation is achieved. And all of them should share a moral perspective from which a long and fair future is a first priority. Notice that the first steps are the most vulnerable to infectious infiltrations, because when the network grows, the way to change global rules becomes more difficult as macro democracy is required. So, in order to establish a good start we need to be strict and have our priorities clear. And be radical towards every possible sign of early infection. Once a solid foundation is set we can be more flexible.

## growth

This is the first and, as said in the previous section, the most critical and vulnerable stage of r0oT. Foundation, growth, expansion. I'm a single person writing all this and I will look for a handful of persons that, hopefully, will join me. I will also send this text to people that can join as well or at least help in its distribution. Any form of distribution can be helpful. However, each new layer has a factorial jump in the number of people needed to fill it. All members will send invitations to known people from all the world. Anonymous invitations from anonymous accounts, and personal invitations from personal accounts, to avoid compromising both identities. If you happen to find this text and don't have an invitation just write to the door email described before. If you don't receive an answer consider that this door may be broken, or cluttered with petitions. Wait some time and/or find others that will appear and write to them. Nobody with the will to participate and with positive energy into it can be plainly rejected, but they need to be tested first to show their true will. It is just too easy to say 'I will', but a whole world separates this claim from actual facts. Present will, not future will. Think that for most people, 'I will' means 'I would will if I would have the will' which actually means 'I won't'. I also expect hostilities from the powers that can easily feel threatened with the growth of r0oT, in the form of infiltrations,

hacking, discrediting through the media, scaring people willing to join to change their minds, ... All these would be indications that everything is working as expected. To fight back we need to take privacy issues seriously, to have hacking experts joining the network as well, in order to self-testing and debugging, especially into snq layers, and to be as many people as possible, all of them with critical and constructive thinking. I expect all the people from every Gaia or humanity-friendly NGO to join. I expect as well most members of the so called 'anonymous' community to join. It would be a total failure if such people didn't join immediately. Probably this proposal text has many bugs from your perspective, but you can join and try to correct them. This text is a bare minimum initial stone, and participation will mean actual creative construction. We are not going to do anything bad or evil in r0oT, so don't worry. We are the light, the 'Jedi' side if you like. We won't use violence of any kind. On the contrary, r0oT is aimed to protect Gaia and all people and other creatures in her. As we operate through a subway it is natural to think of us as beings hiding in the dark, but there is nothing dark in r0oT's ideas. The dark position of r0oT will remain so as long as the really dark ideas continue dominating our beloved and bright surface and our brainwashed minds. But I'll admit that joining r0oT, at least at the growth stage, requires some courage because our interaction may be considered illegal at some very restricting countries and also because pure privacy cannot be achieved over the Internet. If you are afraid of being monitored, tracked, just think that in r0oT we won't do anything against the human rights or against Gaia, on the contrary, we'll fight to protect and enhance them with a radical use of knowledge transmission, constant learning, non-corrupt communications and through pacific but firm actions against those who take human-rights and Gaia as a joke. Is this a rebellion? A revolution? You can think in these terms if you like, but I prefer Colin Tudge's approach: instead of a revolution that could fatally shake our already weakened world, we could speak of a *renaissance* [5], in which things don't need to change immediately by using violent methods, but they can develop wisely and slowly cooked. A renaissance in which the whole network becomes a constant

school for all, in which we can learn how to persist in time more and better. With more knowledge, respect and love for Gaia will follow. But inevitably, when confronted with those who won't accept to learn, to relearn, to respect and to love, to take care of Gaia, we will need immunity actions. These won't be violent, but they could be radical, peacefully radical, like to stop buying some products, ignoring some corporations, reducing them to what they really are: a weak minority that cannot be accepted to be in charge. As for your incredulity towards this network system, let me be clear. In order to achieve a working coordination we don't need to fill all the stations available. It is not an all or nothing approach. The more r0oT grows, the greater the coordination, but this does not mean that if we don't reach layer 11 we will not achieve many important things. You may also think that is plainly impossible to recruit the whole population to act in the good of Gaia. Most people don't care, don't give a shit, you can say. But take a look at the structure of r0oT and calculate the percentages that are required to fill each layer. You will find that in order to fill all the layers up to layer 11, with it included, we need  $1! + 2! + 3! + 4! + 5! + 6! + 7! + 8! + 9! + 10! + 11! = 43954713$  people, which, taking 7500000000 as the current population we find that is just less than 0.6% of the total. Having this 0.6% under strong coordination would lead to dramatic changes already. Later, filling layer 12 would require an additional  $12!/7500000000 \approx 6.4\%$  of the total population, which is harder but not Utopian. Think that layer 13 would be the immense majority of the population, and they don't necessarily need to engage with r0oT in a very strong way, but they could if they want to. Most people want a quiet and simple life in which to have fair conditions, and if r0oT offers them such a thing, 13+1 local reunions (on a weekly basis, for example) won't be an issue to achieve. There are already many local structures connecting neighbors, local business, work partners. We just need to connect with them with the global network. From outer layers all local problems could be launched into the r0oT structure in order to find responses to make. This is no utopia, but just the way it has to be.

## ngo

You may be thinking about which type of organization r0oT falls under. Is it a NGO? Of course, it could be considered like this, a very ambitious one indeed. And remember, with no one asking you for money. But it is more than that. If most of the humanity becomes coordinated, big corporations and governments will have to behave in favor of humanity and in favor of Gaia. This is what they are supposed to be doing now but (surprise) they aren't, and they don't seem in the mood to change their mind tomorrow. If people become coordinated and learn that we need to have better odds for our present and future, we won't be manipulated so easily by them. Right now they are lying to us, consciously or not. All the time. With total impunity. We need to grow our individual and global level of critical thinking. We will demand better leaders, better governments, more ethical and respectful corporations and laws. Free thinking has to override free market, otherwise the latter cannot have such a label. Gaia is first, then humanity as a whole, and only then partial privileges could be admitted for those seeking and deserving them. r0oT is designed, in its second stage, to force the powers in charge to act with these criteria, and to coordinate to build and vote parties and corporations that take power charges with responsibility. But the real power will remain within the people as long as people manage to stay free, with the freedom I described before. Remember that each station/branch will develop a series of rules that will always converge into some general principles at inner layers. There cannot be fundamental differences between different countries or humans. There cannot be laws against Gaia. Anywhere. So yes, for this second stage r0oT will remain a NGO, but a very demanding one, very strict with those who are in charge. A non-government but a government-shaping organization. And maybe, some day...

## go

What is politics after all? Isn't it the relation between different individuals in order to achieve

an organization that can be more beneficial than a non-political state? Politics is people trying to be better together than separated. It is interaction, coordination, optimization of resources and when these are limited, administration of them and building awareness on the importance of their sustainability. The direct question is: couldn't r0oT override at some point any other political activity or system? My answer is yes, or maybe, but not yet. In some future it is clear that the only fair rules will be those applied equally to everyone, and those in which a healthy Gaia can keep living within life-friendly limits. But it is soon to fantasize with this hypothetical third stage of r0oT. It would be great to reach stage 2 and achieve its associated goals. Maybe that would be enough, a reasonable end, but no one knows. For now, it is the time to begin stage 1 and start building. Maybe the first attempts will fail and we'll need different restarts. It doesn't matter. What would be totally against the r0oT principles is to start different and independent r0oT networks. It could happen, though, and lead to some weird r0oT wars that would only benefit the powers now in charge. They could be actively trying to promote the birth of other networks, other titans or gods, to keep their lucrative destruction while we lose time fighting between us. Does this sound familiar to you? Let's be not so foolish. We need a single r0oT, full of plurality and multiple representation, but with a single coordinated agency. Otherwise it won't work. All the words written here are just an initial proposition. A first draft for the statutes of station 2.1. They can be changed by macro democracy within all the members at a given time. There are and will be many things that cannot be foreseen until put into practice. First attempts or first steps could be considered test simulations in which some chaos can be present until some equilibrium arrives. Many aspects need to be debugged and rethought, new problems will appear and new solutions will need to be worked out. Surely r0oT will never be perfect, but things done are always improvable, while perfection only lies in the naive minds of lazy dreamers. It is time now to think what are you going to do to save the world. At last you have the opportunity to be a

real hero. An anonymous one because true heroism blurs when the ego enters in, and because our heroes need protection. Aren't you sick of the system, of the pseudo democracies of the first world, of the horrible status of the rest of the countries, of the black status and perspective of all Gaia? Have you ever complained that you wanted to do something but that you didn't know how, because what can a single person do? You were right, we do it together or not at all. This is the opportunity you were expecting. Maybe it's now or never. There is no legal binding, no money involved, no permanence conditions... Ask yourself, take your time, feel the chill, weigh your priorities, write to yourself, take a decision, consider how free such decision is... and ask yourself again, go through the whole process as many times as you need. It is not easy to see what you really want, when to stop thinking and take a firm decision to be defended with pride and arrogance. But... is it really necessary to stop asking and thinking, to become firmly sure, to put pride as a learning halt? Why? Why to stop a permanent improvement of your critical thinking, a constant enhancement of your freedom? You don't need a high level of mind perfection to join r0oT, just to accept the fact that all of your other activities may not be possible in some near future if you don't engage with this one. In fact, I truly believe that you don't have a single real reason not to join unless you are benefiting from Gaia's and humanity's destruction. And even then, such benefit would be as short-sighted as you. But in most of the cases you, dear reader, are just a nice person that would only benefit from a community that strongly believes in the fact that most people are nice. You are nice, at least at the bottom of your being, and you know it. Homo sapiens are mostly *nice*. Does this statement surprise you? Ask yourself why. When we say we are destructors we mean that until now we have been following the destructive trend of a few sociopaths that now are in charge because we have permitted it. Our uncoordination has permitted it. Our mistake, but one from which we have to learn. The idea of humans being intrinsically bad is just a tool of these sociopaths created (consciously or not, I don't know) to make us weak, to lose the faith in

our collective strength and to lose sight of our truly nice attitude. But now this is over. You can now see all these powers unmasked and discover that you are not a member of an intrinsically bad species. Surely, you will agree with me that it is time to accept this fact or we will remain without self-confidence, or in other words, being weak and manipulable. Time to accept that we are mostly nice in order to hit the next target: start *acting nice*, to make the niceness in our hearts useful and share it with our brains and hands, and apply it to each other, globally. Gaia, our mother, our world, needs you, as you need her. She has been nice to us for millions of years. Shouldn't we learn from her at last? Now find an excuse or just join r0oT. Now.

## epilove

So what is love, then? We could try to give a definition, but many of its essential aspects will escape from such a cage. Love can be defined as a feeling, but what is a feeling? Does this lead anywhere? Could a cold, bloodless discussion reveal a hint of all the warm blood encapsulated by those four, seemingly innocent letters? Love can be seen as a cold blood mechanism, the molecular conspiracy performed by our genes to intoxicate our consciousness so we can act in their favor, submitting all our power to them, rendering us, the individuals, as pure machines. Love could be seen as such subjugator force, indeed. Such is its tyranny that even if we rationalize and unmask its mechanisms, we still feel joy and happiness when working for it. So great is its intoxicating power. Love, however, could also be seen in the mightiness that unfolds in each of the movements of a living creature. A heartbeat, a protein's change of shape, a cell's mitosis, a dance step, a whale's breath or just a song. Love is present in the purposeless power, expressed with no other aim than saying 'I am life and life I am, here and now.' Under this point of view we could see the action of the genes as a parasite of love's power, in order to extract a purpose, something useful of this directionless dance. Or is it a symbiosis in which both perspectives are mutually

benefiting? What is more incredible, after all? The pulse of life, its beating power that emerges from an inert and quantum-clockwise universe? Or the organization in which those pulses are directed towards a longer and more complex future? Aren't both just unbelievable? I think that when we say love we feel the tragic collision between both interpretations. Because we feel the power of life and motion inside us, the freedom of agency above the inert world, the dance that simply dances, without worrying about time, efficiency or any other direction. But we also feel how this will has been shaped by history, how we have inherited the impulse of directing our drive towards the future. We notice how we are somewhat impelled to find a mate, to have children, to take care of them beyond our own's. The tragedy lies in a will to power that finds itself subjugated by the drive of time, of the genes, while at the same time knows that there is no real purpose beyond the single, purposeless pulse. The tragedy is that the purpose of life is life itself, that the power dances in all directions but only those enslaved by time are able to keep dancing in the future. When I say love I feel all this. I see the pulsating foundation of life present in every creature and also how such creature has been shaped by time, how time has owned its will to an extreme degree. We humans have experienced (at least some of us) life without an overwhelming tyranny of immediate necessity, allowing to meditate and experience through analysis and observation the inner impulse that beats inside each cell, and even inside each active protein or RNA/DNA molecule. Thanks to some leisure time and the accumulated knowledge of history you can discover, for example, that little insects have more or less the same organs as you. That they have lungs, livers, kidneys, hearts... or just some equivalent systems. That something you can't even see can be astonishingly similar to you. Then you start studying their behavior and learn that they feel hunger and thirst, that they can be afraid, that they make love... The more we study other creatures the more they resemble us. Classical philosophers had a tendency to find the separation that distinguishes us from the rest of the creatures, ignoring that the more we know the more this fictitious frontier blurs. When we undergo an hormonal change we feel im-

mense changes in our feelings. Then we learn that plants have hormones as well and that their levels change according to their life cycles and also as they react to their environment or interact with other beings. Sure, you will say they have no nervous systems, but has someone determined with rigor that it is a nerve and not a hormone what gives the feeling its feeling character? No one knows. When we try to define consciousness we usually say that it is based on awareness. But an individual cell is aware of itself and its environment. It reacts, it adapts to it. It acts accordingly to its world. It pulsates and struggles towards time and against thermodynamic equilibrium. Isn't this awareness? Some will answer: what we have and they don't is the awareness of awareness itself. But this, as far as I can see, is a very narrow and poorly defined escape. The more we study and learn the more we find awareness, life and love everywhere at all scales. How many people are in this empathic state right now? We usually agree that all humans need to go to school because poor literacy produces big problems, for example the locking of poverty. Well, we need to take on step further in alphabetization. We could call it alphabetagammization... It consists in reaching a state in which (at least) most humans learn about nature, about how close we all are. It is not enough to explain this in a classroom. We all need vivid examples to be reminded of this almost each day, from many approaches. We need an empathic world and this needs to be hardwired in each baby's brain from the moment it is born. The education of the children is a responsibility of all the society, not just the parents and teachers. And so is the education of all adults. There is no greater power than education. And no greater freedom than the one that those who have been educated possess. The first step in the path to love is to learn and to educate. We all need to act as learners and teachers from now on. We don't need a lot of knowledge to love our parents, our children and those having a direct genetic link. For those relations, instincts have built very strong bonding feelings. But how ironic: such iron links to discriminate minimal genetic differences, and such loose feelings to acknowledge the huge similitude of the bulk of our genetic content. Our children share most of our genes, but so does every other human

being, and most of living creatures on Earth. The particularity of your children is that they carry some superficial specificities of you and your parents, and that is why you love them so much. But now think: following this logic, how much should you love the rest of the living beings, who share almost everything with you, especially the deepest and most common of our traits: the living pulsation? The answer is: a lot, a huge lot. The problem is that you don't usually have this love preprogrammed before birth. It is in the process of learning when you start discovering how strongly linked you are to every other being, even to a bug or to a tiny plant. You start to notice how you share with them the foundation of life, the absurd and purposeless impulse of life, while at the same time you share the tragedy of being slaved and shaped by time and the Darwinian selection. You start discovering how all the world, all Gaia, is your family. How joy and suffering, will to power and pain, love and fear... are felt by all creatures with no exception. You start noticing how humanity is behaving right now as a very big and nasty sect, considering itself as privileged, with the right to submit the rest of the world under their feet. When you learn better you discover that there is no such thing as 'right' in nature. And if our big brains do not lead us to form stronger links with such nature, to a deeper empathy, what is their use then? Can we call intelligence to such blindness, deafness, insensitiveness...? Having a bigger brain implies having more power, but this includes the power of learning and acknowledging our link to Gaia. Without the knowledge of love, our brains are just destructive machines, perfecting their capabilities for killing. But, once you discover what love truly is, you cannot stop at just loving yourself and your direct family. The #1 goal of r0oT is, through alphabetagammization of all people, to unlock the power of love. To expand it, teach it, infiltrate it in every human soul, even in those who seem, at first, most refractory. Following this path we could achieve a true civilization, one that includes all members of Gaia, beyond humanity. In other words, one that acknowledges that we are all family. Gaia is our family. Knowledge is our path. Love is our link.

*The r0oT project is dedicated to the memory of my best friend, Raquel. We loved to walk while planning how to change the world. I'm sure she would have been the first to join.*

## References

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