

HeiAge

**Assistenzsysteme und digitale Technologien
zur Verbesserung der Mobilität im Alter**

**Assistive robots and digital technology for
an improvement of mobility for an aging population**



Cross Topics Project Ethical and political questions, dilemmas and consequences in terms of care

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September 2021**

Work in Progress from October 2020 until July 2021

Final purpose of human mankind: completion of humanity and bliss



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Effectiveness of ethics and dialogue

- Knowledge of universal ethics
- Development of each state in the realization of ethical standards
- Development of the individual by promoting dialogues for the exchange of ethical principles

Enquete Commission KI, Germany



Human being

A problem of insight and cognition

The concept of **being human**, the human image of oneself, can in this respect be an ethical correction of a perspective that puts the logic of AI in a ranking before humans.

(Enquete Kommission KI 2021)



Ethically speaking, AI systems should be evaluated in a society-wide, discursive process with regard to public interests [and common sense]

Freedom is therefore the fundamental **moral guiding principle for AI.**

(Enquete Kommission KI 2021)

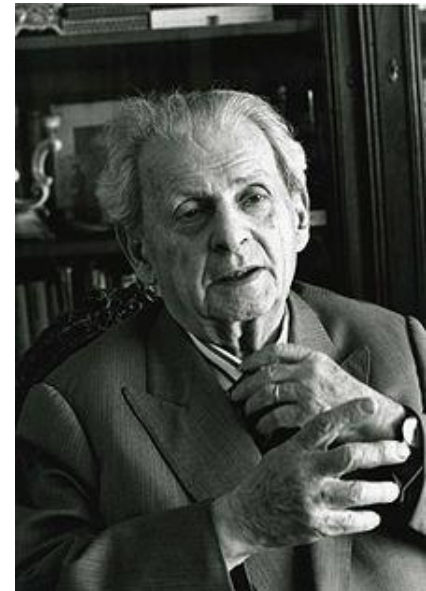
Ethics and dialogue as a method



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The ethical begins in the I-Thou of the dialogue, insofar as the value of the other person means something to each of the partners.

Levinas (2020): From Dialogue to Ethics

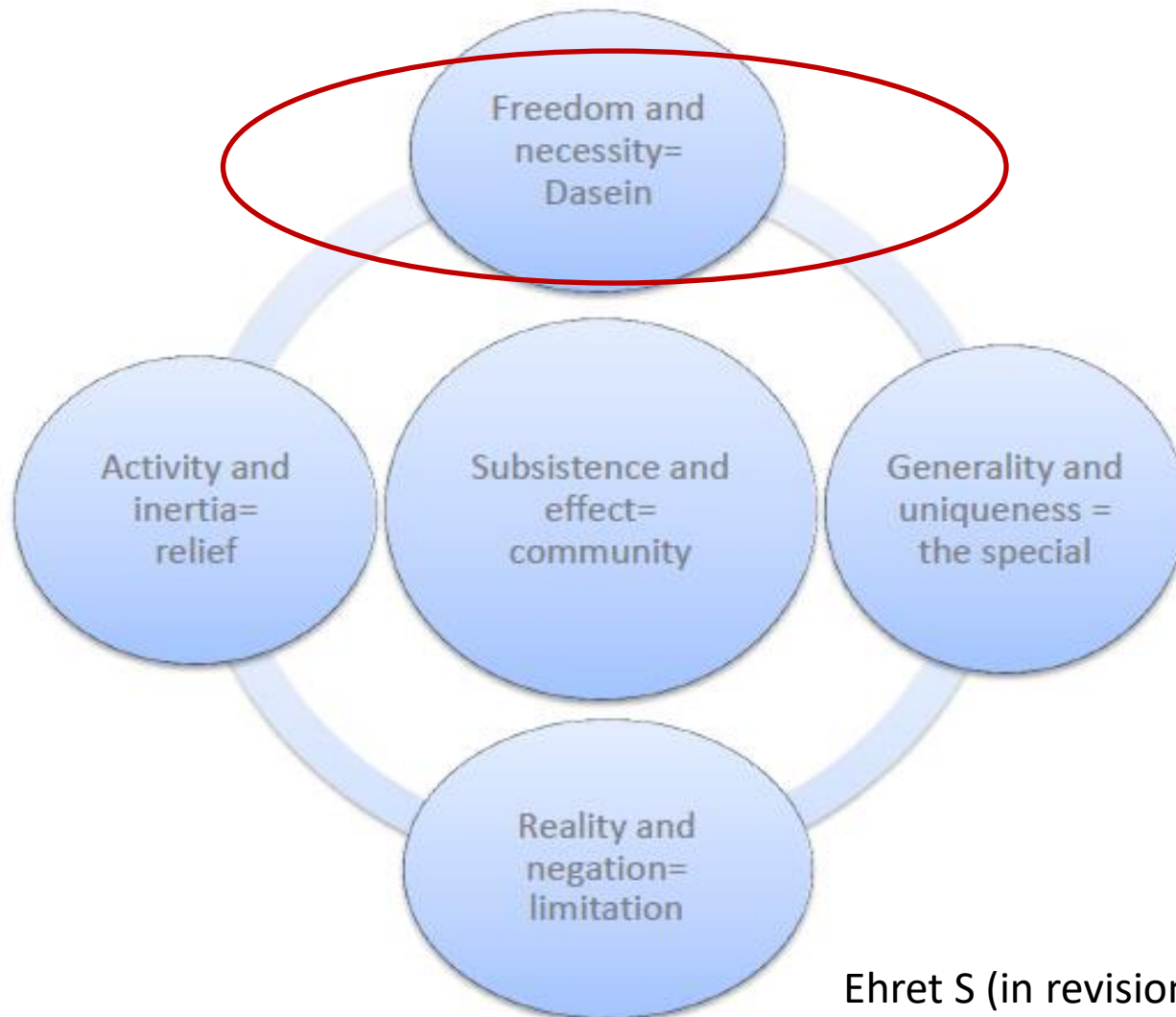


First nomothetic abstraction

Spring 2021: Model of value antinomies



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Based on Kant and Hartmann, own complement

Ehret S (in revision): A priori
interviews with oldest scientists⁶

Freedom vs. Necessity = Dasein (being)



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A modal analysis of the concepts of pure understanding (Kant) shows that there is a **mode of necessity in the world**. Absolute **necessity is a value**, in it the sublimity over the relative, chance or contingency is revealed. Moral feeling looks up to it. **Necessity finds its ethical counterpart in the value of freedom**. It is itself an elementary fundamental value and is only modally limited by necessity. The moral person with all the following value structures is rooted in the balance between them.

Ms. E. : Would you use these robotic aids? (photo)

Mr. B. (85): The question is not an easy one, and I want to answer it in a meaningful way. No. This is my answer now, and not at some point in 500 years, because it is totally alien to me and I'm not running around like an fool yet! But if it was more developed, if it could take on a different form, was harmonious and more adapted to people, my attitude would be different. However, if I needed the help and it really serves me very well, then yes.

Conversation on themes of being (Ehret 2010)	Example	Ethical Interpretation (reconstructive method, Bohnsack 2000)
Extension of being (5)	Parapsychology Unconscious parts of movement, inertia in old age Da Vinci God and Providence	Understanding Self-actualization Laws of nature Synchronicity
Communicative transcendence (4)	(Exoskeleton) If I need it and it serves very well, then yes. Comparison with hearing aid	Ethical answer (Necessity and well-being) analogy Argumentative mode Understanding
Referring back to your own opinion (3)	"Doesn't electrification have harmful potential?" "In reality it is of course the case that you definitely do not know that in any way."	Asserting one's own point of view recognition level response
Being equal (2)	"You probably know everything." "I do not know everything."	Socratic questions.
Actualization about themes (1)	Life in and with electric fields, electricity and humans.	Interest in the other person. Start of a didactic conversation.

Actual interview sample



	Oldest old and older people N=32	Physiotherapists N=4	Students N=10
Age	83,9 (range 65-98)	38,8 (range 28-57)	
Gender female	69%		
Frailty 0-1	28%		
Frailty 2-3	56%		
Frailty 4-5	16%		
Marital status			
Single	12%		
Married	16%		
Widowed	66%		
Divorced	6%		
Education			
Low	12%		
Middle	25%		
High	38%		
Scientist	25%		

- Duration of each interview (inkl. Dialogue) between 30 minutes and 120 minutes
- Reconstructive interpretation each interview between 40 minutes and 200 minutes



Now take a look at the interviews



Mobility and security first

AS (82, 3, 1, female): ... It looks like an American sheriff

E: Would you use it and walk around with it?

AS: **If I can walk, yes. Running is one of the most important things for me. I accept a lot there. But I am against surveillance.**

E: That the data will stay in the health system? Do you see a danger here?

AS: Yes, through **data misuse**. If the health data is passed on, it can become restrictive if you say you made a mistake here. So what if we run towards a dictatorship again?

E: Do you see any dictatorial elements?

AS: Well we have populist elements.

E: What do you think of assistance systems or **smart homes**?

AS: It seems scary to me. I'm tech-savvy, but the limit is somewhere, **but I don't see any sense in it.**

E: What if you had someone else who was there for you?

AS: **No. I am a big advocate of independence and I want to be independent for as long as possible. And even if someone else is around me, I don't want to be a nursing case.**



WS (82, 4, 1, m): **If I am forced to have such a prosthesis attached, then I have to live with it. Movement is extremely important to me.** It has increased here in assisted living through the convenience. Communicative participation in public space is extremely important to me. This is another step towards freedom and self-determination.

E: Where do you see dangers?

WS: Actually **only in the misuse** that someone acquires the data without my consent. I would like to be able to dispose of it myself. **Or that the muscle cannot cope with an overdose.** It is the same with medication.

RR (90, 4, 1, m): **The surveillance? You have to secure it. Due.**



The good life.....

HF (90, 4, 2, m): When we wake up in the morning and thank fate (or God), we definitely have a religious bond, and are still master of our functions.

E: Which special functions are particularly important to you?

HF: That we still have our spiritual and intellectual functions. That we are slower in old age is not the problem.

....another good life: living in the info sphere and enjoy chances



WS (82, m): It's fun to go to another world. [the digital world]

E: Do you find things that make you curious?

WS: Yes, where I think it has to be deepened now.

E: And what about exergames? Serious games?

WS: The dangers are that these programs are not coordinated to **the needs of the individual**. They are general programs where the individual is not given **sufficient consideration**.

New Questions and answers



Jl (89, 3, 3, f): How does science differentiate between the use of a robot and the use of technical assistance? (...) The robot does something for me without having any own influence.

E: This is where the data is collected and the robot learns. A learning system. But what you say is correct because part of human autonomy is also restricted.

Jl: Yes, ethics also play a role here and if the very old people are still mentally fit enough that they say the robot can do that to me and cannot do that to me, it's okay. **But if this robot is used without my knowledge, thinking or ability, then it will be viewed critically in some areas.**

E: Is activation by a physiotherapist or robot better?

Jl: Both. **There has to be someone there who really teaches me that in an understandable way. Why and for what purpose, then the device can run itself. I think it's like lymphatic drainage (...) where touch plays an immense role in old age. And when a person does this lymphatic drainage, the feeling is different than when I am in such a plastic bag.**



E: [Family Care] But these are basic skills that we should all have.

Jl: (...) It's such a sensitive area to go into families.

E: That it is largely taken over by the families. Now I also know some very old men who have taken care of their wives. How can this be taught to men?

Jl: It starts with the babies. **Where does the man's work begin and where does the woman's work end. It is a social and ethical problem. Ah. There.** (Metacommunicative knowledge!)



E: **Ah, we found something there. This gender issue.**

Jl: Ah, this gender issue is still a long way off and I have the feeling that I'm almost going back. (...) The example is still the best teacher. The good example and the bad example.

E: And if we now focus on people and also get the gender issue under control, which techniques would then be important for you to age well?

Jl: It's hard to say. That is individually different. That is mobility that I suffer most from. Our town now says: All cars out. (Criticism) Politics cannot do without us old people at all.

E: How do you get around at the moment?

Jl: With the rollator 500 m. I still drive a car in the city. I suggested this e-scooter as a car. An improved wheelchair. I can put my walking aids in there.

An actual interview based on the above experiences



RF (74, 4, 1, f): I think very highly of robotics for those affected **who need it**. When you regain skills.

E: Does the movement mean a lot to you?

RF: That I can walk at all. My hobby is mountaineering.

E: Now think about aging. How about the hikes? You are very happy to do that. Would such a wearable (exosuit) be something for mountaineering?

RF: I think then I would no longer mountaineering. But mountaineering is a luxury that is added to daily exercise. Then I would give up mountaineering. You know certain things that stop with old age. **You don't have to rejuvenate yourself artificially.**





E: (indicates dangers, data misuse, hackers etc.)

RF: I don't want to be left behind. (...) There is no effect without a side effect. You can't offer anything new that doesn't also have a disadvantage. You have to come to terms with that.

E: It's just a question of whether the learning system is needed or there isn't a mechanical solution as well.

RF: **I know people who also have an orthosis on their leg. They all have a specific disease. Basically you would have to ask everyone who has manual help and is willing to resort to this robotics.**

E: That's what makes it special. A special disease. But what if it were introduced in general, for enhancement?

RF: **I wouldn't use it for enhancement, only if I had a defect. But not with a small deficiency, such as wrinkles on the face.**

Autonomy and negation



RF: If I choose to use it (the robotic), then my thought comes from the brain.

E: That is the first decision.

RF: **Either the movement is as I wanted it to be, or it does something completely different to me. Then I would refuse.**



The letter from Renate W. (82, 3, 1, f)



Dear Ta.....,

(...) Attempts are still being made to strengthen the muscular strength of aging people with gymnastic exercises, but once these digital devices are available, they will also be used and replace people. **And then my freedom comes to an end, because a motor determines my sequence of movements.** I don't want to experience that anymore.

During pandemic situation some letter dialogues are conducted



Dialogue CR (stud.) & RS (94, 3, 4, f)

Rehabilitation in Bethanien after hip fracture, movement with crutch possible now again

CR (stud.) Would you try it out? (Exoskeleton / wearable)

RS (94,3, 4, f) (classical rehabilitation after femoral hip fracture): I don't know. I couldn't answer yes or no. I would have to think about it.

CR: **What are the reasons?**

RS: **That depends on the situation. If you see it as a great help, as a straw to cling to, but only now that I don't even see that I need the help, then I would refuse. But I would be reluctant to wear pants like that.**



Dialogue MG (98, 3, 4, f) & SE

Rehabilitation in Bethanien after hip fracture, movement with crutch possible again now in own home

MG (98, 3, 4, f): I don't know any of that (tools).

E: Wasn't that used in rehabilitation either?

MG: You have a machine that you ride a bike with and then just go up and down stairs. It is important to have a personal approach. Up and down these stairs is a one-on-one treatment with the young physiotherapist. And then painting. I really enjoyed that at Bethanien.

E: What if a robot did that?

MG: I think that's stupid. **The human relationship is important, for the therapist himself, it is his job that success often brings to happiness.**



The Letter from Anne S. (83, 4, 3, f)



Dear Elena,

(...) What I fear, if the technical and scientific development continues to develop so successfully, is a division of society, of humanity into

- a) few who find their fulfillment in changing the world
- b) Most who are satisfied with the convenience offered lose their freedom of saying no and are manipulated without realizing it.

So I'm not actually afraid of curiosity about new skills and knowledge, inventiveness and assertiveness, but rather human convenience.



I consider technical competence to be very desirable so that technology

- meaningful can be used for one's own goals
- can reasonably be rejected. Both are prerequisites for my freedom in dealing with technology.

Anne S.



Autonomy and time

BR (83, 3, 3 f): [Exoskeleton] **And if you want to stop and don't stop? There should be a release button everywhere.** How many people can walk again after a stroke who otherwise only lie in bed.

HB (82, 2, 3, m): Progress should go on. **Because if the physiotherapy suspends - time is lost.**

E: Is there a personnel problem insofar as the time is not used properly?

HB: Only injections are prescribed. It's gone better here in training.

What about the Conditio Humana?



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What is our idea of being human in an AI-permeated world?

RR (90, m): So the human support is priceless in the long run.

WK (88, m): I'm divided on that. **The development of robotics is enormous. But it has nothing to do with being human.** So somehow I would say that I get scared even though I'm familiar with the technology.

GM (89, m): And the more intensely people work on these things, the more dangerous it becomes.

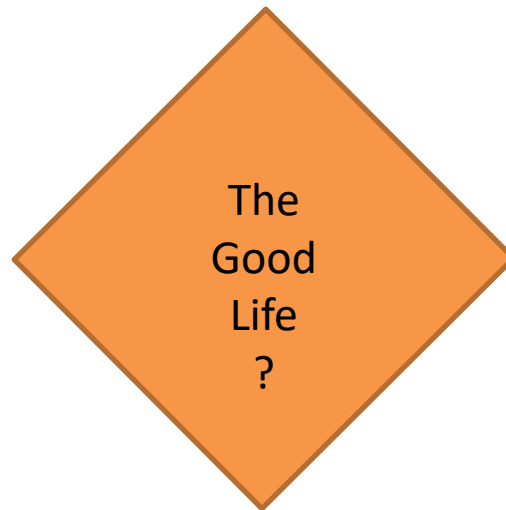
WK (88, m): People have to learn to do as much as possible themselves.

AM (85, m): You go out the door here and are among people. I live consciously today.

ASD (83, f): My biggest problem is not the technology, but the people who prescribe that the person no longer confronts me as a person. The Dr. no longer speaks to you. **When I turn my back on you as a doctor, that's inhuman.** And that's the danger, the more you invent things like that and the better it is, the more everyone switches off.



Conclusio: What we have to do



Discussion about the good life necessary for a technology assessment



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Level 0: Transdisciplinary orientation towards common sense in reality

Level 1: Universalization of principles of formal discourse ethics (e.g. recognition)

Level 2: Principles of an ethics of technology

Level 3: Applied technology ethics / technology consequences



Level 0: transdisciplinary orientation

Level 1: Universalization and discourse ethics

Level 2: Principals of a technical ethics

Level 3: Applied technology ethics / technology consequences

Sensus Communis and good life

Technology meaningful be used for one's own goals or reasonably be rejected. Both are prerequisites for my freedom in dealing with technology. (AS, 83)

But if this robot is used without my knowledge, thinking or ability, then it will be viewed critically in some areas. (JI, 89)

Technology already has an enormous potential for addiction and that robs us our freedom and monitors us (AL, 83)

Dialectics of lifeworld



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Alternative vs. colonial substitute (disruptiv)



complementary

Criteria:

Freedom - Necessity - Movement - Measure -
Well - Nature - Time - Education - Human Labor
Normality - The Good

Forms of life as specific qualities of freedom



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- Aesthetic form of life (FS, 87, 2, 1, m) : Well, it's all related to pleasure. (...) *The proband is also a painter.*
- Oeconomic form of life (found no citations)
- Political form of life (Recognition, proficiency, merit) (JI 89, 3, 4, f) Mobility is what I suffer most from. All cars out says the politicians (criticism). Politics cannot do without us old people at all.
- Theoretical form of life (Living in sanity, wisdom) (GM, 89, 3, 2) In my opinion, people are becoming more and more sensible and sane because everyone strives to lead a good life, to stay healthy, to grow old.
- Religious form of life (AL, 82, 3, 1) I think every technics that makes it easier for disabled people to get around is great, unless there are religious reasons against it, not messing around with God)



Thanks for attention



***I perceive old age as a special maturation process of the mind
that goes hand in hand with physical deceleration.***

Marcel S., stud., self reflection