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# WHAT GENERATIVE AI COULD MEAN FOR WORK

A New Framework for Evaluating  
Work Task Automation

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# EXECUTIVE SUMMARY

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## Introduction

AI is transforming the world, affecting our lives, the economy, and jobs. It's crucial for leaders to understand the impacts of AI. To help, we've created a new tool called the "Embodiment x Agency Matrix". This tool helps us understand how AI affects different jobs and tasks.

## The "Embodiment x Agency Matrix"

Our tool uses two factors to classify jobs:

1. **Embodiment in work** (Disembodied vs. Embodied) "Embodiment" is a fancy term that means how much a job involves the human body, personal experience, and persona. For example, a schoolteacher uses their body to demonstrate ideas, interact with students, and manage the classroom environment. Their personal experiences accumulated over a lifetime and personality traits also come into play, affecting how they connect with students, address different learning styles, and handle classroom dynamics – that's high embodiment.
2. **Value-based decision-making** (Obedient vs. Agentic) This factor is about making decisions that matter – about setting the course for others to follow.

Using these factors, we can put jobs into four categories:

- **Disembodied-Agentic:** Jobs where you make value decisions, but don't need to be physically present or use your body much. Examples are programmers, music producers, digital ad managers, accountants, and art directors.
- **Embodied-Obedient:** Jobs where you use your body and senses a lot (and in some cases persona), but you're mostly following someone else's lead. Examples are dental hygienists, mechanics, plumbers, bricklayers, waiters/waitresses, baristas, and nail technicians.
- **Disembodied-Obedient:** Jobs where you're following someone else's lead and you don't need to be physically present, and your persona doesn't matter much. Examples are online translators, virtual customer support, remote HR assistants, remote survey takers, and SEO assistants.
- **Embodied-Agentic:** Jobs where you make big decisions and also use your body, persona and senses a lot. Examples are fashion designers, choreographers, head brewers, head nurses, chefs, and CEOs.

## Using the tool

The "Embodiment x Agency Matrix" helps CEOs and leaders to plan for the future. It can guide skill development and help to navigate changes in jobs and tasks. It also sparks discussion about what tasks can or should be automated and how jobs might change.

## Conclusion

In a world where AI and automation are increasingly impacting society, the "Embodiment x Agency Matrix" could give us a starting point for thinking about the future of work.

## A NEW FRAMEWORK FOR EVALUATING WORK TASK AUTOMATION

Generative AI, a paradigm-shifting technology, affects our lives, economies, and labour markets significantly. As business leaders, policymakers, and researchers, understanding the broad impacts of this change is crucial. To help tackle this challenge, this paper introduces a new tool—the "Embodiment x Agency Matrix." This model aims to offer a nuanced view of automation, which can help better understand the effects of automation and particularly generative AI models on different professions and work tasks. In part, this model is responding to the lack of nuance when it comes to the assessment of Generative AI's effects on jobs, work tasks and occupation that mostly looks education, experience, and skills. Beyond those qualities, we also come to work inhabiting social roles. Some of us are expected to meet legal obligations, to challenge the status quo in arts, business and sciences and make value-based decisions on care. We are not worthy of our remuneration only because we are skilled and capable enough to do the work, but also because we put our whole selves to work, our faces, our reputations, networks, fates, and fortunes. We are paid to represent the interests of others. We are paid to compete, suffer and enjoy for others. We are paid to be human animals for other human animals. Thus, focusing on education, professional experience and skills severely limits our understanding of what moat we human animals have against the LLMs, LMMs and other automating acronyms. We are socially meaningful, not only meaningful as a sort of complex tools.

First, an important note: In this framework, I use the concept of "embodiment" for, at least for me, it carries some of the meaning and corporeality of embodied, and it also communicates the idea that someone can be thought to embody and "live out" in the now their accumulated past, their genetics, their acquired skills, and the particularities and the qualities of their physical body. One is a persona embodied in one's physical body and a body embodied and enmeshed in its biological and elemental environment. Here, embodied and embodiment is about our lived experience and lived bodies in their individuality and relatedness put into use and lived in the now.



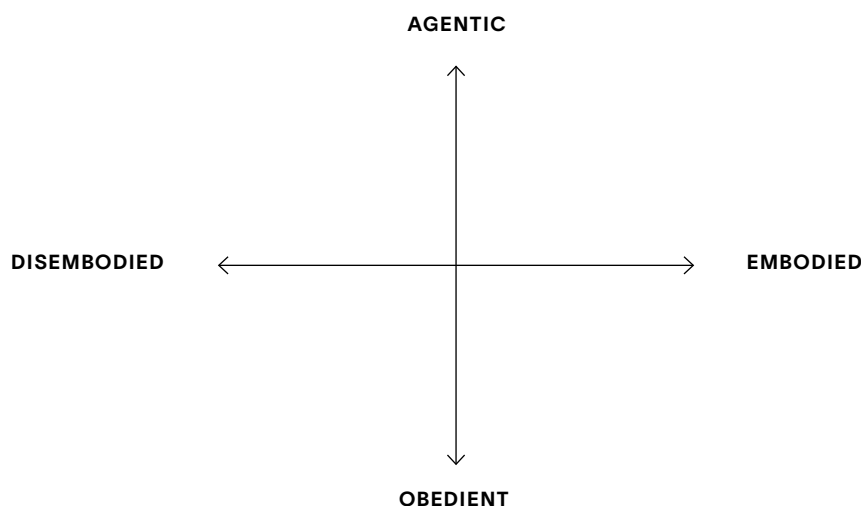
In the context of this model, "embodiment" captures the human aspect of accumulated past, skills, and the qualities of our physical bodies. In contrast, generative AI lacks this embodiment, having no human-like physical existence, which limits its capacity to replace tasks dependent on human experiences and presence.

I have also deliberately chosen to juxtapose agency with obedience instead of leading and obedience, for in this framework, agency is not necessarily about leadership position or status. It's about setting a path based on judgement rather than strictly obediently following predetermined rules or instructions.

## What is the model about?

Our model classifies professions into four categories based on:

1. Level of corporeal embodiment required in work (Disembodied vs. Embodied)
2. Degree of value-based decision-making (Agentic vs. Obedient)



Professions in the "Disembodied-Agentic" category involve high-level assessment and decision-making, but where embodiment does not play a role in preventing the automation of work tasks. On the contrary, the "Embodied-Obedient" category represents professions where embodiment plays a significant and automation-preventing role but where they follow the judgments and decisions made by others.

Professions that do not require physical presence and do not involve value-based decision-making that is not considered possible to delegate to AI fall into the "Disembodied-Obedient" category and are, according to this model, most susceptible to automation. "Embodied-Agentic" professions, on the other hand, require in a greater extent both physical engagement in work and critical and meaningful value-based decision-making and leadership.



## Framework Assumptions

This model is based on two central assumptions:

*Firstly*, the "Disembodied-Embodied" axis starts from the premise that generative AI models do not have a physical existence like that of humans, i.e., a body, where a rich and diverse existence and experience, contextualized in space and time, is emphasized. AI lacks the tacit knowledge, intuition, and embodied cognition that arises from bodily experience, a natural consequence of humans living in the world. This lack of physical experience can limit the ability of AI to perform or replace tasks that depend on these nuances of human experience and presence. Embodiment also plays a social role. Sometimes we want a human hand to touch us, to be hugged, or to have a person in the same space in front of us. Despite the development of automation, many work tasks simply require such a great diversity of bodily functionality, bodily creativity, and improvisation that robots will not be able to perform them for a while. In many tasks, we also want to witness human physical presence, persona, performance, and drama. For now, we want to witness and empathize with the fates and struggles of human athletes, and we are not going to robotize our sports and entertainment stars in front of us for a while. A hologram is a nice joke, but we want to witness the star in front of us in all its unreachable physicality.

Tasks within the category of embodied work often involve putting an entire, corporeal life *on the line* and *at stake*. For example, it might be desirable for an aeroplane to be piloted by a real person whose own life is also at stake in their success. This is not about technical limitations but our emotional and intuitive responses and the boundaries we tend to have. We already automate trains and train systems, but not aeroplanes. It is worthwhile to consider why.

Bringing your embodied self to work means bringing "your particular, local and concrete perspective on the world" to work with your materially lived experience and presence. In embodied work, where you are and where you have been and in what roles and ways and with whom becomes a value in itself. When this quality is emphasized, it becomes crucial that You, not someone or anything else, are doing whatever needs to be done.

*Secondly*, the "Agentic-Obedient" axis emphasizes the importance of value creation and criticism. It reflects the ability to perceive and understand values in the world, to understand what is valuable to others, and to criticize and challenge established values. From politics to business management and day-care/daycare centres, human decision-making often involves value-laden issues where different ethical, cultural, and social factors collide. While AI models can and will sometimes be responsible for deciding on matters like this, they do not possess the lived experience, nor do they (at least not yet) feel the weight of responsibility of those decisions. AI does not carry roles defined through different social positions. An AI model does not have the same social and legal obligations as a CEO or a public official. Whether AI is given the responsibility for making value decisions or not, and what kind of those decisions will differ. An AI model does not have a locus in the intersectionality of human sociality. AI is not an older white disabled heterosexual man or a rich black queer trans woman. They can mimic or guess the conditions and motivations of individuals endowed with particular qualities. Still, claiming that AI shares their lived experience would be a stretch. Algorithms and programs can have

functionality, and this ability can take on more and more agent-like features. However, it remains to be seen what kind of social and societal roles we want to cede to these models and what sort of roles flow to them or they take on. Instead of wondering if AI will learn the skills required to perform your tasks, consider whether your various social and societal roles will remain meaningful, even as the work needed to carry them out is automated.

Professions that require context-bound and localized decision-making, leadership, and understanding of contextual values and taste experiences seem, through this model, to be less susceptible to automation. The same goes for tasks where the interaction and orientation to the world require an embodied perspective. These tasks belong to the "Disembodied-Agentive" and "Embodied-Agentive" categories.

## Embodiment & Agency Model

DISEMBODIED-AGENTIC		EMBODIED-AGENTIC	
Digital Editor	Online Gaming Director	Personal Trainer	Construction Site Manager
Virtual Reality Developer	Digital Advertising Manager	Executive Chef	Head Brewer (Craft Beer)
Remote Financial Advisor	Remote Public Relations Director	Foreman	Lead Sculptor
Online Judge for Competitions	E-learning Instructional Designer	Fashion Designer	Ship Captain
E-commerce Consultant	Remote Chief Technology Officer	Athletic Coach	Pit Boss (Casino)
Accountant	Online Podcast Producer	Sculptor	Head Sommelier (Wine Expert)
Cyber Security Manager	Remote Art Director for Digital Media	Choreographer	Master Tailor
Programmer	Virtual Fundraising Manager	Physical Therapist	Spa Manager
SEO Strategist	Remote Legal Consultant	Master Craftsman	Lead Carpenter
Distance Learning Administrator	Online Music Producer	Principal Dancer	Flight Director (Aerospace)
Remote Team Leader	Remote Supply Chain Manager	Art Restoration Specialist	Music Band Leader
Online News Editor	Digital Publishing Director	Master Chef	Head Nurse (Medical Ward)
Virtual Event Coordinator	Remote Analytics Manager	Stage Director	Master Blacksmith
Remote User Experience (UX) Designer	Virtual Reality Content Director	Production Manager (Manufacturing)	Ballet Dancer
Digital Brand Manager	Remote Social Media Manager	Head Farmer (Agriculture)	Chef
Remote Non-Profit Organization Director			CEO
DISEMBODIED-OBEDIENT		EMBODIED-OBEDIENT	
Remote Data Analyst	Virtual Customer Service Representative	Massage Therapist	Waiter/Waitress
Virtual Personal Assistant	Telecommuting Billing Specialist	Dental Hygienist	Construction Worker
Online Translator	Online Survey Taker	Firefighter	Fitness Instructor
Remote Content Moderator	Remote Medical Transcriptionist	Carpenter	Baker
Virtual Customer Support	Virtual Language Tutor	Gardener	Delivery Driver
Remote Quality Assurance Tester	Remote Document Coder	Electrician	Veterinary Technician
Telecommuting Copy Editor	Online Travel Agent	Hairdresser	Barista
Remote HR Assistant	Remote SEO Assistant	Potter	Line Cook
Online Medical Biller	Virtual E-commerce Specialist	Warehouse Worker	Janitor
Online Proofreader	Remote Social Media Specialist	Housekeeper	Grocery Clerk
Remote Administrative Assistant	Online Copywriter	Mechanic	Factory Worker
Virtual Data Entry Clerk	Remote Web Researcher	Plumber	Groundskeeper
Remote Technical Support Specialist	Virtual Academic Tutor	Bricklayer	Assembly Line Worker
Online Market Research Analyst	Remote Content Curator	Landscape Worker	Nail Technician
Remote Payroll Specialist		Tailor	Home Health Aide
		Painter	

The examples provided in this matrix are merely illustrative. The actual roles and tasks may vary. Also, many jobs are spread over many quadrants.

The Agentic category includes spontaneous, aggressive, excessive, transgressing, reinterpreting, redirecting, and modifying abilities to which others and the rest "adapt". This framework sees adaptation as a secondary activity, merely reactivity. Therefore, the Obedient category can also be seen as an internal adaptation to externally set circumstances, boundary conditions, and guides, while the Agentic category involves actively changing the circumstances, the operating environment, and prevailing "game rules". It is important to note that Agentic-category work tasks do not always revert to leading roles. Also, those in subordinate positions can possess leading abilities, just as, for instance, the CEO of a publicly traded company can surrender or drift into just adapting to given circumstances.

**Obedient:** In this kind of work, obedience and compliance are valued, predictability is key, and surprises are discouraged. Here, your proficiency is measured by your capacity for adherence to rules and regulations. It's a matter of representing someone or something else. The Obedient is being delimited to a field of possibility. Obedient is learning, accepting, and adapting to "an established sphere of possible truths".<sup>1</sup>

**Agency:** This kind of work requires a distinctive orientation of assertiveness, disobedience, and non-compliance. One must be bold enough to challenge the status quo to succeed and make a difference. In the sphere of political theory and about the state, Carl Schmitt has famously claimed that "sovereign is he who decides on the exception". This serves well for our purposes here as well. Agency is about acting as a sovereign in the sphere of a particular life or activity. One who in a sovereign manner directs can persuade, negotiate or by other means acquire a mandate to decide on the exception. In addition, the ability to surprise and risk is welcomed and a prerequisite for meaningful contribution and leadership. It's all about presentation instead of representation. Agency is stepping out of a delimited field of possibility. Agentic means breaking away from an established sphere of possible truths and spawning a new sphere of possible truths. "See a cliff...jump off!"<sup>2</sup> as the late Lady Jaye encouraged. The act of agency "tears us apart but also propels us into a hitherto unknown and unheard-of world of problems." Thus, risking the status quo is fundamentally connected to agency. Thru agency, new organizations, collectives, and cultures are born out of old ones, and new kinds of selves and subjectivities burst out of the shells of what they just were. In the sense I'm now calling forth, agency is always an act of courage.

It must be noted that developing automatization chirps away work from humans in the sphere of embodiment as the dexterity and physical creativity and so forth of robots evolve. Also, we have good sense that AI models are getting, if we so allow (and maybe even without us allowing), more agentic.<sup>4,5</sup> Permitting AI models to have social status i.e., the ability to act in social roles that are culturally, legally, or otherwise regulated, will reduce the moat between the task in Embodied-Agentic and the tasks AI models can do.

<sup>1</sup> Telivuo, 'Intensive Technics'. Some wording inspiration here from this fantastic dissertation.

<sup>2</sup> P-Orridge, *Nonbinary: A Memoir*.

<sup>3</sup> Deleuze, *Difference and Repetition*. In this quote Deleuze writes about learning, but its applicable here as well.

<sup>4</sup> Chan et al., 'Harms from Increasingly Agentic Algorithmic Systems'.

<sup>5</sup> Park et al., 'Generative Agents'.

It is important to note that the categories are not mutually exclusive and that we should consider them a spectrum. This model does not assume a clear separation between tasks requiring value judgment and those following a predetermined set of rules. Many professions necessitate a combination of both. Some rules-based tasks also need nuanced understanding and value judgment, which complicates the separation and makes adhering to it blindly naïvé. It must also be humbly admitted that in most cases categorizing tasks is hard. Example, a surgeon could be seen as both "Embodied-Agentive" (because they make critical decisions and need physical presence) and "Embodied-Obedient" (because they follow predefined medical procedures).

Also, we posit that jobs requiring a high degree of human experience, presence, and physicality are less likely to be automated. Still, it is also true that we've seen considerable progress in AI technology capable of simulating human-like interactions and engaging human beings in immersive experiences. Examples include virtual reality, augmented reality, robotics, and haptic technology. In addition to the evolving area of robotics, these advancements may challenge the idea that AI cannot embody a human-like physical existence. The model does not assume a rational transition from human to AI-led tasks based on technical capability. Social and societal acceptance of AI in certain roles will pose significant hurdles, regardless of AI's ability to perform the job. There is a psychological component to this. We do not underestimate the ability of AI to learn and adapt over time. Future developments can allow AI to make value-based decisions and mimic aspects of human judgement. While AI may not have the lived experiences of human beings with human bodies, the line between Agentive and Obedient roles for AI is not rigid. Human bodies might also hinder some insight that the technobodies of future AI systems might reach. What insight could be gained from advanced AI systems synthesizing signals from technoscientific sensing organs such as satellite systems, systemic urban data, mass animal (incl. human) vital sign sensing technology, and a multitude of drones?

The framework does not address the ethical implications of AI's increased role in society. As AI takes on more responsibilities, questions about accountability, bias, transparency, and data privacy are increasingly important, yet these are not considered in this paper.

Life is complex, and this model should be taken as one model, one way to look at things, not more.



## Explosively embodied, era-defining agency. Case Jimi Hendrix



The Jimi Hendrix Experience performed at the Culture House in Helsinki on 22 May 1967.

*"If we start with the people who've had the most influence on me, I want to first mention Jimi Hendrix. He was an amazing musician and cultural influencer... and also very good-looking. [...] Jimi said he wanted to bring together musicians from around the world and, over the long term, create with them a universal music based on love and peace. He wanted to create a universal language. Jimi genuinely believed in universal harmony and wanted to promote it by all means. Being a rock star and making a lot of money didn't mean very much to him. He wanted to work every day for exciting music and a better world. It's important to understand how progressive and total a visionary he was."*

– *Patti Smith in the Soundi Magazine* (in Finnish)

Let's pause for a moment and look at [Jimi Hendrix live at Maui in 1970](#). As most know, Jimi Hendrix was a highly influential rock musician and songwriter in the 1960s. I present him as a possible candidate for placing him at the extreme ends of both the embodiment and agency axes – right at the upper right corner. Thus, if the phenomena he was would occur now, he would not likely be susceptible to being automatized via generative AI. Here's the reasoning:

**Embodiment Axis:**

1. **Physical Presence:** Music, particularly live performances, heavily rely on the physical presence of the musician. Jimi Hendrix's aesthetics, onstage persona, performance style, and physical interaction with his instrument were vital components of his appeal. He used his body expressively during performances to engage with his audience and manipulate his guitar, often using unconventional techniques such as playing the guitar with his teeth or behind his back.
2. **Manipulation of physical objects:** Hendrix's work heavily involved the manipulation of a physical object, his guitar, guitar effects and amps. He was known for his innovative and creative use of the instrument and musical technology, pushing the boundaries of what was previously thought possible with an electric guitar.
3. **Risk and improvisation:** Hendrix was known for his risk-taking and improvisation during performances (and beyond), further emphasizing his position on the embodiment axis. He famously set his guitar on fire during a performance at the Monterey Pop Festival, a physical and risky demonstration of his artistry and expression and a performative act that possibly was the embodiment of something for the audience.

**Agency Axis:**

1. **Value-based decisions:** Hendrix's music often tackled social, cultural, and political issues, indicating that he made value-based decisions in his work. Songs like "Star Spangled Banner", "Machine Gun" and "Bold as Love" demonstrate this aspect.
2. **Critical thinking and leadership:** Hendrix was a key figure in his band, making significant creative and strategic decisions. He also pioneered techniques in electric guitar playing and recording, showing high levels of critical thinking and innovation. He stepped outside to make and be an exception that would have a multifaceted impact.
3. **Freedom to modify work processes:** Hendrix was known for his innovative playing style and his use of studio technology to create unique sounds, indicating a high degree of freedom in his work processes.
4. **Long-term impact:** Jimi Hendrix's influence on rock music and guitar playing is immense, showing his consideration of the long-term impact of his decisions and actions. His fusion of different music genres and innovative playing techniques have inspired generations of musicians. Jimi changed, in part, how the music sounds.

Thus, given these reasons, it would be reasonable to position Jimi Hendrix at the extreme ends of both the embodiment and agency axes.

## Using the framework in strategic planning

This matrix is created to support strategic decision-making. For example, CEOs may find it helpful to know where the various tasks of their organization are located on this scale. This information can assist in decision-making, such as planning for education and skills development. It can also help anticipate changes and create agile workforce strategies.

The model is also intended for policymakers. Perhaps it can help plan policies that react to the change brought about by automation.

This framework also encourages critical discussion: where are value or values created? What is so significant that its automation is justified, and what is not? This discussion requires a new kind of assessment and a redefinition of professional hierarchies. In the future, how does a nurse equipped with a capable AI diagnostic system relate to the position and powers of a general physician?

I encourage you to join this discussion and use this framework as a tool that deepens our understanding of the social and economic impacts of artificial intelligence. Or perhaps you completely disagree with the model and want to challenge it. That would be great too. Evaluating how these technologies and human abilities intersect is essential as generative AI models evolve and their capabilities expand. This matrix is still a tool to be developed and needs to be dissected critically.

For example, as artificial intelligence develops, becoming increasingly reliable, safe, and cost-effective, we may be more willing to transfer former human tasks to be handled by AI. The cost benefits brought by automation and increasing performance and reliability compared to human labour are key factors in the speed and extent of these changes. As we get more comfortable with AI, how and what we delegate to AI changes. The famous quote from mathematician and philosopher Alfred North Whitehead notes that "Civilization advances by extending the number of important operations which we can perform without thinking of them"<sup>6</sup>. Automation is all about this. However, if we are interested in what is valuable, we must turn this idea upside down. Automation challenges us to ask not only what we can perform without thinking, i.e., automate, but what must be thought about. And not just thought about, but for what kind of values action must be taken, whether it's about the purpose of a company, strategic choices and leadership, or societal, political, and geopolitical struggles. What actions can we allow to move to the realm of "thoughts that do not deserve thinking and awareness of their implementation?" When deciding to focus on "something more important", something is chosen out and transferred from the realm of leadership and *agency* to the domain of implementation and *obedience*. These valuations are not global but will differ from one context to another.

<sup>6</sup> North Whitehead, *Introduction to Mathematics*.

**Not only individuals**

Indeed, the model and perspective outlined could be applied not just to individual occupations, but also to entire companies, organizations, and industries that are fully digital and online, and those that have grown completely compliant to the status quo. In the era of both digital transformation and A zero interest rate policy (ZIRP) economy and culture, some businesses became both increasingly digital and less interested in how sound their business was in the present while conforming to existing norms and standards, whether it's in terms of product development and other operations, customer engagement, or decision-making processes and capability. This could make these entities potentially more susceptible to automation and AI intervention. However, it's crucial to note that companies demonstrating high adaptability, contextual sensitivity, and an 'embodied' way of production and understanding of their unique business landscape could be more able to create a competitive edge, thereby possibly being less prone to complete automation.

## Conclusion

In an increasingly automated world rife with uncertainty, tools like the Embodiment x Agency Matrix can help us find our Agency and plan and act strategically. However, it's important to recognize the limitations of every model, including this one. The ideas presented here provide just one starting point for discussion and contemplation, and of course, they are not the right answer to everything.

I eagerly anticipate your thoughts and feedback on this model and the thought process and dialogue on automation and the future of labour markets and societies presented in this writing. Please feel free to reach out so we can continue the conversation.

One more thing to note: The proposed model is based on the understanding and perspective of generative artificial intelligence at the time of this text's publication. With the ongoing development of technology, the outlook can change significantly. The matrix is a simplified tool for classifying professions and tasks, and it does not consider the diversity of each profession. The assumptions and categories presented within the framework are starting points for discussion and further research, and they are not absolute truths. This blog post is meant to initiate discussion and thought, not as our final perspective.

When automatization sucks the value out of petty tasks destroying our ability to hide behind merely tossing papers around, we are driven to confront our differences in what we consider valuable.



## Appendix 1: Critique from ChatGPT

I asked ChatGPT (GPT-4) to find incoherencies in this framework. Here's its answer and my answers to them.

### 1. Critique by GPT-4: Lack of clarity

The author mentions that the framework could be called the "Embodiment x Agency Matrix," but then later refers to it as the "Disembodied-Embodied" and "Agentic-Obedient" axis. The inconsistent terminology makes it unclear what the model is actually called.

**Answer:** Embodiment x Agency Matrix is the name of the whole model while "Disembodied-Embodied" and "Agentic-Obedient" are the axis parts of the model.

### 2. Critique by GPT-4: Conflicting definitions

The author defines "embodiment" as the human aspect of accumulated past, skills, and physical bodies. However, they also mention that embodiment is about our lived experience and lived bodies in their individuality and relatedness put into use and lived in the now. These definitions seem contradictory and create confusion.

**Answer:** Body embodies our accumulated past and our lived experience, skills, our capabilities, our individuality, and our particular qualitative differences in how we relate. Our bodies with all that they embody are lived out and put in to use right now. Our bodies with all that they embody step in to and participate in the workforce and our cultures, communities, and society.

### 3. Critique by GPT-4: Lack of justification

The author claims that professions in the "Embodied-Agentic" category require physical engagement, critical decision-making, and leadership. However, they do not provide any explanation or examples to support this claim, leaving it unsupported and open to interpretation.

**Answer:** All the categories are somewhat open to interpretation. The world is not black and white. Not all professions or jobs fall neatly in to just one category. Most of us probably have work that is going to be supported or handed over to AI models to do. Most of different lines of work require some physicality, some decision-making and some agency. In this model, we focus on how much these qualities (among others) determine the quality of work.

#### 4. Critique by GPT-4: Lack of evidence

The author states that tasks within the "Embodied-Obedient" category involve embodiment playing a significant role in preventing automation, but they do not provide any evidence or examples to support this claim. Without evidence, it is difficult to evaluate the validity of this statement.

##### Answer:

1. In the appendix of the thorough "Eloundou, Tyna, Sam Manning, Pamela Mishkin, and Daniel Rock. 'GPTs Are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models'. arXiv, 17 March 2023. <http://arxiv.org/abs/2303.10130>." there is a list of "Occupations Without Any Exposed Tasks" to automatization. Here, with the help of ChatGPT I plotted all the occupations on the list to the prosed categories of our model in this whitepaper.

##### **Embodied - Agentic**

Athletes and Sports Competitors

##### **Embodied - Obedient**

Agricultural Equipment Operators

Automotive Glass Installers and Repairers

Bus and Truck Mechanics and Diesel Engine Specialists

Cement Masons and Concrete Finishers

Cooks, Short Order

Cutters and Trimmers, Hand

Derrick Operators, Oil and Gas

Dining Room and Cafeteria Attendants and Bartender Helpers

Dishwashers

Dredge Operators

Electrical Power-Line Installers and Repairers

Excavating and Loading Machine and Dragline Operators, Surface Mining

Floor Layers, Except Carpet, Wood, and Hard Tiles

Foundry Mold and Coremakers

Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters

Helpers—Carpenters

Helpers—Painters, Paperhangers, Plasterers, and Stucco Masons

Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters

Helpers—Roofers

Meat, Poultry, and Fish Cutters and Trimmers

Motorcycle Mechanics

Paving, Surfacing, and Tamping Equipment Operators

Pile Driver Operators  
 Pourers and Casters, Metal  
 Rail-Track Laying and Maintenance Equipment Operators  
 Refractory Materials Repairers, Except Brickmasons  
 Roof Bolters, Mining  
 Roustabouts, Oil and Gas  
 Slaughterers and Meat Packers  
 Stonemasons  
 Tapers  
 Tire Repairers and Changers  
 Wellhead Pumpers

**Other suitable reading:**

- 'Polarization of the Labour Market: Are Middle-Skill Jobs Disappearing? | Division for Inclusive Social Development (DISD)'. United Nations Department of Economic and Social Affairs, 2020. <https://social.desa.un.org/publications/polarization-of-the-labour-market-are-middle-skill-jobs-disappearing>.
- Ernst, Ekkehard, Rossana Merola, and Daniel Samaan. *The Economics of Artificial Intelligence: Implications for the Future of Work*, 2018. <https://doi.org/10.13140/RG.2.2.29802.57283>.
- Walkowiak, Emmanuelle. 'Task-Interdependencies between Generative AI and Workers'. SSRN Scholarly Paper. Rochester, NY, 26 May 2023. <https://doi.org/10.2139/ssrn.4461406>.

## 5. Critique by GPT-4: Contradictory statements

The author states that AI lacks the ability to replace tasks dependent on human experiences and presence due to its lack of embodiment. However, they also mention that AI can sometimes be responsible for deciding on value-laden issues. These statements seem contradictory and unclear.

**Answer:** As far as I understand, nothing prevents AI models to deciding on value-laden issues and in some cases, they are already allowed to do so.<sup>7</sup> It is a matter of whether we want to see that happen and what are the limitations we are going to enforce. At the very deep end of the realm of agency is the ability to create an exception. It will be a ride to see in what context do we allow these models to make exceptions. The question of AI alignment is fundamentally a question of the quest for social and societal alignment of all cognising systems and organisms. Simultaneously, the creative act is an act of deviation. The societal is living inside the conflicting paradox of the promises and perils of both subordination and deviation.

<sup>7</sup> Hao, 'AI Is Sending People to Jail—and Getting It Wrong'.

## 6. Critique by GPT-4: Unsubstantiated claims

The author suggests that professions requiring context-bound decision-making and an embodied perspective are less susceptible to automation. However, they do not provide any evidence or reasoning to support this claim, making it difficult to evaluate its validity.

**Answer:** The assertion is based on the idea that, as of now, generative AI has limitations in understanding and replicating the nuanced human experience and perspective. For instance, certain jobs in the healthcare industry, such as counseling or social work, require a deep understanding of human emotions and the ability to empathize in live situations and on site, aspects currently beyond the reach of AI.

The suggestion is that tasks requiring a high degree of human touch, physical presence, persona, and situational adaptability—like those performed by caregivers, skilled artisans, or performers—are less likely to be replaced by AI due to current technological constraints. In online settings, the situation differs completely as there is less dissonance in having an automated system answering to you than in, let's say, in an actual hospital room.

## 7. Critique by GPT-4: Lack of clarity in the categories

The descriptions of the "Agentic" and "Obedient" categories are somewhat vague and open to interpretation. It is not clear how these categories align with the overall framework and how they are distinct from each other.

**Answer:** The "Agentic" category refers to occupations where there is a considerable level of human agency, creativity, and complex decision-making involved. These roles often require the ability to respond to dynamic and unforeseen situations, where pre-programmed responses would likely be inadequate. For instance, roles such as a chief executive officer, a criminal defense attorney, or a school principal could be classified as "Agentic". They all require the ability to adapt to changing circumstances, to make decisions based on unique contexts, and to exercise a high degree of personal judgment.

On the contrary, the "Obedient" category encompasses roles that primarily involve following established guidelines, procedures, or direct instructions, with little to no need for personal judgement or creativity. These positions are typically more susceptible to automation as they involve repeatable tasks that can be precisely defined and performed by machines. Examples could include assembly line workers, data entry clerks, or telemarketers.

## 8. Critique by GPT-4: Lack of empirical basis

The author proposes using the framework for strategic planning and policymaking but does not provide any empirical evidence or real-world examples to support its effectiveness or practicality. Without such evidence, it is challenging to assess the usefulness of the framework in practical applications.

**Answer:** As this is a new framework, the next step would be to operationalize this framework in real-world settings, gathering empirical data that can inform its utility and potential refinements. This could involve using the framework in pilot studies within organizations, sectors, or regions to plan for the future of work, assessing its effectiveness in these real-world contexts.

## 9. Critique by GPT-4: Lack of clarity in the conclusion

The author acknowledges the limitations of the model but does not explicitly state what those limitations are. This lack of clarity makes it difficult to fully understand the scope and applicability of the framework.

**Answer:** Addressing the critique regarding the lack of clarity in the conclusion and limitations, I acknowledge that the discussion of the model's limitations could be more explicit. A clearer delineation of these limitations would allow for a better understanding of the framework's scope and applicability.

The limitations primarily revolve around the broadness of the model and the potential for oversimplification. The model has been designed with the objective to accommodate a wide range of job types and automation potentials. However, it may not account for all the intricacies and unique aspects of specific jobs. As with any categorization scheme, there is always the risk of oversimplification, and some nuances could be missed.

Additionally, the model assumes the known state of technology as of now and does not account for potential revolutionary changes in automation technology that could disrupt current job structures. Furthermore, it falls short in describing the full breadth of the socio-political factors that often play a critical role in the acceptance and implementation of automation technologies.

Lastly, the model is inherently speculative in nature since it attempts to predict future trends, making it susceptible to unforeseen changes in the technological landscape, job market, or societal attitudes toward automation.

Moving forward, acknowledging these limitations would guide subsequent refinements of the framework and make it more adaptable and accurate in predicting the impact of automation on various job categories.



## Appendix 2: What kind of people could fall into the category of Disembodied and Obedient but not that much in other categories?

The category most vulnerable to automation, the "Disembodied and Obedient", includes mainly online and remote jobs requiring clear instructions or protocols but not much agency, critical thinking, or value-based decision-making. It's important to remember that the intersection of various social, political, and personal factors (such as gender, race, class, age, education level, etc.) influences who ends up in these roles. It is safe to say that they, who already are the most vulnerable workforce participants, continue to be emphasized in generative AI automatization.

The intersectional demographics in the Disembodied and Obedient category that are less common in other categories might include:

1. **Individuals with Physical Disabilities:** People with physical disabilities may be overrepresented in Disembodied and Obedient roles compared to other job categories. These positions often allow for remote work, which can be more accessible for people with physical limitations or health considerations.
2. **Older Adults:** While older adults work in all sorts of jobs, some may prefer or are offered only Disembodied and Obedient roles that are less physically demanding and allow for a more flexible schedule.
3. **Non-native Speakers and Immigrants:** For those whose first language is not the primary language of their residence country, the Disembodied and Obedient roles might be more accessible as they may not demand high linguistic proficiency or cultural knowledge to the same extent as other jobs might.
4. **People with Less Formal Education or Class or Gender-Related Traits in Self-Expression and Self-Esteem:** Individuals with less formal education or self-esteem may be overrepresented in Disembodied and Obedient roles compared to other job categories, as these jobs often require less specialized training or higher education and, e.g. rebelliousness and extroversion related to self-esteem that might be more rewarded in activities requiring agency.

Remember, these are general tendencies and may not apply to all regions or situations. The intersectional approach acknowledges the complex, multi-layered interplay of social identities, understanding that one's experiences can't be disentangled from their various identities. Thus, it's essential to study these identities in conjunction to gauge the impact of automation on different societal groups.



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