ENTERING THE WORLD TECHNOLOGICALLY: EARLY ENCOUNTERS

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ARTICLE INFO	ABSTRACT
	Technology is changing the world and becoming the world itself. The technical work as a world becomes a scheme that accommodates people and things in a seamless manner as they work together in an unforced manner. In generic terms, the relation of works and worlds, and the corresponding experience of a technical world is established with reference to Ludwig Wittgenstein. The practical and metaphorical example is the incubator for premature babies, which creates a safe atmosphere for the life of the newborn. The incubator represents a technically created world that becomes a protective «shell». The early adoption of digital technologies by children is also partly due to the desire of parents for safety and quiet. The success of early introduction to mobile devices relies greatly on new technological devices with touchscreens and visual interfaces. In the digital world, small children have much more power, agency, autonomy, the ability to change the environment, and at the same time have fun. Modern children enter the digital world at almost the same time as the physical world. They cannot distinguish digital and the physical worlds according to a criterion of reality. The convenient world of technology built by adults becomes a shell or even a trap for children that is perceived by them as a natural and necessary part of the world. Children perception becomes magical: they are affected by magic seduction of the touchscreen, which recomposes a reality that is interrupted, suspended, and returns it as modified, technicized. © PNRPU

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ВХОЖДЕНИЕ В МИР ТЕХНОЛОГИЧЕСКИ: РАННЕЕ ЗНАКОМСТВО

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АННОТАЦИЯ

Технологии меняют мир и становятся самим миром. Технология как мир становится схемой, органично вмещающей людей и вещи, поскольку они взаимодействуют без принуждения. Практическим и метафорическим примером является детский инкубатор, который создает безопасную атмосферу для жизни новорожденного или даже плода. Инкубатор представляет собой технически созданный мир, который становится защитной «оболочкой». Раннее освоение детьми цифровых технологий также отчасти связано со стремлением родителей к безопасности и покою. Успех раннего внедрения мобильных устройств во многом зависит от новых технологических устройств с сенсорными экранами и визуальными интерфейсами. В цифровом мире у маленьких детей гораздо больше власти, свободы действий, самостоятельности, возможности менять окружающую среду и в то же время получать удовольствие. Современные дети входят в цифровой мир практически одновременно с физическим миром, когда цифровой и физический миры невозможно различить по критерию реальности. Удобный мир технологий, построенный взрослыми, становится для детей панцирем или даже ловушкой, воспринимаемой детьми как естественная и необходимая часть мира. Восприятие детей становится магическим: на них действует волшебное обольщение сенсорного экрана, который перекомпоновывает прерванную, приостановленную реальность и возвращает ее видоизмененной, техлогизированной.

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Introduction

Human-technology interactions are being studied nowadays from many different angles. However, the gradualness and constancy of ongoing changes hinder grasping their specific character and significance.

One of the aspects that demonstrate the implications of technology is the relationship of young children with it. How early and how one gets acquainted with technologies, what role they play in family relations and the environment shape not only a particular person's future interactions with technology, but thereby also the fabric of human society in the future.

Research confirms that every year the age of familiarity with technologies is decreasing while the number of young children using them is growing. The data varies by country and becomes outdated fairly quickly, but we will give some figures that show trends. The age of earliest contact with smartphone, tablet etc is commonly around 7–9 months [1]. In the United States, most 2-year olds use a digital device daily, and 9 of every 10 children are introduced to a device before their first birthday [2]. One study reported that 60 % of children younger than 3 use touchscreen devices [3]. The percentage of children aged 0–8 years using a mobile device increased from 38 % in 2011 to 72 % in 2013. Focusing on 2-year-old children the increase was even greater, moving from 10 % in 2011 to 38 % in 2013 [4]. 42 % percent of children age 0 to 8 have their own tablet device (up from less than 1 % in 2011), average amount of time spent with mobile devices skyrockets, increasing nearly ten-fold over 6 years, from five minutes a day in 2011 to 48 minutes in 2017 [5]. The trend towards earlier acquaintance with technology signifies a change in attitude towards it and understanding it.

This study is devoted to technology in the world and technology as a world, and the children who go there.

1. Wittgenstein's Question Concerning Technology

Ludwig Wittgenstein was an engineer by training but as a philosopher he was not interested in technology, in building and making, or the way we experience the modern industrial world [6].

He was not interested in homo faber but only in homo depictor. This is largely because he encountered philosophy and learned what it was through books like Bertrand Russell's „The Problems of Philosophy" – and those problems were the problems of epistemology, language and metaphysics: how can we know the world by way of correctly picturing in our mind the features of reality [7]? To solve the problems of philosophy was to solve the problem of skepticism and the question of how representations can agree with what they represent.

Accordingly, for Wittgenstein, „the world is all that is case" [8]. It is a totality of facts and to that totality corresponds a very long list of all the true propositions which represent these facts. All this goes under the name of the „picture theory of language and world."

Wittgenstein drafted his philosophical work – the only book that appeared during his life-time – while he was an ordinary soldier in World War I. He drafted the *Tractatus Logico-Philosophicus* in a diary and in notebooks which he kept during that time [9; 10]. As a soldier he was strangely death-defying, fearless, some have said: heroic, others maintained: suicidal, all the while reading Dostoevsky's *Brothers Karamazov*. His analytic gaze kept him aloof, as he observed himself, wrote down seemingly isolated philosophical remarks, and spotted the position of enemy fire in the heat of battle. His „solution" to the strictly theoretical problems of philosophy thus originated at a time and in a place where the technological powers of the industrial age became unleashed in an unprecedented way - in an orgy of violence and destruction.

In October 1916 Wittgenstein received military honors, was promoted and moved from the frontlines to an officer's training school. His diary appears to end here, only the notebook continues. On October 8, we find an odd remark with the sudden appearance of a genuine, albeit fleeting interest in a philosophical question about technology. On the previous day he had recorded a reflection about the way in which things constitute a logical space, and now, for a moment, he sees things in a technical space. And this moment is strangely intimate, warm, comforting:

„As one thing among other things, all things are equally insignificant, as world they are all equally significant.

When I contemplate the oven and people tell me: but now all you know is the oven, my results then seem small or petty, indeed. For this makes it look as if I studied the oven as one among the many, many things in the world. But when I contemplated the oven it was my world, and everything else faded against it." (Oct 8, 1916) [10].

One can interpret Wittgenstein's remark as a somewhat incidental merological observation about parts and wholes and wholes being more than the sum of their parts. But this would be to overlook its significance in relation to his project of solving the problems of philosophy.

When in a world of things all of them are equally significant, and when the warm oven is his world, all other things fading away – are we still talking then about a world that is all that is the case? In that world as the totality facts, all facts have the same value, namely no value – they are insignificant or only a long list of contingent things [8]. In contrast, the stove as a world is a limited whole – and in the *Tractatus Logico-Philosophicus* the world as a limited whole makes it appearance only at the very end. Though he does not mention the stove in the published work, there is a reminder of what can happen when one contemplates the stove and lets it become one's world: „The feeling for the world as a limited whole is the mystical" [8].

Wittgenstein's remark about the mystical feeling refers to something that cannot be captured by picturing, representation, and ordinary linguistic production. At the same time it might, but does not necessarily refer to anything transcendent, religious, sacred. The world as a limited whole refers to mundane technical works like the oven – in which all things are significant in that they constitute this world. And thus, after closing the chapter on the problems of philosophy, Wittgensteins moves at the the end of the *Tractatus* into a whole new, different field - that of the problems of technology.

2. Works as Worlds

There are technically created works of art and there are artfully created works of technology. It is very familiar to talk of artworks, of a musical *opus*, but less familiar to speak of technical works. What first comes to mind is clockworks, mechanical works, then a steelwork and waterworks, paperwork and networks.

In all of these uses of the word, works are composed of things, and composed by humans. As opposed to things, all works are crafted or created. Artworks as well as technical works organize things in such a way that they can produce an effect, that they do something, perform work. Most important for our purposes is the organization of things in a work – in other words, that they form a world. It is not essential for technical works that they have human authors and that these are intentional structures which fulfill a specific function for us. In fact, many technical works are significant as a world quite independently of their practical usefulness or expressive content. They are significant and attractive for how and that they are made, for their internal organization and mere functioning.

The work as a world is philosophically interesting especially because of the way in which we experience and know it. This is of general interest because a work is a world to be experienced and known. Inversely, the world can be seen as a work. A clockwork, for example, is a limited whole of things that are working together and thereby perform work. Also, however, the physical world as a whole has been considered to be like a clockwork, and metaphorically speaking, we can say that nature also creates works in which things are working together to perform work Organisms for example. This is more than a play on words. We experience and know a working of order of things by participating in it – haptically and imaginatively, physically and virtually. Picturing the world as a totality of facts requires distance and a medium of representation. In contrast, to know works as worlds requires exposure and experience as we gain a „feeling for the organism" [11], a feeling for the mechanism, or a feeling for the algorithm – that is, a sense of how things respond to deformations, interventions, or to inputs that will be transformed into outputs. We learn not lawfully by forming representations from which we deduce predictions, but learn playfully by becoming habituated to the give and take or by falling in with the felicitous interactions of things.

This is where ambivalence enters in and a problem arises regarding the involvement in these technical worlds by very young children. As one contemplates the working order of technical systems, devices or machines, they appear like a utopian world that accommodates people and things in a seamless manner: All the elements of a (socio-)technical system must work together non-violently. Machines and other technical works perform their function in an unforced manner. There is a „*zwangloser Zwang*" (uncoerced coercion) that produces the effects of artworks and technical works alike. Indeed, in times of friction and tension we might look to the working order of things as an image of peaceful cooperation. But uncoerced coercion is still a form of coercion or, often enough, seduction. This is the ambivalence of technical worlds as limited wholes: On the one hand the art of engineering is intrinsically non-violent and peacefully concerned with unforced action, it produces on the other hand a seductive quality which rewards conformism by way of a soothing kind of repetition and reenforcement, by way of an indifferent contentment with mere functioning.

The work as a world invites us to abandon ourselves to its working order. In the years immediately after the period of National Socialism in Germany, the poet Günter Eich therefore issued the missive: „*Seid Öl, nicht Sand im Getriebe der Welt*" – in the gears of a machine-like world, we are not supposed to be the grease that makes the machine run smoothly, but we are to be the sand that irritates and disturbs the effective working of the machine [12]. We should be distrustful, according to Eich, of the comfort and warmth that is promised when we contemplate the stove and make it our world.

This ambivalence signifies that technological works are politically underdetermined. And this, in turn, means that technology is for adults. While children and adults inhabit a technical working order of things and adopt a technical form of life, the *logos*, rationale, *raison-d-etre*, or political character of „technology" is subject to adult deliberations. Factories, the free-market economy of supply and demand, the State have all been likened to perfectly functioning, self-regulating machines. It is a hallmark of the functioning machine that all of its parts work together, that everything is in its right place - but „right place" by what measure, according to whose criteria? This is where the problem of political underdetermination comes in: Is the „right place" one of subservience to overall functioning, are we to be slaves to the machine? Or is the right place one in a well-ordered system of feedbacks in which a kind of equilibrium is achieved? Does the technical working order of things absorb and subsume us in blind and numbing routines of ceaseless production and consumption? Does it involve us in a system of checks and balances, mutual correction and control? Or is there a distributed, modularized, highly adaptable intelligence at work?[1] Perhaps with Lewis Mumford's distinction of democratic and authoritarian technology in mind [13], we can envision a perfect machine that induces mechanical solidarity [14] as it is immortalized by the zombie-like machinists in the movie *Metropolis*. But we can also envision mutual attunement and respect in a society that is propelled by organic solidarity [14] in a system that functions in a swarm-like manner and that is animated by a shared sense of purpose.

3. (Pre-)Natal World-Making - The Incubator

It is easy to say, but impossible to believe that technology is for adults just because it requires maturity to appreciate the pleasure of passive immersion as well as the counter-pleasure of active participation. To what extent shall we surrender to a seductively well-ordered technical arrangement of people and things, to what extent can we reclaim these things as instruments for intentional action? In fact, of course, one becomes socialized into a technological form of life well before one can appreciate, let alone evaluate such differences. And thus regarding one and the same technology we can see two things going on at once – childhood socialization and adult discussion.[2] We discuss this first in regard to a technology that embodies the promises and problems of technological world-making, quite literally: The incubator is a technical environment for newborns who require a transitional place between the mother's womb and a baby crib. This transitional world extends by technical means the womb into the „outside" world of the hospital. It is nowadays met by technologies that, without medical rationale, extend by technical means the "outside" world and project it into the womb. In either direction, a path is smoothed for a life sheltered in a predictably pleasant technological form of life.

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[1] These distinctions are familiar from works of the visual and performing arts which assign weight to their elements in different ways. Examples can be found in many technical systems as well. There is the classical factory which is ruled by the requirements of the assembly line and then the modern media lab with its distributed creative spaces. There is a transportation system that is hierarchically organized by major hubs and feeder services or perhaps a seemingly chaotic interplay of private and public providers of taxis, mini-buses, rickshaws, and trains.

[2] A familiar example of this is the story of teenagers immersed in gaming apps, with their parents worried that they are losing their grip on life. Here, we are looking for deeper, more structural patterns that reach beyond the digital age.

The incubator represents a technically created world which is a counter-world to the world of the delivery room, the hospital, the baby crib in the parents' home [15]. Though it seeks to provide a technical analogue to the womb it is a counter-world also to human touch, skin-to-skin contact, the sound of the human voice, mental and physical stimulation by parents and nurses. The technical development and subsequent refinement of the incubator thus followed the trajectory of perfecting the incubator not only as functional analogue but as perfect simulaton of the womb.
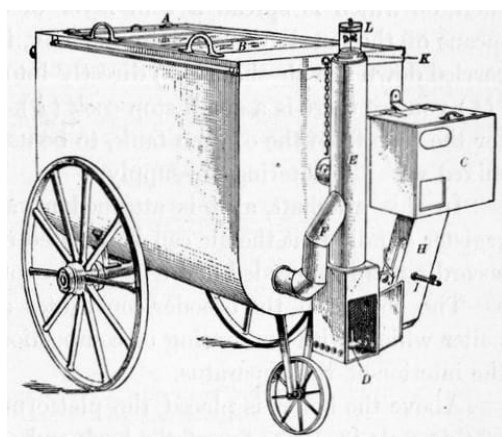
Brooder for premature infants. *A*, scales for weighing infant; *B*, glass lid of incubator; *C*, fresh-air box, containing clock-work and fan; *D*, lamp for heating water-jacket; *E*, chimney; *F*, return flue from heating-flues; *G*, return fresh-air flue; *H*, entrance for fresh air; *I*, connection for oxygen tank; *J*, mixing-valve; *K*, ventilating exit; *L*, anemometer.
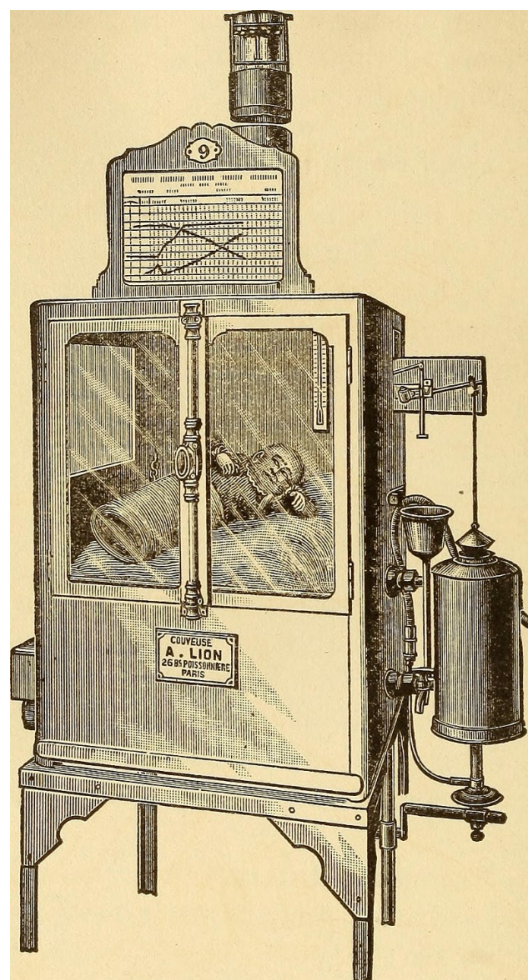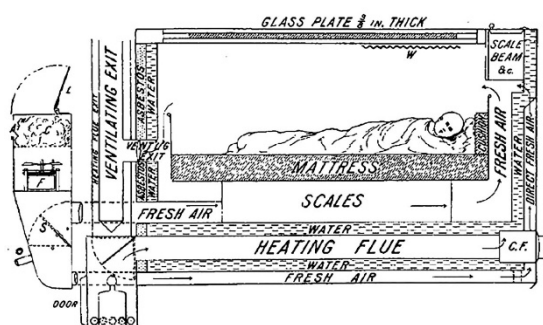
Fig. 1. Early incubators (1893 and 1906) [16, 17]

In 1878, Etienne Tarnier invented the first closed-type incubator that placed a newborn baby in a special environment. In 1888, Alexander Lion, developed the first commercially available incubator, revolutionary in its regulated heating system and its portability [18]. Fig. 1 (left) demonstrates Rotch's pediatric incubator (1893), it was mobile and provided control of cleanliness, temperature, atmosphere, oxygen content and weighed premature newborns [17].

The transitional world between inside the womb and outside became ever more perfect as a self-sufficient world of its own that mimicks life in the womb, e.g., by nowadays including the simulation of prenatal or postnatal maternal sounds. Since it ever more persuasively offers a substitute for all that gets lost at birth, it invites the premature or compromised newborn to stay: The violent rupture, often too early at the moment of premature birth, is undone and replaced by a seeming permanence of belonging. Not even quite born, infants are already soothed and seduced, sheltered by pleasurable stimulation in a self-sufficient technological world.

The incubator is thus simultaneously a sophisticated machine and a safe intimate space, a medical achievement and a shock to nurses and parents - their baby is taken away from them, secluded. It is these adults – and not the infants themselves or the medical doctors and technicians – who primarily experience the conflict between survival in a secluded protective world and the demands of familial bonds, development, and social interaction in the human world. In the Intensive Care Unit or newborn nursery this drama unfolds around the question: when, for how long, and to what end can the premature or newborn infant be removed from the incubator, handed over to the parents for nursing, for the contact of voice and skin, and other forms of interaction? For this decision, the safe option is always the perfect and perfectly satisfying integration into the technical system of the virtual womb – because and even though this kind of safety shelters early human development from the real world. Not in every hospital but for a long time in many hospitals it was the doctors who put safety first and nurses who acted as advocates for the social needs of infants and parents alike, both sides having the health of the infant in mind [19].
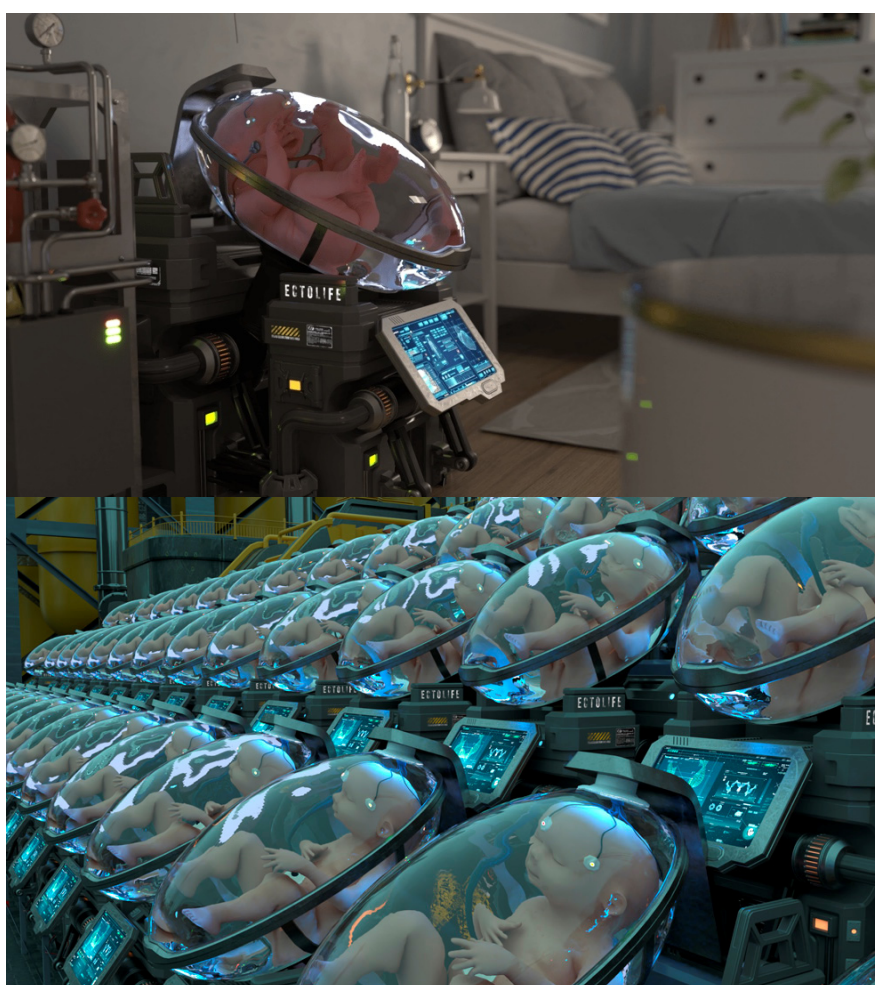

Fig. 2. Plots from a video introducing the concept of an artificial womb (2022) [21]

The incubator-as-womb follows the dictate of medical necessity, this includes the processes of virtualization and hybridization: The inclusion of a pre-natal sound environment that is tuned to that of the mother is not an entertainment feature but helps complete the therapeutic setting of the virtual womb. If medical necessity externalizes the womb and extends it into the world of the hospital and even the home, there is no natural boundary how far this trajectory will reach as incubators become portable. One

such development is fittingly labeled EXTEND. The Children's Hospital of Philadelphia has been creating a working model of an EXTra-uterine Environment for Neonatal Development. EVE refers to an Ex-Vivo uterine Environment developed at Tohoku University and the University of Western Australia [20]. In 2017, scientists from Philadelphia created an artificial uterus capable of carrying a premature baby born at 23-24 weeks of gestation. The latest, most high-profile vision was offered in 2022 under the heading of EctoLife which is supposed to work from week 13. A futuristic video features the device as it puts the fetus on display in the bedroom, for everyone to see behind a transparent covering, providing information on a monitor of various measurements and camera observations. Another shot shows a special room containing thousands of such artificial wombs, indicating that the dangerous and inconvenient business of pregnancy can be delegated to a factory (Fig. 2).

Mother or father or grandparents can transparently witness and openly influence what normally takes place hidden inside the pregnant body. The conflation of inside and outside, natural and artificial womb is thus complete – relying on the advance over 100 years of incubator technologies for monitoring and controlling atmospheric and vital signs, including heartbeat, temperature, blood pressure, respiratory rate, and oxygen saturation, with warnings of any potential anomalies. And of course, these artificial wombs are equipped with internal speakers that can play words and music, with parents selecting a playlist and sending audio messages.

This most recent proposal may appear like a logical next step or like a *reductio ad absurdum* of the outwards move to technologically exteriorize the womb by creating a protective world inside the world. But there are steps also in the opposite direction as entertainment and educational technologies extend themselves into the body, discovering the womb as an incubator that introduces the unborn to the pleasures of the material world.

It is most probably true that the fetus gains first experiences of the outside world even while inside the pregnant body. The mother's physical and mental stress is communicated to the fetus in many ways, including diet and noise. For a long time, parents-to-be have taken the time to speak to the fetus and play music in order to stimulate positive emotional and cognitive development – in more ways than one seeking to „touch" their unborn child. But in more ways than one, technological and edu-technological entertainment does not stop short at the boundaries of the body. Vibrations, voices, musical beats can be broadcast inside the body as well, providing reassuringly repetitive rhythms to overpower the rather more subtle and complex „natural" soundscape as a complex response, in turn, to the external stresses upon the mother's body.

Socialization thus begins in the womb not into a technological reality as such but to the specific cultural techniques of shielding ourselves from the material world, protecting ourselves from the cold hostile „outside" by furnishing cozily and warmly the inside world of the home or of the womb. Even in terms of musical taste, one might say, parents can now create a familiar home for their unborn child to be born into - and we would consider it a form of child abuse if parents used this technology to expose the fetus to jarring, even violent sounds. And of course, here already and as it will be in the newborn's future, parents use this soothing technology to insinuate that they are there, caringly, when in fact they are not: The parents' smartphone connects not only to the babyphone in the children's bedroom but already to a vibrating, sounding, perhaps listening device inside the mother's body (Fig. 3).

As with the portable artificial womb, it may be doubtful whether this new technology can succeed in gaining wide-spread acceptance. Its very availability is telling, however, as is the promise it makes. This is the promise of the hybridization of a most personal, intimate inner space with the working order of consumerism. In the incubator as well as the mother's body the ground is laid for

the pleasures of a closed, controlled, safe and predictable environment – the pleasures afforded by a technical working order in which everything is as it should be.
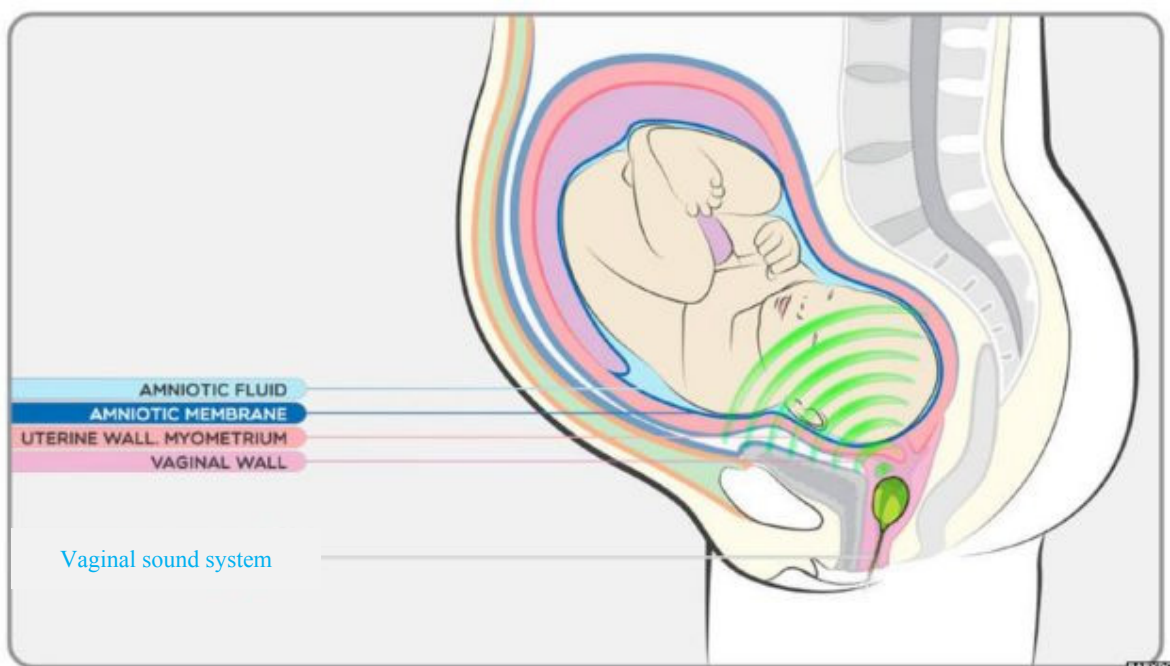

Fig. 3. Vaginal sound system [22]

We can follow the trajectory of medical necessity by creating an artificial womb outside the womb, or we can follow in the opposite direction the trajectory of desire for a reassuringly repetitive, continually stimulating, soothing working order of things that becomes implemented in the mother's body and paves the way to the teenager's gaming culture. Either way, in the digital age we thus arrive once again at a juncture that was described by Hannah Arendt and Arnold Gehlen: By way of technology the human species might return to the level of crustaceans, reversing the course of biological and cultural evolution - creating a safe haven, a protective shell. Like turtles, we construct and carry with us the cage that keeps us in place and threatens to infantalize us [23, 24].

4. Childlike Power in a Digital World

Our second example foregrounds the socialization of children into a technical form of life to which we can properly relate only as adults, whereas children can only experience a seductively pleasurable surrender, along with the promise of meaningful action. Today's children begin to master the digital world no later than the physical world. Digital devices used by the mother and others are becoming an integral part of the infant's environment. Since the attention accorded to these devices often rivals the parents' devotion to their children, objects of such significance to family members become coveted even before the infant is able to appreciate them in any way.

The success of early introduction to mobile devices is greatly aided by touchscreens and visual interfaces. A light touch is able to provoke changes in colors, lights, and sounds, providing a multi-modal sensory experience that is consistent with the dominant mental function of children under 3 years old which is perceptual. In the physical world it is much harder for children to produce an effect by their actions. Even a rattle requires more coordination to start sounding. And an infant's interaction with the big „outside" world rarely leads to any effects, and if it does, this is more likely to

be frightening and traumatic. For a toddler, for whom every movement requires effort, the physical world either proves to be an unresponsive or extremely dangerous place. If a baby pulls the cord of an iron standing on the table, it might fall on the head of a fledgling researcher, and this use of technology is unlikely to please all concerned. Parents must be very careful when the baby begins to move around the house, they must remove from reach anything for hitting, cutting, stabbing, of falling, that is, everything that might provoke an inquiring mind and experimental spirit. Any person knows how much effort it takes to make something happen in this world, and yet it is usually impossible to foresee everything that a toddler might do when exploring their habitat. For this alone, the digital environment seems much safer to parents, even if they assume that such early exposure to mobile devices is not healthy and limits the child's development. Moreover, mobile devices are now often a universal means of calming a capricious baby. Toddlers in public places produce great discomfort for everyone in their vicinity, their noisy and active interactions with the environment irritate the people around them. It is no coincidence that research shows that higher parenting stress is associated with greater screen use in toddlers [25]. So, paradoxically, the technology which affords infants the first experiences of controlling things in the world, is at the same time a technology by which to calm them and which is a safe alternative to ordinary reality. The researchers note that real or professed anxiety about child safety may influence parents' decision-making about when and how often to substitute outdoor play with digital play on smartphones and tablets [26], especially since the latter requires less supervision and parental interaction.

At the same time, children gain digital literacy early. By the age of 12 months, children can meaningfully perform the necessary finger movements to work with the tablet: "tapping" (quick one-finger touch), "flicking" (quickly brushing the surface with a fingertip, as if turning a book page), and "pressing" (touch and hold for an extended period of time) [27]. Moreover, one can observe how children tend to operate information objects of the physical world as if they were digital ones. One can observe how the child makes a characteristic movement with the fingers – trying to zoom into the picture on the cereal box. Wohlwend gives another example of a toddler using her fingers to press, tap, and swipe icons on the glass screen of an iPad to open various apps. But in the next scene, when she tries using the same fingers on glossy fashion magazine pages, nothing happens. Puzzled, she pauses to test her finger by pressing it on her own knee. Satisfied that her finger still works, she returns to pressing spots on the magazine but with no reaction from the inert images on the page. In the final scene, she returns to the iPad and happily presses app icons that respond instantly to her finger touches [28]. The usual forms of interaction with the digital world are transferred to the everyday world, where the child misses the interactivity and responsiveness of the environment. And this may become a demand on technologies from a new generation, which means a demand for a plastic and responsive world that affords an ever deeper immersion in a digital cocoon, separating a person from the unrelenting hardness of outward reality.

Australian researchers highlighted that digital technology gives infants their sense of agency and autonomy [29]. Digital reality is easily transformable and malleable, it supports the simultaneous possibility of multiple options, the ability to undo, go back and replay once more. To the extent that it is much easier to achieve something in the digital world, this gives rise to a feeling of power and the ability to effect change which, in turn, leads to a feeling of pleasure.

From 1946 to 1955 there were baby crawl rallies in New Jersey, USA, with plush toys at the finishing line, serving as motivation for the crawling participants. In the 21st century baby runs have become popular all over the globe. But it is impossible to explain to a toddler that they have to crawl, a toy as reward does not do the job. So parents engage their kids by something that inspires their physical effort. And of course, a lot of babies crawl towards tablets and smartphones (Fig. 4).

Fig. 4. Modern baby crawl rallies [30]

This story nicely exemplifies the ambivalence of a technology that is used to calm infants and keep them safe, which at the same time inspires and engages them. And as they learn to control the digital world they move like remote-controlled vehicles along a track. It is getting harder and harder to get kids off their mobile devices. Digital reality is more desirable, and sometimes most important. In contrast to the subjects of traditional education, children study this reality quickly and willingly. As a rule, parents do not teach children the use of digital technologies, and even more so the rules and meanings of various games or applications. Nevertheless, these skills develop perfectly. Children master counting and foreign letters easily since these are needed to work with the Internet. From an early age, children are able to explain how to manage devices and programs.

5. Conclusion

Benedetta Milani writes that the digital world bears resemblance to a mythological system; a different type of rationality operates here that contrasts with logical-scientific thinking [31]. And if the mythical charm of online existence has a limited influence on adults, then for children its influence is total. After all, children enter the digital and the physical worlds at just about the same time – they don't initially experience them as distinct. Therefore, the adoption of digital technologies is for them just a part of exploring and adapting to their immediate environment. It does not call for understanding and critical perception, and yet there is cognitive dissonance as in the case of the magazine picture that does not yield to touching and swiping. And this, in turn, signifies that the experience of failure will be very different for children when they seek to do things in the real and the digital worlds. The first world is unyielding unless one gets it right. Things either work or they don't work. The digital world is more accommodating. The price for failure is low, the opportunity for variation and repetition almost immediate, and there are many ways of getting it almost right or not quite failing. The digital reality is not one to say „no" to the probing mind but invites people to join a game of trial and error.

This accommodating world of digital technology is built by adults and becomes a shell or even a trap for children. It provides pleasure, promotes the acquisition of real skills, and it is "safe" as it protects them from the dangers of interacting with the offline world. This is the turtle's "shell" in which children grow up and to which, according to Arendt and Gehlen, adults regress as they become

children again. For children, it is a natural and necessary part of the world. In light of the cognitive dissonances which arise in the juxtaposition of real and digital worlds, kids may experience what Fabio Grigenti and Andrea Gentili call a „crisis of presence" [32], quoting Ernesto De Martino who defines the crisis of presence as a loss of identity and „of the objectivity of the world" which „is experienced as if everything acquires the ductility of wax, and as if things lose resistance and become sag in their contours" [33]. This is precisely what can happen in early childhood before the digital and the physical worlds can be distinguished according to a criterion of reality. And in a different way this is also what happened to Wittgenstein who confronted a rupture of reality on the battlefield. The crisis of presence needs to be healed and magic provides the key for our re-integration in the world. This is the magic seduction of the touchscreen, which recomposes a reality that is interrupted or suspended, reintegrating the child, just as the oven returned Wittgenstein to a limited technical world [33].

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