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Back to (for) the Future: AI and The Dualism of Persona and Res in Roman Law

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Abstract

The development of AI brings many contemporary challenges which force law to face its roots. Legal relationships are materializing that take us to Roman law – to when these relationships were not about machines and their masters, but about masters and slaves. Today's search for accountability of the AI remains within the confines of the duality of persona and res, with its modern conception limited in comparison to the Roman law of slavery and its relation to dominica potestas, a key concept for the organization of Roman society. Our objective is not to identify what historical remedies might help us "solve" AI's problems, but to examine how new developments impose the need to become reacquainted with the classical origins of law. Law and technology were already intertwined since antiquity and its concerns resurface as the core of our answers to contemporary philosophico-legal questions.

Keywords: AI; Cybernetics and Law; Legal Personhood; Liability; Roman Law.

Introduction

In 1783, an automated chess machine called the Turk toured Europe and is remembered usually for beating Benjamin Franklin. At least that is how it appeared; there was a life-size human figure, seated inside a large cabinet. A Hungarian inventor had originally sought to entertain the Archduchess of Austria by concealing a human inside the wooden cabinet,

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who was acting as if there were a machine that was playing chess.[2] Today the story is reversed: machines are acting like humans, or, rather, we are being convinced the machines are like us. This symbiosis of man and machine is fundamentally legal; a legal relationship is gradually materializing that inescapably returns us to the Roman roots of law – to when this relationship was not about machines and their masters, but about masters and slaves.[3]

This article presents the modern questions arising out of the development of AI and its applications as forcing law to face its roots. With the spread of AI throughout our lives come conceptualizations and practical implementations that have their origin 2000 years ago. This includes finding answers to what are at once futuristic problems that increasingly lead tech-lawyers into Gordion knots.[4] Personal and industrial usage of machine learning and automation technology is transforming economies and societies today. There are benefits to this great transformation, yet AI technology will create new risks in terms of personal, material and societal damages. Furthermore, the predicted usage of future AI technology brings the concepts freedom and power into the spotlight. These include but are not limited to the moral and responsible use of technology, corporate surveillance, profiling, manipulation, new imbalances in the distribution of power, social justice concerns, and responsibility problems.

As such, we face several legal questions: How are we to assess what leads to legal responsibility when AI technology has been integrated throughout social and economic life?[5] How to assign liability to the AI? How to draw the line between liability that is derived from the wrongdoer and being liable from third parties' actions of contractual or extra-contractual nature? In a future where the market, labor and household relations are organized by AI involvement how should private law be re-positioned? These questions are especially relevant and should be approached holistically when dealing with the future regulatory initiatives on blockchain, autonomous vehicles, household robots, wearable technologies and many other specific examples in the digital age.

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[2] Jennifer Walter, 'The Mechanical Turk: How a Chess Playing Hoax Inspired Real Computers' *Discover Magazine*, 6 July 2019, https://www.discovermagazine.com/tecnology/the-mechanical-turk-how-a-chess-playing-hoax-inspired-real-computers. (Accessed 08 August 2021).

[3] Slavery as a social institution lacks morality, both historically and today. Such immorality applies to how slavery exists in today's world for many millions of living people, to the law as well as to how we imagine the possibilities for AI gaining self-awareness. Realizing that slavery was an integral part of Roman law and as such extends to contemporary law does not imply that we should adopt a slavery narrative in the contemporary legal world. This should not be interpreted as a defense of slavery. Rather, seeking such analogy allows us to demonstrate the foundations of modern developments and how these require us to examine critically and understand science, technology and law.

[4] Ugo Pagallo, 'Killers, Fridges and Slaves: A Legal Journey on Robotics', (2011) 26 AI&Society 347, 349; Ugo Pagallo, *Laws of Robots, Contracts, Crimes and Torts* (Springer, 2013) 42.

[5] The European Parliament Resolution issued in 2017 describes the new challenges in robotics as the "new industrial revolution." See Ioannis Revolidis and Alan Dahi, 'The Peculiar Case of Mushroom Picking Robot: Extra Contractual Liability in Robotics' in Marcelo Corrales, Mark Fenwick and Nikolaus Forgó (eds) *Robotics, AI and the Future of Law* (Springer, 2018) 59.

This article interprets the questions regarding liability as questions of personhood. Accordingly, it proposes to analyze the relationships between AI and humans in terms of the historical continuity of *dominica potestas.* This concept, *domanica potestas,* refers to the sovereignty relationship between the master and the slave as the key concept for the organization of Roman society. It focuses on the underlying ideas in Roman law of slavery which can be transferred to the contemporary problems in relation to AI. Understanding how Roman society organized its trade and business around the dual nature of slaves being simultaneously *personae* and *res* is essential in the contemporary debate on how to regulate AI.[6] Our point, in this regard, is not whether to consider AI in terms of a "superior hybrid of flesh (as *persona*) and machine (as *res*)", a next industrial revolution or to engage deeply with the fascination with robots that hold a human consciousness or 'super-smart' cars.[7] Rather, to demonstrate how any version of such a comprehensive technological revolution might imply challenges to ethical standards and legal rules.

Our examination of the return of Roman philosophy and law is relevant and urgent as in the future "machines" might be capable of at once being categorized as *res* (thing) and *persona* (person). Such dualism was the specialty of Roman law and invariably it takes us in the direction of legal remedies that bear a striking similarity to the ones found in the Roman law of slavery. This is no coincidence; the return of the concept of slavery reflects its historical continuity within our legal system. Such continuity is why Roman law should not just get its usual attention in academia as the "history of law". Roman law is not only the past of legal philosophy, this article seeks to demonstrate how it is also essential for the future of legal relationships as it underpins the solutions for today's particular problems related to technology.

The main focus of the text lies on an examination of the Roman law of slavery. Its objective is to demonstrate that its remedies were highly practical and specific in their own time. For this reason, Roman law retains its hold over how technology, society and law are inseparable today. The first part of the article deals with the analogy between cybernetics and slavery, the change and continuum of legal personhood, and the concept of potestas as the basis of contemporary questions that come out of the intricacies of *persona* and *res*. Accordingly, the second part of the article engages with more familiar and practical themes for modern legal scholarship on the problems of contractual and extra-contractual responsibility arising from the AI involvement into daily lives.

The objective of the article is not to present Roman remedies as practical "solutions" to AI's problems or to argue for the revival of the specific Roman law institutions. Rather, it seeks to demonstrate the utility of the underlying legal analysis and the policies developed by the Roman jurists, even though these might feel *prima facie* counter intuitive. As such, it aims to discuss how contemporary law is taking its shape in a direct relation to how law and technology were already intertwined 2500 years ago. They have been ever since, but new developments every time impose on legal scholarship the need to become

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[6] Norbert Wiener, *The Human Use of Human Beings*, *Cybernetics and Society* (Free Associations Books, 1989) 162.

[7] Kevin LaGrandeur, 'The Persistent Peril of the Artificial Slave' (2011) 38 Science Fiction Studies 232, 233.

reacquainted with the classical origins of law as they resurface as an inescapable core of our answers to today's philosophico-legal questions.[8]

Persona and Res

Law, Humans and AI

Taking Roman slavery out of context and applying it to contemporary questions surrounding AI implies a legal comparison between AI and humans. Such an analogy of slavery and AI is *prima facie* problematic as it is too early to say to what extent AI will end up like human beings and maybe this moment might never arrive. Yet, it is important to emphasize that such an analogy does not need to say anything about the humanness of the actors. To be human is usually associated with the questions of free will and rationality. Such questions are beyond this paper to consider as it belongs to the field of metaphysics whether or not natural human beings have free will at all. Yet, we do not have to uncritically affirm the futurism of technology to take seriously the extend that machines are being humanized already. We already imagine them to be thinking and acting rationally.[9] Therefore such concerns are not only relevant for anthropomorphic robots. There are many other examples, like how the sovereignty of the driver is being transferred to the AI in the case of autonomous vehicles.

The futuristic expectations surrounding the development of AI technologies hardly require explanation, as they can be found all around us. They remind us constantly that AI will soon touch on every aspect of social life. Each time the new AI is presented as "intelligence" as it is defined in comparison to the human ability to think and to create. When an AI has the ability to display a certain behavior that might have been epistemologically categorized as intelligent, we are describing it as more or less similar to the agency of a human being.[10] Treating intelligence as an engineering benchmark might be obviously fallacious in the sense that it is overly simplistic in how it seeks to define and standardize the mind. The self-image attached to AI is usually unrealistic, and often we are simply talking about computers as an instrument whereby cognitive processes are investigated and imitated. Nonetheless, AI as a general category is increasingly being imagined in terms of complex and distributed self-learning processes that lack clear supervision.

Today, AI technology blurs the line between 'humans' and 'things', creating new identities and communicative structures whereby it transfers the sovereignty and power of control to non-human actors.[11] This requires us to resist adopting conceptions of law which presume linearity, a linear relationship that keeps law in isolation from science and technology, usually without patience for the intricacies of their relationship.[12] This applies

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[8] See Sally Wyatt, 'Technological Determinism is Dead; Long Live Technological Determinism' in. Edward J. Hackett et al (eds), *Handbook of STS Studies*, (MIT Press, 2008) 165-180.
[9] Ozlem Ulgen, 'Kantian Ethics in the Age of Artificial Intelligence and Robotics, (2017) 43 Questions of International Law 59, 73.
[10] John McCarthy, *Formalizing Common Sense*, (Vladimir Lifschitz ed. Ablex Publishing, 1990) 79.
[11] Bruno Latour, 'On Actor-network Theory: A Few Clarifications' (1996) 47 Soziale Welt 369, 369 ff.
[12] Ronald Leenes and Federica Lucivero, 'Laws on Robots, Laws by Robots, Laws in Robots: Regulating Robot Behaviour by Design' (2014) 6 Law, Innovation and Technology 193, 197; Sheila Jasanoff,

to the capabilities of AI as a field of computer science that transcends natural language processing, and machine learning skills to deep learning. Put in terms of a question "is AI becoming more human?", we have to deal with the pervasive anthropomorphism of a machine-like body with a brain operated by "neural networks" with cameras as eyes, microphones as ears, speakers as mouth, sensors as skin and nose.[13]

It is in this sense that in antiquity slaves were seen as tools in symbioses: the prosthetic extensions of others, simultaneously persons and things.14 Roman slaves were in all aspects as much human beings as their masters, the question was one of recognition and the legal construction of 'personhood'. The antique world had an ethics that was highly technology oriented. This included the practice and management of slavery as a Roman institution, which in this version of events turns into an illustration of how technology and law were the socio-technical infrastructures of its day and how both were always embedded in social contexts.[15] When we again consider digital technology as a communicative artefact that is an extension of a specific type of technological thinking, we face the same dilemma today. The legal construction of human agency and control eventually leads to the question: when is the principal liable for the actions of other intelligent actors/beings?

AI, Slaves and Legal Personhood

Legal personhood conventionally refers to a bundle of fundamental capacities. Usually, such capacities refer to a subject that is capable of having rights and duties, to act with legal affect, to be subjected to legal remedies and so on.[16] In this regard, AI today is not a subject but an object of rights and obligations. It is traditionally considered *"res"* with an economic value, and this assumes that its producer, its operator or its owner are natural or legal persons. Yet, AI is not just any kind of *res.* First, it carries human-like characteristics that come with a certain degree of autonomy in its decision-making ability. Second, its complexity, limited predictability, and vulnerability to threats come with an increased risk of harm to other *personae* or *res.*

Let's imagine an automated technology -with or without anthropomorphic characteristics- operating in public space. Who will be responsible if it harms another person or property

'Ordering Knowledge, Ordering Society in Sheila Jasanoff (ed) *States of Knowledge: Co-production of Science and the Social Order* (Routledge 2004), 13 ff; Meg Leta Jones, 'Does Technology Drive the Law? The Dilemma of Technological Exceptionalism in Cyber Law', (2018) Journal of Law, Technology and Policy 102, 104; Slavoj Žižek, *Organs without Bodies: On Deleuze and Consequences* (Routledge 2004) 130; Roger Brownsword and Han Somsen, 'Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate' (2009) 1 Law, Innovation and Technology 1; Sakari Tamminen and Eric Deibel, *Recoding Life: Information and Biopolitical* (Routledge, 2019). 127-129.

[13] John D. Kelleher, *Deep Learning* (MIT Press, 2018); Micheal Peters and Tina Besley, 'Critical Philosophy of the Post-Digital' (2019) 1 Postdigital Science and Education 29, 35; Shuijing Hu and Jiang Tao, 'Artificial Intelligence Technology Challenges the Patent Laws' ICITBS, (China, 2019) 241. S

[14] Jones (n 12) 257.

[15] Jones (n 12) 257.

[16] William W. Buckland, *The Roman Law of Slavery*, (Cambridge University Press, 2010) 85; Robert van den Hoven van Genderen, 'Legal Personhood, Robotics', in Marcelo Corrales, Mark Fenwick, and Nikolaus Forgó (eds) *AI and the Future of Law* (Springer, 2018) 20.

during its operations? This question of legal policy mostly depends on the level of the risk, the area of usage, or the degree of control over the AI driven *res.* The current answers proposed by the contemporary civil law regimes involve product liability, strict liability, and/or sector-based hybrid liability systems. Nonetheless the penetration of AI into our daily lives requires us to re-evaluate the logic behind its current legal architecture and how an efficient allocation of loss is imagined. Re-thinking the positions of the different actors gains a new dimension when the *res* in question might actually think, changing how we look at whose behaviour caused the damage, who benefited from the high-risk activity, who has control over the wrongdoer or who is the cheapest cost avoider.[17] This highlights once again our analogy, as Roman law faced a similar dilemma centuries ago and developed a coherent legal regime to overcome its own emerging legal problems.

Accordingly, our analogy might suggest an alternative legal solution where the AI is held responsible for its own actions. This would require assigning a certain degree of legal personality to the *res* itself.[18] This is not so unthinkable considering how tomorrow artificial agents are predicted to conclude contracts and establish rights and obligations between parties, especially when distributed ledger and smart contract technologies are used. In other words, AI is becoming *homo contrahens* just like the Roman slaves.[19] A self-learning algorithm used in financial markets can cause pure economic loss, a household robot may commit a crime, and eventually AI might be allowed to conclude legal acts. The legal challenges arising from such problems implies it is necessary to establish a causal link and determine the wrongdoer and the cheapest cost avoider.

These contemporary challenges are analogous to how slaves were legally responsible from their tortious actions even though they lacked the minimum legal capacity to provide 'answerability' and how liability fell on the masters. The assignment of responsibility in Rome did not necessitate being categorized as a person, rather it depended on being considered to have full mental capacity to differentiate "good" or "bad", "legal" and "illegal". Unlike children who were not responsible for their acts and actions, Roman slaves were *res* which were held responsible. Yet, they were not accountable before the law. One had to wait until the emancipation (*manumissio*) to sue a slave for his tortious actions.[20]

Like the AI of the future, slaves in Roman times could also enter into legally binding contracts and manage property. These transactions imposed natural obligations (*obligationes naturales)* that were binding without the ability to be enforced in court.[21]

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[17] See European Union Expert Group on Liability and New Technologies – New Technologies Formation, 'Liability for Artificial Intelligence and Other Emerging Technologies' (2019) https://op.europa.eu/de/publication-detail/-/publication/1c5e30be-1197-11ea-8c1f-01aa75ed71a1 (Accessed 08 August 2021). Moreover, current legal regimes generally assume that the owners,

[18] Assigning legal personality should be understood as granting a derivative juridical legal capacity. As an initial step, it is proposed by the European Parliament in 2017 to create a robot registry similar to a company's registry. Günther Teubner, 'Rights of Non-Humans? Electronic Agents and Animals as New Actors in Politics and Law' 33 (2006) Journal of Law and Society, 497.

[19] Teubner, (n 18) 506.

[20] See D.33.8.16 pr. Africanus 5 quaest. pr.

[21] The concept of "natural obligation" originates from the contractual obligations of the slaves in classical Roman period. Although it is sometimes confused with a moral or social duty arising from

Such a situation in Rome required a transformation of natural obligations into civil law, and there were many practical remedies that accomplished this. Each of these, however, invariably implied a compromise between *res* and *persona* that directs us back to how an entity could be an object and a subject the same time. It follows that the position of AI can be interpreted from the lens of Roman law of slavery, not as a social institution but as a legal construction where the rigid boundaries of being a person and being a thing were suspended for economic reasons. AI does not have legal personality today. It is not liable for any tortious and criminal acts because it is not accountable under current technological and legal paradigm. This idea *prima facie* stops the AI driven autonomous technologies to own assets and to be sued. Yet, what really prevents them from having a bank account or appear in companies register is the contemporary legal order. This pushes us to re-think of law as a human artefact and speculate about the future legal framework of AI.[22]

Legal sources show us the obvious tension between how the status of slavery prevented legal personhood, making slaves the object of the legal system, while at the same time their natural status of humanness could never be denied. Such a position on slavery would be misunderstood if simply dismissed as hypocritical. This would be accurate to an extend: Most of the slaves in Roman times were inhumanly treated, including corporeal punishments, sexual exploitation and torture. However, it would perpetuate the misunderstanding that slaves were not considered human in ancient Rome.[23] Romans took from ancient Greek philosophy (notably Aristotle) that slavery could not be justified strictly by drawing on laws of nature. This argument has historically been used to justify and criticize the institution of slavery as unnatural but in the Roman case the existence of slavery was justified as based on pragmatic requirements of the developed technology, mainly agriculture and commerce.

Roman law was able to adjust itself to social and economic realities including the questions regarding the responsibility from others' acts and actions through the works of jurists. This might seem reasonable when interpreted in terms of Justinian's compilation of Roman law, the *Corpus Iuris Civilis* (CIC), which later inspired the French and German law in the 18th century. Ins.1.2.12 reads as 'all legal rules are related either to persons or to property or actions' (*omne ius quo utimur vel ad personas pertinet vel ad res vel ad actiones)*. These spheres referred to sub-divisions of law which served to the basic Pandectist categorization of early modern civil codes.

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natural law, natural obligations are valid legal obligations with special characteristics. They can effectively be fulfilled, and they cannot be claimed back due to unjust enrichment *(condictio indebiti)* later on. See Gai.Ins.3.119a, Ins.3.20.1.

[22] Niklas Luhmann, *Theory of Society Volume I* (tr. Rhodes Barett) (Stanford University press, 2012) 18; Niklas Luhmann, 'The Unity of the Legal System' in Günther Teubner (ed.), *Autopoietic Law: A New Approach to Law and Society* (De Gruyter, 1988) 18; Noel E. Sharkey and Tom Ziemke, 'Mechanistic versus phenomenal embodiment: Can robot embodiment lead to strong AI?' (2001) 2 Journal of Cognitive Systems Research 251–262, 257.

[23] Samir Chopra and Laurence White, *A Legal Theory for Autonomous Agents* (University of Michigan Press, 2011).

On the other hand, this statement was already understood in the 6th century by *Theophilus* as acknowledging that the division between human beings and things is not definite.[24] The sentence in Latin (*omne ius quo utimur vel ad personas pertinet vel ad res vel ad actiones*) is not constructed with the word *aut* (or) but instead, the word *vel* (rather, or…) is used. Although the two words are sometimes translated as 'or', *vel* as a disjunctive conjunction indicates a contrast depending on a subjective choice. However, *aut* refers to an objective situation, excluding the other possibility. What matters to us is that such choice of words demonstrates the indefiniteness at the heart of Roman law.[25] This can be further illustrated by another example; in ancient Rome *ususfructus* (usufruct) did not contain the children of the *ancillae* (woman household slaves).[26] The reason why the children of the slaves were not considered as mere fruits of a privately owned thing was the same: A slave was not only *res*.

Patterson goes as far as considering the common dualism of *persona* and *res* as the practical genius of Roman jurists. They created a legal paradigm aimed at the constant creation of new and practical legal remedies.[27] Patterson's views are best understood when considering the Roman law of slavery. For certain economic motivations slaves were considered as rational autonomous actors and given proper legal discretion. However, in other instances they were primarily considered *res* and fell under the control of the owner. The same applies to contemporary AI in our perspective, as it establishes a basis from where to look at a future of a simultaneous status of *persona* and *res*. AI will impose on us a similar type of practical orientation by being at once human and a thing, person and property. Although a deep evaluation of the humanness of AI falls outside of the scope of our article, the legal implications of its theoretical underpinnings can be discussed further.

The point that is of immediate importance to us at present is that the law of slavery is not different. According to Gai.Ins.1.9, *personae* were either freeman or slaves.[28] In the CIC, the compilation of Justinian, the law of slavery was organized under the systematic of law of persons *(ius quod ad personam pertinet)*. The law of persons defined the material limits of how to become a person in the legal sense: The conditions to achieve legal personality, the legal capacity, and the rights and duties of persons in exceptional positions.[29] Slaves were thereby acknowledged as human beings; they were autonomous, sentient and intelligent. Yet the ideas of sovereignty, control, and dependency were what gave slaves a special status. Such tension between autonomy and control makes the Roman law of slavery the

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[24] See Theophilus, Paraphr.Ad.In.1.3.pr.
[25] Gai.Ins.1.8, Buckland, *Slavery* (n 16) 87.
[26] D.47.2.48.5 Ulpianus 42 ad sab: 'at partus ancillae non numeratur in fructu' (the child of the household slave cannot be considered as a legal fruit). Max Kaser, 'Partus Ancillae' (1958) 75 ZSS 156, 166.
[27] Orlando Patterson, *Slavery and Social Death: a Comparative Study* (Harvard University Press, 1982) 30.
[28] Gai.Ins.1.9: 'et quidem summa divisio de iure personarum haec est, quod omnes homines aut liberi sunt aut servi'(the primary distinction in the law concerning persons is this, that all men are either free or slaves).
[29] Alan Watson, *Roman Slave Law*, (John Hopkins University Press, 1987) 57.

close equivalent of the future legal design of AI when dealing with the questions of responsibility.

Potestas

In Rome, the questions regarding legal responsibility revolved around sovereignty. In other words, the problem of mastery and control in Roman law was not about humanness but about *potestas*, the power of sovereignty of the father of the family the members of the household. The problem of "humanness" is indeed gone when the traditional legal approach simply follows a conventional definition of freedom. For example, in the Digest of Justinian, freedom is defined as the natural power of doing what one pleases insofar as it is not prevented by law or coercion.[30] Under this naturalistic definition everyone is free including slaves as well as today's AI. It would imply that there is no notion of AI as private property or as the product of whoever build it (with Locke).[31] Similarly there is no autonomy of the will, as the basis of the modern liberal agent (with Kant) which is the precondition for having the capacity to act like a rational being and for being subject to moral and *ergo* legal rights and duties.[32] Yet adopting a non-conventional definition of freedom would push us to prioritize *persona* over *res,* sidelining how both Roman slaves and AI are *prima facie* being considered as things owned and controlled by legal or natural personalities.

On the one hand, Romans argued that '*servus non habet personam'*: A slave has no persona. He has no personality, he does not have a right over his body, no goods of his own.[33] He cannot form a legal marriage, he cannot appear in court. If injured, it would damage the property of the owner. If abandoned, he would not be free but *res derelicta,* a good which currently belongs to no one.[34] Roman philosophy dictated that slavery was not a relative status. The slave who did not have an owner was not a free person, rather he/she had a status of rightlessness.[35]

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[30] D.1.5.4 pr. Florus 9 Ins: 'Libertas est naturalis facultas eius quod cuique facere libet, nisi si quid vi aut iure prohibetur.' See Andrew Borkowski and Paul du Plessis, *A Textbook on Roman Law* (6th edition, OUP, 2020), 90 ff. We might be tempted to consider the brutal practice of slavery in Roman history through the lens of popular culture and its vision of the lives of slaves as it is depicted in gladiator movies, the Spartacus uprising and so forth. We should be aware, however, that such versions usually come with a concept of the liberal agent that is presented in a distinctly non-Roman conception of free will, dignity and autonomy that belongs to the history of liberal democracy's commitment to the freedom and equality of individual citizens.

[31] John Locke, *Two Treatises of Government,* (Thomas Hollis ed. London, 1764). Lawrence Solum, 'Legal Personality of Artificial Agents' (1992) 70 North Carolina Law Review 1231, 1277, 1245.

[32] Immanuel Kant, *Critique of Pure Reason,* (Paul Guyer and AllenW. Wood ed, California, 1998); Martin Heisenberg 'Is Freedom an Illuison?' (2009) 459 Nature 164, 165; Ulgen (n 8).

[33] Gai.Ins.2.86; Ulpianus and Paulus present us with a more naturalistic understanding of legal personhood: *Servus nullum caput habet.* Using the word *caput/*head in Latin makes the *res* metaphor even more concrete.

[34] Edgar Shumway, 'Freedom and Slavery in Roman Law' (1901) 49 University of Pennsylvania Law Review 636, 637.

[35] William W. Buckland, *A Textbook of Roman Law from Augustus to Justinian* (Cambridge University Press, 1950) 61.

On the other hand, the historical analogy would be that also "a robot has no *persona*". AI has no personality, no right over its robot-body. Yet artificial agents are already to an extend becoming subjects in societies that are characterized by social stratification, just like Roman slaves. Smart cars, smart houses, household robots, wearable technology that become integral to our personal sphere are the examples in our daily life. Their current role in our everyday relations do not require an immediacy in recognition their rights to their physical embodiment. Nevertheless, legal questions become complicated when considering the prospective industrial usage of AI driven technologies in the public sphere or the financial decisions made by AI which will have a direct effect on others' assets. Such possible risks put us in a place where we need to contemplate the best possible methods to deal with emerging legal issues, and whereby to do this we are urged to re-think the relationship of mastery and control.

It is instructive in this regard to consider the origins of the word 'cybernetics' as a predecessor to AI and the information age.[36] First used by Norbert Wiener, the term cybernetics comes from Greek *kubernetes*, steersman, referring to devices that could self-steer.[37] Roman law strategically acknowledged the self-steering capacities of the slaves but only on particular occasions. It was the idea of *potestas* which gave legitimacy to the legal design of their position. Coming to us from a highly stratified society, Roman legal system granted personality according to status: *status familiae* (family status), *status civitatis* (civil status) and *status libertatis* (status of liberty). In order to be considered as a person, one had to be a free citizen of Rome that is not subjected to "his own law".[38] Nonetheless this did not stop the slaves to be granted partial recognition of their autonomy in practical life.

Status familiae determined the status of each individual within the family. *Pater familias* had sovereignty power over the household and the slaves. Because of this sovereignty relationship, individuals considered as part of the household were subjected to the law of the *pater familias*.[39] In earlier Roman times, the sovereignty relationship between *pater familas* and the free and non-free members of the household had been considered as existing in parallel to each other. However, the substance of the relationship was different. The former was called *patria potestas* vis-à-vis the master-slave relations revolved around *dominica potestas*.[40] The free members of the household gained more liberty after the classical period. This affected the practical nature of both, resulting in a differentiated treatment of slaves in comparison to the rest of the household.[41]

In the case that a slave got emancipated within the confines of the household, a new situation arose. Any master had always had the ability to emancipate the slave. The

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[36] Ronald Kline, *The Cybernetics Moment or Why We Call Our Age the Information Age* (John Hopkins University Press, 2015).
[37] Kevin LaGrandeur, *Androids and Intelligent Networks in Early Modern Literature and Culture* (Routledge, 2013) 180.
[38] Gai.Ins.1.159 et seq. Buckland, *Roman Law* (n 35) 61.
[39] See Ins.1.9.pr3, Borkowski and Du Plessis (n 30) 113 ff. Buckland, *Roman Law* (n 35) 142, Watson (n 29) 47.
[40] Buckland, *Roman Law* (n 35) 142. For *patria potestas* see Ins.1.9.pr3
[41] Watson (n 29) 47.

emancipation *(manumissio)* never created a new ownership, since a man does not own himself. In such cases, the slave became a *libertinus*, a freedman, a free person who was released. This was obviously a different category than a *libertus,* a freeman.[42] Unlike ancient Greece, freedmen became citizens in Rome. However, they had a special status, with certain political restrictions. The effect of the *manumissio* was that a new patronage relationship was created with the former master who became a *patronus* and the former slave who undertook certain duties and obligations of providing labor to his former master.[43]

If, in the far future, the AI is ever granted a juridical capacity, it can be considered as a *quasi-libertinus* in a Roman sense. This hypothetical statement owes its basis to the *allopoietic* nature of AI, that is to say, its technology cannot be stripped away from human involvement. In other words, the question will be: to what extent can we distinguish the AI developed by human beings and the humans themselves? Our historical analogy with cybernetics would imply that this intertwined relationship is a reflection of a patronate relationship with its master: the operator, manufacturer, data trainer, or designer, depending on the nature of the relationship. To be specific, we are interested in how the future of AI will be subject to a new type of '*dominica potestas*'.

Roman Imperialism, Economy and Slavery

The Roman origin of personality as a legal artefact was directly shaped by its relation to technologies and an economy that was based on slavery. The Roman empire was founded on the skills of the enslaved workers.[44] The emphasis on slaves as *res* was not merely about being a thing, but about having economic value. In this sense labor was seen as any kind of service subjected to a legal relationship and as an extremity of the master, ontologically dependent, and in terms of production, in agriculture, as a form of living enterprise.[45] By analogy, AI becomes an integral part to the assetization of human capital and the commodification of the body in our own societies.[46] In other words, the systemic effect of the AI will be more visible in labor relations.

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[42] William L. Burdick, *The Principles of Roman Law* (Florida, 1989) 197; Giuseppe Dari-Mattiaci, 'Slavery and Information' (2013) 73 Journal of Economic History 79, 80 fn. 3.

[43] The high frequency of Roman *manumissio* is explained by the gift-exchange theory in law and economics literature, based on the correlation between the slave productivity and freedom. *Manumissio* created a positive incentive for productive work whereas cruelty ended up with negative incentives. In the early empire 1/10 slaves were freed every 5 years. This was more visible in the case of domestic slavery because of the physical and social proximity between the master and the slave. Keith Bradley, 'Roman Slavery and Roman Law', (1988) 15 Historical Reflections 477, 480 ff; Peter Termin, 'Labor Market in Early Roman Emprire' (2004) 34 The Journal of Interdisciplinary History 513, 523, 532; Darri-Mattiacci (n 42) 80.

[44] Shumway (n 34) 651; Termin (n 43) 514.

[45] Nicolas Smith, 'Aristotle's Theory of Natural Slavery' (1983) 37 Phoenix 110.

[46] It is predicted that nearly one third of current jobs which require a bachelor's degree will be performed by AI in the future. International Bar Association Global Employment Institute, 'Artificial Intelligence and Robotics and Their Impact on the Workplace' (2007) 14; Tamminen and Deibel (n 12); For more information see Kean Birch and Fabien Muniesa (eds), *Assetization:Turning Things into Assets in Technoscientific Capitalism* (The MIT Press, 2020).

In Rome originally there had not been that many slaves in number due to the rarity of existing wars. Accordingly, captives from neighboring cities and cultures resulted in slaves who were relatively similar in terms of education, language and other types of cultural proximity. The prices of such slaves and the value attributed to them were high. This began to change with the military expansion during the times of the republic. The peak period was between the first and second Punic wars (218-201 BC).[47] As such, Rome gradually became a global empire and with it came economic development organized around the expansion of the institution of slavery. The economy started to revolve around large agricultural enterprises called *latifundia* which could be privately or publicly owned. The closed family economy was replaced by a market economy based on production solely created by slave labor.[48]

By the end of the 1st century BC, slaves constituted about 35% of Italy's population.[49] New forms of exploitation began to arise following the period of the Antonine Plague of 165-180 AD and the plague of 250 AD. These had resulted in massive destruction, an increase in military costs, a slowed down economy and demographic contraction. In addition, the demand for skilled slaves and their prices decreased.[50] In the late empire there were almost 5 million slaves, constituting only circa 15% of the total population.[51] It is usually thought that almost half of the slaves worked in the countryside, while the other half, mostly owned by the elite, worked in the household or were integrated in the business life in the city.[52]

Such observations on the transformation of labor relations in ancient Rome mirrors how the family as the smallest form of social group came to be dependent on slaves as human capital. Slaves became integral to the household economy especially after the shift from cattle breeding towards agriculture based economy. The reason why the condition of the slaves was not very different from the other members of the family in earlier stages had been that the household economy had remained closely tied to the family structure. All the labor relations were based on the sovereignty of *pater familias,* which applies also to sophisticated slaves who worked as doctors, philosophers or lawyers.[53] This included legitimate types of slavery, which resulted in the loss of many types of jobs, which were displaced by the 'free' labor of the slaves.[54]

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[47]Keith Bradley, *Slavery and Society in the Ancient Rome* (Cambridge University Press, 1994).
[48] Barbara Abatino, Giuseppe Dari-Mattiacci and Enrico Perotti, 'Depersonalization of Business in Ancient Rome' (2003) 31 Oxford Journal of Legal Studies 365, 368, fn 15.
[49] Keith Hopkins, *Conquerors and the Slaves* (Cambridge University Press, 1978) 9, 102; Walter Scheidel, 'Human Mobility in Roman Italy, II: The Slave Population' (2005) 95 The Journal of Roman Studies 64.
[50] Bradley, *Slavery and Society* (n 47) 96.
[51] Kyle Harper, S*lavery in the Late Roman World, AD 275–425* (Cambridge University Press, 2011) 59.
[52] Termin (n 43) 526.
[53] Burdick (n 39)186 ff.
[54] According to some scholars there were no labor markets in Rome since recruitment by force was the only practical method. On the contrary, Termin argues that Rome had a functioning labor market and high level development of market exchange that could be compared to pre-industrial Europe. Termin (n 43) 514.

The social understanding of labor in ancient Rome was not as sophisticated as ours. Cicero and Vergilius used 'labor' in a very simple sense, as tiredness and hardship. In this sense labor relations revolved around slavery as a legitimate institution even if it was *contra naturam.* The institution of slavery was part of *ius gentium*: It was about being subjected to someone else's dominion and it was legally accepted.[55] Centuries later, Hugo Grotius followed the path of Roman jurists in his defence of how men are naturally free.[56] He, like the Romans, argued that slavery can be legitimised under certain conditions, for example presenting it as potentially rational to sell oneself into slavery as it logically follows from freedom as an alienable good.[57] We might have changed the semantics of artifacts in our society, we are again in the process of shaping a derivative psycho-juridical capacity for the AI, just like the Romans did when seeking to sustain the institution of slavery.

Natural/Artificial Slavery

Although Roman society organized its business relations around slavery and its institutions, Roman philosophy explicitly acknowledges that slavery is unnatural. Many fragments in the *CIC* present slavery as *contra naturam,* yet legitimized as a matter of *ius gentium.*[58] This idea comes from stoicism and the Greek philosophy that later flourished in the Roman world. 'Artificial' or 'unnatural' slaves were first found in Homeros' *Illiad*, as the group of people who do not naturally carry the characteristics to be a slave, but became slaves because of unnatural reasons such as war captivity.[59]

Later Aristotle differentiated whether a slave was an artificial slave or a natural slave in the *Politica*. Natural slaves were marked out from birth, categorized by a lack of deliberation or the aptitude for bodily labor.[60] Aristotle's natural slaves were obedient and tractable beings from non-Greek cultures. Unnatural slaves on the other hand, were depicted as mostly aristocrats captured in battles or criminals condemned to slavery as punishment, who would see themselves as nobility.[61] Aristotle defended that nature provides sufficient reasons to captivate certain beings, drawing on biology and cultural bias.[62] Nonetheless Aristotle's distinction demonstrates there was a fear of rebellion as a result of 'unnatural' slavery and shows concern over a clash of consciousness between masters and slaves.

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[55] Gai.Ins.1.3.2.2.

[56] *Grotius, De Iure Belli Ac Pacis,* 111.7.1.1.

[57] Certainly such a view came to be criticized widely by his successors, like Rousseau who saw it as absurd. Nonetheless it should still be traced back to the historical example of *adrogatio* in Roman law. As a *ius civile* institution, *adrogatio* referred to the process of adoption by which a *pater familias* could give up his personhood and independence for financial reasons. Steven Forde, 'Hugo Grotius on Ethics and War', (1998) 92 The American Political Science Review 639. For adrogatio Gai.Ins.1.99, Ins.1.11.3; D.1.7.5 Celsus 28 Dig.

[58] Gai.Ins.1.52, Ins.1.3.2-3, D.1.5.4.1 Florus 9 inst.: 'Servitus est constitutio iuris gentium, qua quis dominio alieno contra naturam subicitur.'. Also see D.12.6.64 Tryphonus 7 disp. *Ius gentium* here referred to the quasi-cosmopolitan law of nations that governed the trade relationships of foreigners.

[59] See *Homeros, Illiad,* VIII; Shumway (n 34) 639; LaGrandeur, *Androids* (n 37) 9.

[60] Smith (n 45) 111.

[61] LaGrandeur 'Artificial Slave' (n 7) 244, *Politica* 1.1255a.

[62] Smith (n 43) 111-112.

Famously a revolt broke out in Rome 73 BC led by an "unnatural" slave, Spartacus, and it took 2 years to suppress.[63]

In antiquity, slaves were not seen as different from the organs of the masters.[64] Therefore the slaves were accepted to have a derivative legal capacity as an extension of the owner and in accordance with the owner's interests in everyday business life. Within the context of the closed economy of Rome, this meant that there was no need to legally organize labor relations between owners and slaves. Again, this idea dates back to ancient Greek philosophy and the works of Aristotle who defended that the slave was nothing other than the owner. Aristotle in *Politica*, saw the slaves as animate tools that were used by the owner to achieve an end.[65] According to this idea, the servant was himself an "instrument for instruments". Aristotle used the word *organon* throughout his discussion of slavery to refer to the body's parts as well as to a craftsman's tools, thereby mixing the notions of humans and instruments.[66]

In other words, all instruments, animate or inanimate, were seen as the prosthetic extensions of the master, creating a hybrid entity. Slaves were "a living but separated part of his bodily frame".[67] LaGrandeur even maintains that there are highly futuristic passages about the "slavery" of AI to be found in Aristotle's works. In *Politica*, Aristotle refers to *Hephaistos*' fiction of 'intelligent artifacts'. This refers to how the physical forms of the slaves could be transferred to non-human, artificial forms, if possible, in forms of automatic slaves. Those intelligent, artificial servants allow for work to be done for their owner with no intermediation, without the ethical problems of owning human slaves, and therefore approved by all Athenians.[68]

What this discussion shows is how Roman law did not treat humanness as an inherent property of or a determinant for the grant of legal personhood. Such modern understandings of legal personality can be argued to be derived from the works of the medieval jurist Bartholus wherein the owner and the slave constituted a legal personality together as a whole.[69] As a result of centuries of work by the Roman jurists of the middle ages and the renaissance, 19th century codifications adopted his theory of *persona ficta* (fictitious person) into our legal world.[70] Accordingly, no analogy with natural persons was

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[63] Borkowski and Du Plessis (n 30) 91.
[64] Francesco Maria De Robertis, *I Rapporti di Lavoro nel Diritto Romano* (Milano, 1946) 4 ff.
[65] LaGrandeur, *Androids* (n 37) 106.
[66] LaGrandeur (n 7) 244.
[67] See Aristiotle, *Politica* ,1255b; LaGrandeur (n 7) 236.
[68] Ibid 237.
[69] The theory of *persona ficta* flourished in Canon law after the works of Bartholus. In 18th century, the historical school of jurisprudence emphasized that only natural persons could have proper rights and duties, meanwhile acknowledging that positive law may grant such privileges to everything. Today, this idea may be taken further as a methodological tool to grant a spectrum of rights and duties to a variety of entities, from the nature itself (as in the analogy of ecocide) to communicative structures. Pagallo, *Laws of Robots* (n 4) 156; van den Hoven van Genderen (n 16) 24.
[70] The economic theory behind this explanation would be to decrease transaction costs. Ronald Coase, 'The Nature of the Firm' (1937) 4 Economica 386; Harold Demsetz, 'The Theory of the Firm Revisited', (1988) 4 Journal of Law, Economics & Organization 144.

required any longer when we refer to how corporations, foundations and associations have legal personality. The theory of *persona ficta* already permits law to attribute legal personality to information flows, and similarly there is no need to imagine a sentient, human mimicking robot as the natural person behind an AI.[71]

Furthermore, such an AI could be re-imagined as having *sui generis* legal subjectivity. The Latin word *persona* often referred to the disguised, outward appearance of man.[72] Just like today's AI technology as an extension of the human intellect and intentions. Take the example of Saudi Arabia's first robot Sofia which got citizenship in 2017 with more rights than a female citizen of Saudi Arabia.[73] This collapses the legal anthropomorphism of AI with the reality of inequality and by extension how the reality of slavery is terrible.[74] Such a disturbing example, however, also reminds us how a process of "personification" has a strong presence in fiction and other types of popular culture, whenever AI is depicted as reaching the status of actual personhood. This heterogeneity mirrors how slaves in ancient Rome did not carry a singular type of independent quasi-human like status. On the contrary, the family structure of Rome was a spectrum, in which certain slaves were better off than some sons. Some slaves were operating as lawyers, doctors and teachers, being hierarchically under the master but simultaneously acting as private agents. Similarly, some were living in conditions better than that of many free urban poor in Rome.[75]

As Seneca noted slaves were not easily distinguishable in physical sense.[76] In this sense the economic and immoral nature of slavery in Rome did not have the categorically racist origins that characterizes the modern institution of slavery.[77] Instead Roman slavery demonstrated that slaves who were in theory not inferior to their masters might regain access to the general society.[78] This should not be seen as a justification of Roman slavery, but as a necessary step from where to consider how special legal status is being granted to today's AIs based on naturalistic criteria that are once again heavily influenced by economic and technological considerations.

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[71] Teubner (n 18) 506.
[72] Van den Hoven van Genderen (n 16) 23 fn 26.
[73] This example obviously revolves around a world play since the femaleness of the robot is only an indication that the designers decided to give it a binary and gender specific anthropomorphic shape. Yet, it shows that granting of a juridical capacity to artificial agents is *prima facie* related to human-like aspects. Zara Stone, 'Everything You Need To Know About Sophia: The World's First Robot Citizen', *Forbes Magazine,* 7 November 2017 https://www.forbes.com/sites/zarastone/2017/11/07/everything-you-need-to-know-about-sophia-the-worlds-first-robot-citizen, (Accessed 08 August 2021)
[74] Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (University of Chicago Press, 1999); van den Hoven van Genderen (n 16) 18.
[75] Beryl Rawson, 'Vernae and Junian Latins in Roman Familia' in Thomas Späth, and Véronique Dasen (eds) *Children, Memory, and Family Identity in Roman Culture* (Oxford University Press, 2010) 195-221.
[76] Bradley, 'Roman Slavery' (n 43) 477.
[77] Watson (n 29) 3.
[78] Termin (n 43) 514.

AI and the Return of Roman Remedies

Responsibility and AI

Determining the legal ontology of slaves affected many practical questions such as who is responsible when obligations arise from the slave's acts and actions. The Roman solution at first was not holding the owner legally responsible for the contractual or delictual obligations of the slave. However, this turned out to be neither realistic, nor feasible. Its consequence was a decrease in the incentive to make contracts with the slaves, as opposed to the masters' ideas about their purpose of existence; that is to facilitate efficient commercial interactions. Roman law developed a practical approach, a series of pragmatic legal remedies to solve such puzzles. The same paradox applies today. Having considered an AI's personhood through the lens of Roman law, we can now turn to its application to more familiar legal questions: Who will be responsible? Who will be held accountable? What are the material limits of the liability?[79]

Today responsibility is generally used interchangeably with liability. There are many reasons for this, such as the French and German linguistic differences and how in the Anglo-American legal tradition there is a split between responsibility as duty and liability as risk. Responsibility is primarily a moral concept that is personal and that can be shared, whereas liability as a legal concept presents us with the formal sanctions of responsibility such as compensation or punishment. Liability is a forward-looking concept, as it revolves around the sanctions while responsibility is relational and back-ward looking.[80] Accountability on the other hand, is used in order to refer to being answerable to law, based on the unfulfillment of responsibility.[81]

Responsibility has two major sides: People as "free agents" are responsible *for* their own actions, *limited to* their own property. The same applies to liability, as here we deal with the responsibility-based conditions of legal liability.[82] In this sense Roman law presents us with a basic rule: there should be no liability for others.[83] Romans believed that 'our condition can be made better but not worse through our slaves'.[84] This statement is interpreted as the owner could not be held legally liable from the slaves' acts or actions. Natural law required one to be responsible for his own commitments or actions. Even though the slave could be responsible as a living entity, he was –being simultaneously *res*- certainly not accountable.

Yet, Roman slaves were permitted to enter into binding contracts, to hold important jobs as public servants or for their masters' family business, to manage and make use of property without establishing an indirect and direct agency relationship. They were not

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[79] Wendell Wallach, 'From Robots to Techno Sapiens: Ethics, Law and Public Policy in the Development of Robotics and Neurotechnologies' (2011) 3 Law, Innovation and Technology 185, 195 ff.
[80] Peter Cane, *Responsibility in Law and Morality* (Hart Publishing, 2002) 30.
[81] Tony Honoré, *Responsibility and Fault* (Hart Publishing 1999) 15.
[82] H.L.A Hart, *Punishment and Responsibility* (Oxford University Press, 1968).
[83] David Johnston, 'Limiting Liability: Roman Law and the Civil Law Tradition' (1995) 70 Kent Law Review 1515.
[84] D.50.17.133 Gaius 8 ad ed. provinc.

agents; but they were the masters. The capacity of the slaves was a derivative one.[85] That's why everything they gained in business life was *ipso iure* the owners' property.[86] If slaves undertook obligations, the creditors could not sue them since they were not considered persons. Only near the end of the republic was there a change; it came to be accepted that such obligations did exist in natural law, as *obligationes naturales.* This was the result of the Stoic philosophy and the promotion of the slave's individuality.[87] In this case the master -or the slave himself after emancipation- could perform such a valid obligation, but could not be forced into court. Romans accepted that the slave could acquire property for the master, but could not render him a debtor, even with the master's own consent.[88]

However, the slaves were incapable of having any civil rights and obligations, including the absolute right to property. Neither did they have the positive or negative capacity of action. In daily life such a legal situation led to the decrease of incentives to enter into business relations with slaves.[89] As a result Roman law developed a form of vicarious liability that is similar to modern limited liability: The owner's limited liability from others' responsibility-attracting conduct. Such liability depended on *potestas* – the sovereignty the owner had- which was also the basis of his responsibility.

Peculium

In Rome, the commercial need to limited liability was primarily fulfilled through the introduction of *peculium* by the *praetore*. *Peculium* referred to a special property or fund assigned to the slave by the master to whom it technically belonged. *Peculium* could be composed of money, immovable property like houses or fields, or even other slaves.[90] The slaves were given *administratio peculii*, a special authorization to use the *peculium* in the daily business affairs. In other words, slaves were seen as virtual and practical owners of this property.[91] *Peculium* was also kept at a separate account of the master's own and as such provided a form of entity shielding, separating the assets with different functions in the commercial life. The master could consent to the slave holding property for his own use and enjoyment.

The primary function of *peculium* was to hold the master liable for the acts of the slave limited to the amount granted. Within this context, the *praetore* granted special rights of actions to contracting parties to be directed against the masters. These actions were based on the idea that the *pater familias* had adjunct responsibility from the acts and actions of the people under their *potestas.* Hereby, the natural obligation of the slave is thought to be extended to the master. First introduced in the late republic, these *actiones adiecticiae qualitatis* (adjunct actions) provided the opportunity to hold the master accountable and liable on the slaves' obligations of a contractual nature. The responsibility of the master

[85] Gai.Ins.2.87.
[86] Gai.Ins.1.52; Ins.2.9.3: "Quodcumque per servum adquiritur, id domino adquiritur."
[87] Shumway (n 31) 639.
[88] ibid.
[89] John Cairns and Paul du Plessis, *Beyond Dogmatics: Law and Society in the Roman World* (Edinburgh University Press, 2007) 174.
[90] Shumway (n 34) 639.
[91] Buckland, *Roman Law* (n 35) 95.

was not based on agency in the legal sense, because if so the master would have been the sole obligated person.[92] Yet, these actions provided the theoretical underpinnings of how indirect agency developed in legal history.[93] In other words, the practical result of the *in solidum* natural obligation of the slave was to give the owner an adjunct limited responsibility.[94]

The foremost action was called *actio de peculio* which institutionalized the legal usage of *peculium.* If the master granted the *peculium* to the slave, he was liable for all commercial debts incurred by that power. Such liability was limited by the amount granted (*dumtaxat de peculio)*. By assigning such a fund, masters were taking on responsibility limited with the amount of *peculium* from the contracts concluded by the slaves. This was a basic example of responsibility for the slave's legal acts limited to the amount of *peculium* that confined the business risk of the master. As a legal guarantee that the natural obligation of the slave would become an *obligatio civilis* and a safeguard for the other party, *peculium* facilitated economic transactions. It was based on an economic decision of the master, accepting all the possible risks because *concessio* (the act of assigning the property) was decided by the master himself.

The economic reasoning behind the institution was to internalize the profits generated by the slaves. It provided a special shield for the master who was a business owner and implied a partitioning of the master's assets, protecting them from the other creditors.[95] Moreover, the same slave could be given several *peculia* as well, which were shielded from each other.[96] The genius of the Roman concept of *peculium* lies in its multi-faceted character in limiting liability. It simultaneously imposes a functional and financial limit for liability, which makes it relevant for future AI technology. In Rome, liability of the masters who granted the *peculium* depended on the relations of status together with the delegation of a financially limited authority.

Peculium was a concept that intertwined business and status. Liability arising from the *actio de peculio* existed even if the master had no specific knowledge of the slaves' acts.[97] This provided them the necessary flexibility in commerce. Similarly, we can follow the Roman remedies from the institution of slavery as it transformed through the centuries to consider our own situation. Would it be a likely solution for any contracts concluded by an AI to entrust that AI with a special fund that would create a fixed maximum liability? Or, perhaps, an AI can be attributed a special amount of money or assets which the owner can risk losing as minimum capital asset requirements. In both instances the AI would act as if it were an

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[92] Direct agency as a legal institution was introduced in the works of Hugo Grotius and later adopted in the Code Napoléon and the Prussian Civil Code.

[93] Luuk De Ligt, 'Legal History and Economic History: The Case of the Actiones Adiecticiae Qualitatis' (1999) 67 Tijdschrift voor Rechtsgeschiedenis 205, 206.

[94] *In solidum* responsibility here refers to the responsibility in full amount. For a detailed explanation see Willem Zwalve, 'Callistus' Case: Some Legal Aspects of Roman Business Activities' in Lukas de Blois and J. Rich (ed) *The Transformation of Economic Life Under the Roman Empire* (Brill, 2001) 116-127.

[95] Abatino, Dari-Mattiacci and Perotti (n 48) 373.

[96] ibid 379.

[97] Johnston (n 81) 1522; Abatino, Dari-Mattiacci and Perotti (n 48) 373.

independent business person contracting with third parties, as if it is "free", and facilitate the economic life by rendering the owner liable in moderation.

Imagine that we were involved in e-commerce without knowing whether we are concluding a transaction with an AI or a person. To decrease such information asymmetry as a negative externality in the market, Professor Katz proposes a trust system combined with a special rating system for business.[98] This would mean the 'new peculium' will be held in trust. However, the most important questions still remain. How can the AI be a trustee? Will it be competent enough to administer a special fund or establish a fiduciary relationship with respect to property?[99] How far should we extend this trust system? It is necessary to have a good understanding of the future technological developments in order to make a meaningful legal contribution.

One option is to look at another method whereby ancient Rome dealt with the vicarious liability of the masters. Another adjunct action for holding the master accountable was the *actio quod iussu*.[100] This action was given against the master who gave an oral or written authorization –rather, an order- *(iussum)* to the slave to enter into a specific contract. Today, this legal remedy is often confused with agency in the contemporary legal sense, since both are essential institutions for economic life and for the efficient distribution of labor.[101] However, *iussum* referred to a special authorization with clear limits and made the master liable for the content of the authorization. Applying this idea to the AI and e-commerce would be simple and legally unproblematic. However, this would set the Roman foundations of the "walled garden" approach that leaves us with strong entry barriers into such industries, and hence would be economically inefficient.[102] Furthermore this entrenches the same hypocrisy as the Romans were dealing with: AI's actions are only allowed behind clear walls. This undermines the efficient use of AI.

Just like slaves in Rome this example is not just about one case in isolation but refers to the utilization of AI to decrease production costs across a spectrum of actions in which AIs invariably have degrees of freedom. Accordingly, such Roman law remedies simply do not

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[98] Andrew Katz, 'Artificial Agents and Internet Commerce in Ancient Rome' (2008) SCL https://www.scl.org/articles/1095-intelligent-agents-and-internet-commerce-in-ancient-rome. (Accessed 08 August 2021); Takashi Izumo, 'Digital Specific Property of Robots: A Historical Suggestion from Roman Law' (2018) 1 Delphi - Interdisciplinary Review of Emerging Technologies 14.

[99] Solum (n 31) 1243.

[100] Gai.Ins.4.70-4.74. Costa argues that the *actio quod iussu* has chronological priority over other types. Emilio Costa, *Storia del Diritto Romano Privato dalle Origini alle Compilazioni Giustinianee* (Torino, 1911), 104-108. For a critique of Costa's view see Ligt (n 92) 217. Other relevant adjunct actions were *actio institoria* and *actio excercitoria*. The former was brought against the master to enforce contracts concluded by the slave who was appointed to be in charge of a particular business. The latter was applied in case the slave was made a captain of a merchant ship. These models of vicarious liability were not subject to any financial limit, but only limited functionally. These actions broke the strong understanding of the privity of contract in Roman law, which is seen as an obstacle in modern commercial relationships. Buckland, *Roman Law* (n 35) 233; Burdick (n 39) 191; Johnston (n 83) 1516-1517.

[101] Reinhard Zimmermann, *The Law of Obligations: The Roman Foundations of the Civilian Tradition* (Oxford University press, 1996) 49, 90.

[102] Katz (n 98).

work if the legal responsibility for the acts of the AI categorically falls on the individual who grants the authorization or financial source: the *peculium*. Rather, the legal initiatives work best if sector specific knowledge is taken into consideration to find a fair balance between the benefits of AI-driven technologies and the risks they carry. Theoretically we enter deeper into a paradoxical situation: one wherein slavery is morally reprehensible but exceptional legal capacities proliferate wherever they seem cost-efficient and adjustable to the world of trade relations.

AI and Roman Delicts

The responsibility concerns arising from the integration of AI into our daily life are not limited to contractual matters. Especially the expected increase in the usage of autonomous vehicles carries with it risks, such as various types of material damage and bodily harm. As such, current legislative and policy attempts aim to address the accidents related to their usage.[103] Although private law is sometimes limited in how it deals with the contemporary problems arising from technology, the penetration of AI into our daily lives requires us to re-evaluate its roots. The logic behind the current legal architecture based on private law is best served by a more holistic approach that seeks to address these issues.[104]

Today delictual liability and criminal liability are separate; delicts are private law infringements while crimes are subjected to state prosecution. Both, however, require certain *noumena* namely *culpa* or fault (intent and negligence) as the subjective element. Culpability is a condition of responsibility, and in principle liability follows the wrongdoer.[105] However, the early Romans did not differentiate between delictual and criminal responsibility and defined extra-contractual responsibility objectively. That is to say, in the early times liability was assigned irrespective of fault. The action, causality and damage were seen to be easier to determine than the human-like psychological stages involved. This is interesting as it extends to the question of how we might hold AI accountable as opposed to the owner/controller of the AI technology.

Moreover, the classical period presents us with a more elaborate reasoning. Fairness and equity concerns required a subjective understanding of responsibility. The introduction of the special delict *damnum iniuria datum* (damage to property) by *lex Aquilia* (3rd century BC) set forth the general principles of extra-contractual liability in civil law jurisdictions. It came to be accepted that a legal person could only be held liable if he was *culpable*, as the

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[103] See European Union Expert Group on Liability and New Technologies (n 17), For the recent examples in the UK see Law Commission Consultation Paper No 245 and Scottish Law Commission Discussion Paper No 169. 16 October 2019. Automated Vehicles: Consultation Paper 2 on Passenger Services and Public Transport: A joint consultation paper p. 2 and p. 3. Available at: https:// www.lawcom.gov.uk/project/automated-vehicles/ (accessed 8 August 2021), Matthew Channon, ' Automated and Electric Vehicles Act 2018: An Evaluation in light of Proactive Law and Regulatory Disconnect ', 10 (2019) European Journal of Law and Technology 1.

[104] For further discussions see Roger Brownsword, *Law, Technology and Society: Reimagining the Regulatory*
Environment (Routledge, 2019).

[105] Johnston (n 83) 1524; Zimmermann (n 101) 126.

manifestation of intention to harm or negligence.[106] This created confusion, as *culpa* was often seen in terms of a causal connection, which continued in the sense that the lines between *culpa*, unlawfulness and causality remained blurry until the modern age.

Nonetheless, this was the period wherein the orthodox idea of culpability flourished that makes it appear as absurd today to seek to measure and prove the subjective mental state of a machine. Of course, even today it is never fully realistic to "prove" the psychological stage of *culpa* that the normative legal system tried to objectify for centuries. Thinking legal responsibility from the perspective of intentionality and free will implies making ontological assumptions that ignore that neither of them is objectively "out there".[107] Such a dilemma is also a reminder of the dualism of *persona* and *res,* our starting point. The Roman law of slavery found its solution in developing another special cause of action: *Actio noxalis*, creating a *sui generis* type of delictual responsibility of the master.

In Rome, the master had *noxal* liability for the actions of the slave. *Noxal* liability means that the master was responsible for the slave's actions in proportion to the market value of the slave. The master could either surrender the wrongdoer to the injured party *(noxae deditio)* to compensate the damage or pay the actual amount of damages. In other words, Roman law required that the upper limit of the compensation to be the value of the slave based on considerations of equity.[108] The origin of this limited extra-contractual liability of the master was *dominica potestas*. His area of sovereignty and the benefits he gains from slavery based labor relations imposed a quasi-duty of care as the basis of his moral and legal responsibility. By extension, cases arising out of the operations of an AI might be seen in a similar sense, as coming with shared duties and responsibilities.

This idea first flourished in Roman law and was later adopted by scholars like *Voet, Domat*, and *Pothier*. A person (master*, pater familias* or the employer) who has entrusted another with a certain function should be responsible for the delicts or quasi-delicts that the other person has committed in the exercise of such functions. The idea that a master should bear the consequences of the harmful acts of the persons or the property from whom he profits goes back to Roman law via *"ancien droit"*.[109] As such many national laws of delict result in the application of strict liability for any harm to the holders of a *res*, regardless if the *res* is defective or not.[110] In certain instances the same can be applied easily to AI. This refers to instances where the relationship between the intellectual process of person in control and the software is concrete and familiar.[111] So far, the basic conventions of extra contractual liability would apply in a straightforward fashion. Within these confines it is even possible

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[106] For the exceptions to the general rule see Eric Descheemaeker (2010) 'Obligations Quasi ex Delicto and Strict Liability in Roman Law', 31 (2010) The Journal of Legal History 1, 19.

[107] Bartosz Brozek and Marek Jakubiec, 'On the Legal Responsibility of Autonomous Machines', (2017) 25 Artificial Intelligence and Law 293, 295.

[108] It was seen as contrary to equity that the misconduct of the slaves should involve their masters in loss beyond their own worth. Gai.Ins.4.75, Ins. 4.8.2; Johnston (n 83) 1525.

[109] Johnston (n 83) 1520-1523.

[110] Gerhard Wagner, 'Robot Liability' in Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Liability of AI and the Internet of Things*, *Münster Colloquia on EU Law and the Digital Economy IV* (Baden-Baden, 2019) 47.

[111] van den Hoven van Genderen (n 16) 33.

to add to the analogy by considering the strict liability rule for employers about the illicit actions by employees. Specifically, the employer is responsible for the illicit actions of employees, which are functionally related to their working contracts.[112] This suggestion has started to gain supporters these days as a means of dealing with the relation between human labour and the technological assistance of AI. Its implication is that AI is assumed to be an auxiliary in a contractual relationship when it comes to the performance *(Erfüllungsgehilfe),* which fits in the scenario of classical Roman law where such agents are treated as *persona* and *res* simultaneously.

What complicates our situation is how the capabilities of AI are a black-box to most of its users or owners. The unpredictability of behavior applies even to their designers and to any experts observing their functions.[113] The question is, will an AI be able to resist its impulses to certain actions? If the intention or negligence on causing harm only arises from the neural networks of the artificial agent, who will be responsible? What would be the justification of the moral responsibility of the sovereign individual over its actions? The liability of AI itself applies to the extent that AI develops independently or possesses consciousness as something that evolves on the basis of its own critical reflection and assessment of external factors.[114] Within this context, can legal systems take anticipatory measures for the future?

Consider how in 2016, an autonomous Tesla was car involved in a fatal accident and how in 2018, an Uber car driving autonomously caused the death of a pedestrian. Although road traffic liability is one highly analyzed and complex area of law of delict, such events grasped the world's attention on the intricate issues of responsibility and the AI technology. Here, one basic legal problem is whether the sheer damage would be enough to establish liability for the owner or the user of the autonomous system such as an autonomous vehicle, wearable technology or smart home appliances.[115] Accordingly, the establishment of liability based on *culpa* will have to be adjusted in terms of its normative assessments: the balance of morality v. common sense, the support for innovation v. the risks of ungoverned technology.[116] In its essence such an adjustment is no different from how the industrial

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[112] Pagallo, *Laws of Robots* (n 4) 8; also see PETL 6:102 and DCFR 3. 201.

[113] Gianmarco Veruggio and Fiorello Operto, 'Social and Ethical Implications of Robotics' in Bruno Siciliano and Oussama Khatib (eds) *Springer Handbook of Robotics*, (Springer, 2008)

[114] Tzimas Themistoklis, 'Artificial Intelligence as Global Commons and the "International Law Supremacy" Principle' (2018) 211 Advances in Social Science, Education and Humanities Research 83; Julia Puaschunder, 'On Artificial Intelligence's Razor's Edge: On the Future of Democracy and Society in the Artificial Age'(2019) 2 Journal of Economics and Business, 1.

[115] The actual discussion started with the Data Economy Communication of January 2017 of the European Commission and the European Parliament adopted a Resolution on Civil Law Rules on Robotics. In 2018 the European Commission issued a communication on 'Artificial Intelligence for Europe' and a staff working document 'Liability for emerging digital technologies'. Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds) *Liability of AI and the Internet of Things, Liability of AI and the Internet of Things, Münster Colloquia on EU Law and the Digital Economy IV* (Baden-Baden, 2019)

[116] Lyria Bennett Moses, 'How to Think about Law, Regulation and Technology: Problems with 'Technology' as a Regulatory Target' (2013) 5 Law, Innovation and Technology 1; Anna Butenko and Pierre Larouche,'Regulation for Innovativeness or Regulation of Innovation?' (2015) 7 Law, Innovation and Technology 52.

revolution coincided with an increase of tech-related accidents. The result was the creation of exceptional liability rules; strict liability started to be applied in extra-contractual responsibility law. Eventually tech law came to be characterized in terms of ultrahazardous liability, product liability or just strict liability, which reflected the network-like relation of innovation, technology, law and ethics rooted in ancient Rome.

Contemporary legal academia proposes strict responsibility for the assessment of the actions of AI. Here, strict liability does not necessarily refer to the absence of fault but rather it implies the liability irrespective of fault in the *pre-lex Aquilian* sense. The complexity and inefficiency of determining the subjective element requires us to find an optimal arrangement just like the Romans did. Ultrahazardous liability is applied in case of objectively dangerous activities that create foreseeable and highly significant risks that should be sustained for the public welfare. While only applied in very exceptional circumstances, this could apply to AI, as there could be fatal results of inherently dangerous activities governed by an AI technology.

In case of software flaws or manufacturing defects, product liability is frequently suggested as a solution in the field of consumer protection. However, multiple challenges need to be addressed. First, the establishment of the "defect" will be tricky in the future considering it is open to discussion whether it is applicable to 'standalone algorithms'.[117] Second, the increasing complexity of the production of new AIs will likely make product liability highly ineffective since the producer is not –and will not be- easily traceable.[118] Third, product liability provides protection only if a defective product that caused harm was intended and used for private purposes.[119] Product liability is capable to be theoretically applied to AI technology such as smart cars or social robots of the near future.[120] Regardless, any strict liability arising from the responsibility for the actions of the AI would take its shape in accordance with the inherent idea of justice and equity in society.

A much more efficient line of action within the contemporary legal paradigm would be to assign liability to the party in the best possible position to make the cost benefit analysis

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[117] See Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] (Product Liability Directive). Jean Sébastien Borghetti, 'Civil Liability for Artificial Intelligence: What Should its Basis Be? Towards a Test for Strict Liability in Torts', (2019) 17 La Revue des Juristes de Sciences Po 94, 95.

[118] For the liability deficit posed by technological complexity see Jaakko Salminen 'From product liability to Production liability: Modelling a Response to the Liability Deficit of Global Value Chains on Historical Transformations of Production Towards a Test for Strict Liability in Torts', (2019) 23 Competition & Change 420.

[119] See Product Liability Directive art. 9; Simon Whittaker, *Liability for Products* (Oxford University Press, 2005) 481–494.

[120] Product liability was also initially the preferred option for the legislature in the UK. However, it was found to be incompatible with the general rationale of the legislation. In such case, there would be the possibility that the manufacturer avoid responsibility if he/she can prove that a producer of products of the same description might not be expected to have discovered the defect in the state of scientific and technical knowledge at the relevant time. Channon (n 103)

of the harmful action and to avoid costs.[121] This mirrors the pragmatic orientation of the Roman imperialist period. Following this line of reasoning the concept of "defect" should be abandoned completely and a pure strict liability regime would be required for the manufacturer of the AI who would be the cheapest cost avoider.[122] The idea of holding the manufacturer responsible for any harms caused by the autonomous system (unless the harm was caused through the fault of the victim, the fault of a third party or *force majeure)* is in tune with the Roman understanding of *potestas.* AI technology is mainly controlled by the producers rather than its users. The neo-classical perspective holds that the manufacturer is in a better position to take *ex-ante* measures.[123]

Civil liability along the lines of a Roman trajectory revolves around the equivalence between the value of the property and the 3rd party's liability.[124] Therefore, the Romanist *respondeat superior* rules should be supported by an insurance system to conform with the current economic environment. This means that a compulsory third party liability insurance (sustained by a complementary compensation fund as a replacement of a hybridized liability system) seems like a sensible compromise between the various historical, philosophical, economical and futuristic considerations.[125]

Such a mandatory insurance fund can be seen as a direct analogy with the *noxal* liability in Roman law discussed above.[126] Today the insurance ceiling is likely to be determined according with the market value or financial benefits that the AI technology would create.[127] Of course, criminal responsibility that creates non-monetary liability or intentional delictual responsibility cannot be met by such insurance.[128] Yet, insurance as an institution provides flexibility and efficiency for users or business actors in specific industries. The same applies to any other types of compensation funds that, as minimum asset requirements, could also be proposed for the contractual liability arising from the AI technology. Each of these would operate as digital equivalents to the Roman *peculium.*

The objective of this discussion was not to establish what the best course of action might be. Rather, a somewhat detailed discussion of Roman legal remedies and its legal history

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[121] Guido Calabresi and Jon T. Hirschoff, 'Towards a Test for Strict Liability in Torts', (1972) 81 Yale Law Journal 1055.
[122] Wagner (n 110) 47.
[123] Ibid 37.
[124] Johnston (n 83) 1536.
[125] The EP resolution of 2005 describes how the insurance system could be supplemented by funds in order to ensure reparations also where no insurance cover exists. Georg Borges, 'New Liability Concepts: the Potential of Insurance and Compensation Funds' in Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Liability of AI and the Internet of Things*, *Münster Colloquia on EU Law and the Digital Economy IV* (Baden-Baden, 2019) 158. In the UK, The Automated and Electric Vehicles Act 2018 received Royal Assent in July 2018. As the first piece of insurance legislation for Connected and Autonomous Vehicles (CAVs), the legislation introduces a single insurance policy covering both the driver and the vehicle. See Channon (n 103).
[126] See European Union Expert Group on Liability and New Technologies (n 17).
[127] The insurance scheme is illustrated by Curtis Karnow, 'Liability for Distributed Artificial Intelligences', (1996) 11 Berkeley Technology and Law Journal 147; Katz (n 98).
[128] Solum (n 31) 1245.

demonstrates how such measures are justified only with policy reasons, as a mixture of causal proximity and counter-factuals. As *Grotius* argued, liability for others in the absence of fault is neither a rule of *ius gentium*, nor *ius civile*. It can be introduced for special reasons, *ex rationibus peculiaribus.*[129] Special liability rules, as well as the *peculium* granted to the artificial agents are policies as well, no different than was Grotius' argument. Yet, each of the policies that accompanies the development of new technologies is not simply a pragmatic means of dealing with a new situation. It also invariably implies that each instance where we apply this reasoning to AI brings with it reminders of the economic imperialism of late antiquity as well as that of Grotius' time.

Conclusion

It is not realistic to expect to retain the current commitment to a static division between *persona* and *res.* This is a historically specific conception of law that came into existence only in the modern period. Their separation will require more intense legal work and resources as AI continues to develop and any meaningful split between them will become increasingly detached from the reality of the development of AI. New laws applicable to AI will continue to depend on many factors: Increasing the incentives for innovation, protecting society from the dangers of ungoverned and uncontrollable technology or serving the neo-classical economics of the contemporary world of value chains. For example, in 2014 the U.S. Supreme Court described cell phones as *"such a pervasive and insistent part of daily life that the proverbial visitor from Mars might conclude they were an important feature of human anatomy"* in a case concerning data privacy.[130] A European Parliament Resolution emphasized the autonomous nature of AI, underlying the more autonomous they are the less they can be considered as pure instruments.[131]

This article has sought to open up a new horizon on legal scholarship, approaching the relationship between law and AI as a forward-looking process. Accordingly, Roman law gains importance because of its pragmatic understanding of the possible dual state of agents. Also, AI will simultaneously be *persona* and *res,* reflecting a *sui generis* status as a compromise between the unique characteristics of humanness and property that were developed in the "liberal" economy of imperial Rome. Roman law demonstrates the first examples of hybrids visible in the relationships of the master and the slave. Today, we are again witnessing how, hybrid structures associating *persona* and *res* can come into existence in the legal scene.[132]

This type of "return of slavery" should not be understood as a toleration for any type of slavery whether it is race/class-oriented or simply referring to our merger with machines. Quite the opposite, we should remain critical and aware of its past as a Roman legal institution. Slavery was the determining factor in the economic, social and intellectual life of antiquity. The rules concerning slavery are often seen in relation to the

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[129] *Grotius, De Iure Belli Ac Pacis,* 2.17.20, Johnston (n 81) 1524 fn 29.
[130] *Riley v. California* 573 U.S. 373 (2014)
[131] See European Parliament resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103 INL)
[132] Teubner (n 18) 510-511, 513-514.

depersonalization of business and how it shaped the modern economy.[133] Nonetheless, the legal protection of Roman slaves continued to grow as the empire expanded. *Nero* granted slaves the right to complain against the masters in court, opening the path of granting them full legal personality. *Antonius Pius* declared a master who killed a slave to be convicted for homicide. Stoics opposed the inhumane treatment of slaves, rather than slavery itself, but this implies that their unfair and cruel treatment started to be condemned.

What is different, however, is how in ancient Rome the chains of slavery do not cease to exist when men are no longer slaves but freedmen. Accordingly, slavery was what made freedom worthwhile, a thought that can be found throughout Greek philosophy but that opposes the Aristotelian concept of natural slavery.[134] Today, we are witnessing this trajectory in our daily lives. As we saw already, the development of AI can easily be understood either in term of a new type of lordship and bondage, as well as new types of labor and class consciousness. Accordingly, AI reflects a synthetic spectrum just like the Roman law of slavery did while any attempts to break our chains begins to revolve around how exactly sophisticated AI will have been granted *sui-generis* personalities.

In the near future some AI will be treated as business partners or family members instead of simple tools. Just like the slaves being integral to business-life in ancient Rome, the AI will *de facto* be capable of making decisions which will affect the rights and obligations of others. Right now, there are autonomous agents that facilitate commercial transactions, reduce non-transparency and increase market efficiency. This implies that a wide range of legal problems will become ever more common while the heterogeneous nature of Roman slavery teaches us that monochrome legal solutions for future problems would not be effective.

What this means is that the various remedies will take the shape of sector specific legal exceptions in case general rules concerning liability become excessively costly or technically improbable to identify the individuals whose actions caused the damage. In this sense a modern *peculium* would provide the limited liability that promotes innovation and facilitate trade while detached from the status of the master.[135] The mandatory insurance sustained by a compensation fund will be a continuum of Roman *peculium*. The special extra-contractual liability regime applicable to AI will also not be new, but initially a mere prosthesis to the general rules of liability: liability based on fault, product liability, ultrahazardous liability, or other strict liability types existing in national legal systems. Yet, when it is conceived as a tension between *persona* and *res* a noxally limited extra-contractual liability and a functionally and/or financially limited contractual liability can be understood as based on *potestas*.

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[133] Abatino, Dari-Mattiacci and Perotti (n 48) 365-389.

[134] Patterson's idea of social death exists in Roman slavery as the lowest form of social life. In ancient Rome, slaves existed because the commanders ordered the captives not to be killed but to be enslaved. Bradley, 'Roman Slavery' (n 43) 488; Steven B. Smith, Hegel on Slavery and Domination' (1992) 46 The Review of Metaphysics, 97, 107.

[135] Johnston (n 83) 1522.

Roman law assumes a transformative role in demonstrating how private law and technology has been affecting each other. Roman *praetore* started to find solutions for the particular problems of AI long before us and now we have begun navigating our way through the same puzzle. Slaves lacked rights but their legal status was rather complex, they were included in the political ecology of ancient Rome. By analogy we are facing the entry of new actors in the legal scene, the recognition of their interests as well as the inevitable hybridization: integration of AI into the human body. This does not mean that artificial agents or tomorrow's intelligent robots will be our modern slaves, but rather that the intricate and non-exhaustive relationship of *persona* and *res* can be better understood in terms of an AI that is gradually achieving the status of a quasi-*libertinus.* What this means is that the AI is recognized by granting it partial rights, duties and capacities within the context of a new world order where everybody -natural and artificial agents- may equally be a master and a slave.

Finally, analyzing the history of Roman law demonstrates that there is nothing modern about the sovereignty relationship that is embedded in our own drive towards mastery and control. When observing that there is a need for engaged legal scholarship that is able to holistically consider various actors and sustain relations with other disciplines, this not only applies to Roman law as the law's past but also as its future. We can conclude that Roman law anticipated a future of communicative, reactive, autonomous machines. Re-thinking the role of Roman law of slavery helps us to raise the question to what extent we would want AI to take a dual position as *persona* and *res.* This question should be an essential part of the debate on how to regulate AI.