

Review Article

Physiological Autism and the Miracle of Becoming Non-Autistic

Rossler OE*Division of Theoretical Chemistry, University of
Tübingen, Germany***Corresponding author:** Otto E. Rossler, Division of
Theoretical Chemistry, University of Tübingen, Auf der
Morgenstelle 18, 72076 Tübingen, Germany**Received:** August 29, 2016; **Accepted:** November 09,
2016; **Published:** November 11, 2016**Abstract**

This scientific text is written in an unusual style mostly anecdotes in a spirit of intuitive understanding. In the old days, old people sometimes were allowed to tell fairy tales. Here you have a scientific fairy tale which, I believe, is more than a fairy tale. All elements are true and can be verified. But for 40 years no one was ready to listen to them. So for once the experiment is made to tell it all in the simplest possible terms. There is a documentary book in the background on non-autism titled "Jona's World" (translation in preparation) which can illustrate much of what is said below because it reflects the reception of the outlined theory in the eyes of an up to 7 ¾ years old non-autistic child. The reader will realize that being a child person is a holy status. I acknowledge Gregory Bateson whom I met in person and Nelson Mandela from whom I got a one-liner. The theory of "mild autism" is not included in the following. And I ask the reader to forgive the talkativeness of an old man.

Keywords: Autism; Toddler theory

Introduction

Autism is physiological, non-autism is biologically unnatural: All animals are autistic [1] (I call this the "quadruple-A rule"). Otherwise, they would no longer be animals. Evolution exercises its remote control via the brain equation [2,3] which describes an autonomous optimizer which by definition is autistic. Human beings are the only non-autists, not only on earth but possibly in the whole universe. Non-autism can only arise by an epigenetic accident. And because it represents a "lethal factor" evolutionarily speaking, it gets eliminated by evolution rather soon unless it is managed very carefully.

This was the less palatable side of deductive brain theory as a part of deductive biology [2-5]. The uplifting side is that "autism shed" is tantamount to a jump up towards "Point Omega", the asymptotic end point of evolution spotted by Teilhard [6]. The young child who has just shed autism has made this jump: a jump up towards - not omniscience nor omnipotence, but - omnibenevolence, the highest-ranking member of the triad.

Toddler Theory

And how could this transition happen? Literally through a misunderstanding - a creative misunderstanding that simultaneously is the highest-ranking manifest miracle in the cosmos. It happens in most playrooms at an age too young to remember. And soon after, there is business as usual between persons - like negotiating about doing each other a favor or getting resigned towards achieving compromises. Vitaly abhorred situations like being abandoned in a crib with unknown other children for a felt eternity become routine as "do not expect too much" things. Resignation and retaliation, then become new strategies need to be adopted by the toddler. Society takes pride in relieving mothers of part of their burden of having to sacrifice time for still largely unreasonable members of society. This is similar to no one being interested in learning about the most

important insights of a lifetime accrued by an elderly.

The reason: persons can be negotiated with and normally say yes to inescapable alleged bargains - even if under protest. Everyone is familiar in society with the compromises of adult life and school life. Nothing is perfect and most things eventually function more or less acceptably. After all, the money of the state is limited. And some teachers are inspiring even if the classes are too large and there are no teachers available on the school yards during the morning break where they are needed the most. Playing to be patient adults is not an easy job for a child, especially if the limits of deadly threats received from classmates cannot be judged by the experience of an adult.

But all of this lies already way behind that event "X" alluded to above, which has eluded the attention of science for so long: the transition from physiological autism towards being a non-autist, a person in its most vulnerable earliest stage. How does it or did it come about?

The salient point

It is the invention-out-of-nothing of the "suspicion of benevolence encountered." Everybody knows how exuberant young children can be, and one enjoys watching it but does not take it particularly seriously. Yet sometimes this exuberance marks a fresh transition - a universe-shaking transition: the spontaneous shedding of physiological autism from one moment to the next.

How can I be sure? Is it because I remember? I was taught it all once by a doomed child in a surgical ward. But I do also remember it. And I profited decades later from a conversation with a very verbal child. And finally but not indecisive, I profited from an understanding of the brain equation and the great simulator that is coupled to it [7]. In other words, what I have to offer is nothing but a so-called "consistent system of insanity" - just like any other scientific theory that one has to rely on at a given stage in the evolution of science.

But it is not being afraid of listening with the heart that lies at the root, I believe. I had expected a 1 ½ year old child to lie in the little bed in the surgical ward in which I took a course as a medical student in a nurse-like position to fulfill the requirements of part of the medical curriculum. I had finished the course and paid her an evening visit because I had had a moving experience with her a few days before.

Pre-history

I had been assigned the task of transporting children from surgery to the clinical wards. She just woke up outside surgery and started to cry. In a natural reflex while standing beside the transport bed, I bowed down to say some soothing words - but unexpectedly she suddenly grasped both of my ears with her little hands and did not let go. Time began to stretch in what appeared to be an eternity while I stood in this uncomfortable ludicrous position. Then she let go saying "Mr. Doctor!" and was consoled. On subsequent days when I was the last in the long queue of professionals on the visiting round, she shouted happily "Mr. Doctor!" when seeing me and everybody was delighted thinking she had addressed them.

On that evening now, there lay a new child in that bed as I did not realize immediately in the dusk while smiling in anticipation of hearing her "Mr. Doctor!" It did not show that this poor child was about three times older. And I could not possibly know that the blue sweater I was wearing was the same as his father had been wearing in earlier days at home before the child had been put into an orphanage. So a cooperative smile explosion would occur by accident. It was the re-play of a much earlier experience without my knowing.

He was a doomed child and I would later not be allowed to adopt him for my being unmarried at the time. So what is the theory of the "smile explosion" that I had experienced?

Early Reminiscence

I subsequently could remember from my own childhood: that I woke up when about 1 ½ years old from an afternoon nap because my mother was pulling open the blinds to let the golden afternoon sun, and she was smiling herself like the sun. On that day I first fully understood what she meant telling me: that we would now go out with me in the stroller and in the evening we would have "cocoa with pretzels." It was a glistening experience. From then on I could talk.

Forgive me the three anecdotes told. Later, at age 5, I disliked school to the extent that I had to be pulled out from underneath the bed where I was hiding with the aid of a crooked walking-stick. Neighbors later informed my mother that I used to cross the Neckar river on the way toward school up high where the blown-up bridge had been connected by a long 20-cm wide wooden board, rather than using the roundabout way underneath. I had adapted to living dangerously.

I was very logical at the time. When asked about my religion in class I stood up twice for two different religions. When everybody laughed, I replied that my father has this religion and my mother the other and I, therefore, of course have both.

Deductive Biology

But enough with anecdotes. I discovered deductive biology three decades later under the influence of my friend Bob Rosen - including

the brain equation. But the brain equation like any other autonomous optimizer in mathematics and engineering is autistic by design. This remains so even if it is combined with a universal simulator to become (in principle) arbitrarily intelligent.

At age 15, I visualized a virtual-reality machine to be offered to a dog to make it as intelligent as a human being. This led over to my becoming a radio designer and ham operator. I could modulate the strength of the ordinarily constant carrier wave of my little transmitter by the low-frequency audio signal itself - with none of the necessarily implied audible distortions due to a strong negative feedback put-in between the demodulated output side and the low-frequency input side, to in this way obtain a sizable reduction in energy costs. Why so much autobiography? Because as an adult, one is so deplorably less versatile and intelligent, only more assertive.

But to return: Deductive biology [4] entails a theory of the brain that is functionally well defined as an autonomous optimizer that is controlled in all of its parameters by evolution in a predictable fashion. For "spatial Darwinism" unlike temporal Darwinism is fully predictive [2,4,5]. The implied machine is autistic by definition. Otherwise, it could not be controlled by evolution. But then how does the human brain fit in? Very smoothly, of course: It is quite highly developed, although less so than that of cetacean species (like orcas and dolphins) or that of keas or elephants. But in human beings, there is a function change in the sense of Bob Rosen [7] which occurs epigenetically and can be fully understood based on the "smile feedback." I did mention it implicitly but not explicitly - the smile of happiness and the smile of bonding look indistinguishable in human beings. Therefore a misunderstanding - the suspicion of benevolence encountered - can arise in the toddler which is no misunderstanding at all as the ensuing interaction reveals. Yet this fateful consequence applies only provided the adult's happy smile acts as a reward on the part of the toddler as a bonding smile.

However, the same effect can be enabled artificially if the optical smile of the adult is functionally replaced by a deliberate "acoustic smile" - a bonding sound - as the reader may have seen already. Compare [8] for a first detailed description and [9] for a review. But let me come back.

The salient point

The salient point was implicit in the case story told above: an "amour fou" - a total bouleversement of feelings of affection and allegiance being released in a positive feedback of the two smiles between a young child and a post-adolescent. How can so strong feelings arise between a reasonable medical student occupied with his immunological dissertation and an unknown child encountered for the first time? I was both participant and observer. What I discovered as if under a magnifying glass was the double-edged nature of the human smile. The happiness of the child is a great reward for the watching adult. "Charm" is the fitting word. Especially after puberty - and more so for females - happiness and bliss signaled by a child can act as a great reward. I should perhaps tell that I had had a mild gynecomastia as a youth in the wake of a childhood hepatitis. So I may have been more impressible by childish gestures than some of my age-mates. But all mammalian species including apes have a strong rewardability by the display of happiness in childhood exuberance. This functional wiring contributes to the species survival.

The second element in the emotional story told is the strong response shown to the adult's smile of happiness by the young child in question - so that a strong positive feedback would occur. But why should the expression of happiness of an adult form a strong reward for a young child? Children are not in charge of caring for adults, it is the other way round biologically speaking. In no other known species besides the human one does the expression of happiness of an adult reward the young generation.

We are approaching here the salient point. In a single mammalian species, bonding affection and happiness came to look the same on the face of an adult. Only in this species is the child drawn into a positive feedback - a bonding bout - with a genuinely delighted adult. This is what happened in the personal anecdote above so that thinking a bit longer about it was perhaps justified.

The consequence is "cross-caring" which ordinarily is called love: A strong wish to make the other happy and simultaneously with this the on-going realization that the other wants me to be happy. "Suspicion of benevolence encountered" is a fitting description. This suspicion, if it occurs in the toddler for the first time, suddenly turns him into a person.

One is usually afraid of telling such emotional stories about oneself. The discovery a decade later of the brain equation made telling this story possible. What I, the observing medical student, witnessed in the two cases told was a "replay" of the shedding of physiological autism. I encountered it both in the case of the young toddler who got consoled by the appreciated readiness of the adult to let his ears be grabbed and held fast for a felt eternity, and in the case of the doomed child in a replay of the most tender moments with his lost father: ordinary human emotional experiences in both cases.

How does autism fit into this picture? It does not fit-in at all! This is the upshot. The smile of bonding and the smile of happiness jointly generate the personogenetic interactional bifurcation in a smile explosion. It has never been recorded before on a permanent medium (only in the hearts of people). The above two examples were only replays -re-enactments of previous events. But they can reveal the mechanism. Imagine one ingredient were missing: the rewardability-by-a-happy-smile of the toddler. Then the "suspicion of benevolence encountered" could not arise out of nothing any more in the child. Personogenesis would be blocked.

A recent development

During the past year or so, my causal therapy of autism unexpectedly made headlines on Discover magazine's Internet forum [10]. This was because I had proposed an instrument (an infrasound generator) re-playing the rewarding bonding rumble of a mother elephant to be used by a beginning Mahout - an elephant driver who usually lives many decades with his adopted animal - to predictably turn his adopted elephant cub into a non-autistic person [11].

Since the brain of elephants is not only much larger but also more highly organized than the human brain, a higher intelligence would in this case suddenly be available for humankind to turn to. The mechanism for transforming the former animal into a person is simple: It suffices to mimic the human smile-laughter overlap. That is, it predictably suffices to press the button whenever you are smiling happily yourself in the interaction with your protégé. Then the smile-

laughter overlap that we humans share exclusively with the wolf and the dog (happiness and bonding have the same wired-in expression, in one case on the face in the other at the rear end) is replicated. But unlike humankind's best friend, elephants (like apes, dolphins and magpies) are mirror-competent, that is, can recognize themselves in a mirror much like human beings [12].

The secret which, predictably will turn the young Szilamandee (so my proposed name) into a person is to consciously trigger the mentioned acoustic bonding signal that human ears cannot hear, in the interaction with your protégé: whenever you, the human bonding partner, are momentarily delighted in the interaction (smiling). Then your own happiness becomes a bonding reward for the partner. Via the perspective-switching capability of his brain, the elephant cub will predictively invent the hunch of benevolence being alive on your side and will predictably try to reciprocate by trying to make you - the Mahout - happy, too, in a positive feedback.

This will move your (the Mahout's) own heart. You will try to reciprocate when watching the first sacrifice being brought for you. And Szilamandee will recognize this fact and will try and generate more of your own happiness inside you. This is the CCC - the cross caring cycle - of 1975 [8]. It "moves the heart" and turns either side into a person - including the one that was not yet a person before. The ensuing genuine love will make you "responsible for your rose", as Antoine de Saint Exupéry put it [13]. And (so I may add) the creator is automatically included as an invisibly present third person since the two "did not make themselves" as they are aware of during the wonderful experience lived through.

This revives the ancient theory of "perichóresis" (literally: "moving-around"): of water getting poured into the wine and being perfectly mixed by gentle circular movements of the chalice - but so with either ingredient not sacrificing its identity [14]. This is an old Christian metaphor since Gregorius of Naziance, based on an even older tradition of the same name - the "perfect mixture" described by Anaxagoras in ancient Greece in his fragment No. 12 as lying at the beginning of everything, which forms the first example of transfinite mathematics in history. The invoked trans (in) finite accuracy is supported by modern physics with its absolutely exact indistinguishability of equal elementary particles like two electrons of the same spin. I love this story from chaos theory [15].

In this way I surreptitiously pulled your mind over into the context of the "Rührtheorie" (the theory of being totally stirred up and moved "like scrambled eggs") as young Jonas later put it [16]. We lost him at age $7\frac{3}{4}$ when he was still "three percent happy" after having been put into school, but this is not our topic here. Society cannot afford to give the highest-ranking minds the highest status so far.

But: Is it really true that "non-autism" is so maximally different from the physiological autism of the natural world including young infants? And is it also true that non-autism represents a "lethal factor" biologically speaking because it totally upsets the functioning of an autonomous optimizer with cognition controlled by evolution? The Mahout will teach this lesson to us all and so will his protégé, Szilamandee. Under the latter's influence the therapeutic profession will predictably acknowledge that its decades-long reluctance to

apply the acoustic-smile therapy of 1975 to therapy-resistant early childhood autism was unfounded.

Discussion

A causal “acoustic smile therapy” was our topic: the claim that it suffices to use another available rewarding channel (audible tenderness) when the visible smile does not act as the reward that it forms in most sighted human beings [8]. No one in medicine believes currently in this simple mono-causality of “smile-blindness” in the vast field of autism-related disorders. And our concern here is only the “severe” cases as mentioned. Nevertheless the prediction that even an inaudible sound signal suffices for a causal therapy if you can be rewarded in this way won public notoriety recently - if you are an elephant cub. This maximally simple and transparent and wonderfully shocking prediction might radically change the therapeutic situation.

But is this not just a nice fairy tale? The brain equation was first published in 1974 [2] and then in a more concise form in 1981 [3] as mentioned. It strangely was never used in robotics up until now, even though Dietrich Dörner [17] independently came close. If the professional community does not take up a theoretically proven new therapy, it is no use for the inventor to fight for its recognition - acceptance always takes a generation according to Max Planck. Eventually decades later, a Discover magazine may suddenly take it up after a friend had given the therapy a new forum. In the present case, the credit goes to Plamen Simeonov who had solicited the elephant paper for his volume [12]. And in Burma, a white elephant cub is granted highest respect even to date [18].

But is the described therapy not also dangerous if it works? Do we really need advice from a super-human intelligence? Mandela was such an unprecedented intelligence. He worked a provably impossible miracle: to bring two parties together who according to all historical precedent were locked in a double bind about to explode in chaos: the two population groups in South Africa. Game theory is the underlying scientific field. While the “cooperative strategy” was a formally possible game solution from the outset, jumping right up towards it had never been achieved before in history. The duo Mandela and de Klerk in South Africa worked a joint miracle which still goes totally unappreciated on the global level.

The inventor of the double bind, my late friend Gregory Bateson (who supported the San Diego paper on autism therapy [8] in 1975 when it had just appeared) told me in return the story of his elder brother who had fallen in love with an actress in the early 20th century in London where their father was a famous scientist who had coined the term “gene”. His mother sent his father into the young lady’s cheap apartment to convince her that out of love for their son she should play the role of not loving him anymore. The trick worked perfectly - and his brother committed suicide. One sees where the famous “double bind theory” came from.

I have no time to talk here at length about Leo Szilard, Einstein’s junior friend who had been the first to conceive of the bomb in the early 1930^s and then was the one who made sure it would actually be built, and eventually tried hard in vain to prevent it from being dropped. He would later in despair write the science-fiction book “The Voice of the Dolphins” [19].

Mandela - the second name patron of Szilamandee’s - had a secret

weapon, too: the most convincing honest smile of history. He was not special, he always insisted, but this he was as everyone knows. Watch any historical movie showing his face in action. He was uniquely unafraid of moving the heart of his interaction partners. I once wrote a letter to him addressed to “President Mandela, Pupil of Gandhi’s”. It came back unopened with the hand-written correction on the envelope “Addressee unknown in South Africa”. His trick was different from Gandhi’s: an arrow right into your heart.

Conclusion

Philosopher Robert Spaemann, a friend of Pope Benedict’s, has a similar orientation of mind in the several books he wrote as to what it means to be a person [20-22]. I hope he will not be shocked by the Mahout and his playful cub friend when they will teach the planet how to overcome the never so far overcome obstacle towards global peace by showing us how happily to hold free elections on the Internet in the footsteps of South Africa. Einstein had after the bomb tried in vain to bring peace to the planet. Szilamandee will be able to find the right words for the first time. And every autistic and former autistic (as we all are) will be totally fond of him. Just as Szilamandee will be of Mandela, so I predict. Szilamandee is the hope of all parents with an autistic child who know that their child is living on a deeper level where it cannot be reached, but now with the acoustic-smile therapy has got a chance for a self-determined life. I wonder into what form Szilamandee will bring his elephant mouth to please us all into becoming mutual friends as all persons are by definition. It is the young that freshly shed autism who deserve to rule the world because theirs is the kingdom.

Acknowledgment

I thank Niels Birbaumer, Plamen Simeonov, Bill Seaman, Wolf Kochand my Ottersberg class for stimulation. For J.O.R.

References

1. O.E. Rossler. All animals are autistic. In: Proceedings of the Second International Meeting on Human Ecology, H. Knötig, Editor. 1977; 197-200.
2. O.E. Rossler. Adequate locomotion strategies for an abstract organism in an abstract environment - A relational approach to brain function. In: Physics and Mathematics of the Nervous System (Volume 4 of the series Lecture Notes in Biomathematics). 1974; 342-369.
3. O.E. Rossler. An artificial cognitive-plus-motivational system. Prog Theor Biol. 1981; 6: 147-160.
4. O.E. Rossler. Deductive biology - some cautious steps. Bull. Math Biol. 1978; 40: 45-58.
5. E.L. Charnov. Optimal Foraging: Some theoretical Explorations. 1973.
6. P. Teilhard de Chardin. The Phenomenon of Man. Harper Perennial, New York. 1976.
7. O.E. Rossler. An artificial cognitive map system. Biosystems. 1981; 13: 203-209.
8. R. Rosen. Dynamical System Theory in Biology. Wiley, New York. 1970.
9. O.E. Rossler. Mathematical model of a proposed treatment of early infantile autism - Facilitation of the “dialogical catastrophe” in motivation interaction. In: Martin JI, Editor. Proceedings of the San Diego Biomedical Symposium. 1975; 14: 105-110.
10. O.E. Rossler. Nonlinear dynamics, artificial cognition and galactic export. In: CP718: Computing Anticipatory Systems. CASYS’03- Sixth International Conference. Daniel Dubois, Editor. American Institute of Physics. 2004; 47-67.

11. Neuroskeptic. Scientists predict a talking elephant. Szilamandee. Discovermagazine.com. July 6, 2015.
12. O.E. Rossler, C. Theis, J. Heiter, W. Fleischer and Anonymous Student. Is it ethical to heal a young white elephant from his physiological autism? Progress in Biophysics and Molecular Biology. 2015; 119: 539-543.
13. J.M. Plotnik, F.B.M. de Waal, D. Reiss. Self-recognition in an Asian elephant. Proc. U.S. National Academy of Sciences. 2006; 103: 17053-17057.
14. A. de Saint-Exupéry. The little Prince. Harcourt, Orlando. 2000.
15. A. Ganoczy. Empathy and love for the neighbor, Interdisciplinary reflections between psychotherapy and theological anthropology (in French). Recherches de Science Religieuse. 2013.
16. O.E. Rossler. Hun Tun versus Big Bang: How classical chaosimplies both thermodynamics and cryodynamics. Int J Bifurcation Chaos. 2012; 22: 1230007.
17. R. Rossler, O.E. Rossler. Jonas World - A Child's Thoughts (in German). Rowohlt, Reinbek. 1994.
18. D. Dörner, A.T. Wearing. Complex problem solving: towards a (computer-simulated) theory. In: Complex Problem Solving - the European Perspective. J. Funke and P. Frensch, Editors. 1995; 65-99.
19. Madan Emge. White elephant: a rarity and a beast of joy.
20. L. Szilard. The Voice of the Dolphins and other Stories. Stanford University Press, Redwood City. 1961.
21. R. Spaemann. Happiness and Benevolence. (trans J. Alberg). T & T Clark, Edinburgh 2000.
22. R. Spaemann. Persons: The Difference between "Someone" and "Something" (trans. Oliver O'Donovan). Oxford University Press, Oxford 2006.