

Artificial Intelligence and Legal Personality: Introducing *Teilrechtsfähigkeit*: A Partial Legal Status Made in Germany

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Abstract

What exactly are intelligent agents in legal terms? Are we just looking at sophisticated objects? Or should such systems be treated as legal persons, somewhat similar to humans? In this article I will argue in favor of a ‘halfway’ or ‘in-between’ status that German civil law has to offer: *Teilrechtsfähigkeit*, a status of partial legal subjectivity based on certain legal capabilities. When applied, intelligent agents would be treated as legal subjects insofar as this status followed their function as sophisticated servants. This would both deflect the ‘autonomy risk’ and fill most of the ‘responsibility gaps’ without the negative side effects of full legal personhood. However, taking into consideration the example of animals, it is unlikely that courts will recognize *Teilrechtsfähigkeit* for intelligent agents on their own. This calls for the lawmaker to come up with a slight push, which I call the ‘reversed animal rule’: It should be made clear by statute that intelligent agents are not persons, yet that they can still bear certain legal capabilities consistent with their serving function.

1 Introduction

On April 19, 2015, more than 20 years after her death, Audrey Hepburn was 1

reborn in a laboratory in Hong Kong. The scientists had done an outstanding job, one could think she had just returned from Hollywood's Golden Age. Something in her appearance was slightly different, though. Where one would have expected her characteristic dark brown hair, only a transparent skull cap covering electric cables and circuit boards existed. And instead of Audrey, she insisted on being called Sophia.

2 What happened in Hong Kong was not another milestone for modern medicine. It was a demonstration of state-of-the-art technology. The scientists had not brought Audrey Hepburn back to life, they had created a technical twin, a doppelgänger robot named Sophia. Just like the real actress, Sophia is able to imitate gestures and facial expressions. Thanks to artificial intelligence, visual data processing and facial recognition, she can walk, sustain eye contact and engage in small talk.¹ And she is a public figure as well: The United Nations Development Program nominated Sophia as the first-ever Innovation Champion for Asia and the Pacific. She made the front pages of several magazines and even appeared on TV shows.² The latest highlight followed in 2017, when Sophia became a citizen of the kingdom of Saudi Arabia, being the first robot to receive citizenship of any country.³

3 But Sophia is just the most prominent example. A number of her siblings are out there. Virtual assistants, such as Amazon's Echo or Apple's Siri, are able to shop online, order pizza, or request an Uber ride for their users. The Georgia Institute of Technology designed the robot Curi for the purpose of organizing an entire dinner – starting with grocery shopping to preparing the meal and ending with choosing the right wine.⁴ The kitchen will by no means be the last place intelligent agents will take over. By the end of the next decade, experts assume autonomous cars to rule our roads, while humans will take the backseat.⁵

4 Naturally, such a deep transformation does not come without difficulties. The law as well will not remain unaffected by these challenges. Just consider the examples mentioned: How do smart assistants conclude binding contracts? Who is responsible if someone is injured by an autonomous car? Is it possible to grant robots citizenship? All of these issues face unique problems in and of themselves. Nonetheless, in the end these boil down to the same fundamental question, which I call the 'status question': What exactly are intelligent agents in legal terms? Are we just looking at sophisticated objects? Or should such systems be treated as legal persons, somewhat similar to humans? In this article I will argue in favor

¹<http://www.bbc.com/future/story/20170906-how-it-feels-to-meet-sophia-a-machine-with-a-human-face>.

²<http://www.asia-pacific.undp.org/content/rbap/en/home/presscenter/pressreleases/2017/11/22/rbfsingapore.html>.

³<https://www.cnbc.com/2017/12/05/hanson-robotics-ceo-sophia-the-robot-an-advocate-for-womens-rights.html>.

⁴<https://www.theatlantic.com/technology/archive/2014/03/the-dream-of-intelligent-robot-friends/284599>.

⁵See Wachenfeld et al. (2015), 9; Matthaei et al. (2016), p. 1519.

of a functional approach: *Teilrechtsfähigkeit* – a *partial legal status* based on *specific legal capacities*.⁶

2 The ‘double dilemma’

The status question is typically approached from two sides: Philosophically or sociologically speaking, one could ask if intelligent agents should be considered agents in the strict sense. This would entail treating intelligent agents as acting and accountable subjects just as humans. Legally speaking the main question is whether it is necessary to grant intelligent agents legal personality for doctrinal or practical reasons. This section will illustrate that both approaches eventually lead to a ‘double dilemma’: While there are good arguments in favor of granting such a status, acknowledging legal personality leads to a slippery slope.

2.1. The case for agency

Especially in continental philosophy, agency is traditionally linked to attributes such as free will, reason and self-awareness. Due to these characteristics, agents are able to make moral judgments and can be held accountable for their actions. This distinguishes agents from objects, which are driven by natural forces and lack the ability to think and reflect – animals being the classical example. Unlike agents, objects are not, as Kant put it, an end in themselves, instead they are a means to an end. Hence, subjects act upon objects or wield power over them.⁷

With that in mind, the answer to the status question seems to be a no-brainer: Neither smart assistants nor driverless cars have a free will or self-awareness. They do not reflect on what is ‘right’ or ‘wrong’. Intelligent agents simply follow a certain protocol, acting according to a subject’s – the programmer’s, user’s etc. – directions. Many scholars do not even consider their ability to ‘think’ and ‘learn’ a gamechanger.⁸ Despite promising results in the last years, these scholars argue that human intelligence still outperforms artificial intelligence, in particular when it comes to creativity and originality. Moreover, there are some fundamental objections to equating intelligent agents to human beings. Namely computer scientists stress that not only the term ‘intelligent agent’ but the comparison with human agents in general is misleading because intelligent agents are structured differently and will never think and act like humans.⁹

Although this line of argument might sound convincing, it is not in any way helpful in answering the status question. Based on the traditional concept of agency, it is no surprise that intelligent agents are excluded: they are simply not humans. The classical concept of agency – especially with its underlying assumptions of free will, reason, self-awareness etc. – is tailored to fit us. It was made to

⁶For an earlier version of this approach see Schirmer (2016), p. 660.

⁷See Hew (2014), 197 and Schirmer (2016), p. 661.

⁸A good overview is given by Hew (2014), p. 198.

⁹See, for instance, the classic critique by Fodor (1983), 114. For more details on the debate see Cado (2015), p. 529.

explain why humans are moral subjects. In other words, one is not able to answer the status question without questioning the concept of status itself.¹⁰ Consequently, progressive philosophers do not try to find the human aspects in machines, instead they try to reconstruct agency in a far more abstract and therefore open sense. In Germany, one of the most prominent advocates for this approach is Andreas Matthias. He conceptualizes moral agency not as a matter of free will or reason, but as the ability to control one's own behavior.¹¹ Along with this ability, he argues, comes accountability, and with accountability comes subjectivity. In his opinion this reasoning is applicable to intelligent agents: They act with 'intentionality' because the code underlying their decisions does not determine the concrete path, i.e. how – and through which interim goals – they reach the ultimate target. In addition, Matthias points out that intelligent agents are receptive both to external reasons ('responsiveness') and to internal 'second-stage desires'. For instance, intelligent agents can wish to run a certain work process, but at the same desire to change that process in order to save battery power.¹²

- 9 The same result can be achieved when agency is not understood in an ontological sense but as an act of social attribution achieved through communication. Niklas Luhmann developed this concept with his famous systems theory. Gunter Teubner, one of Germany's leading legal sociologists, applies this theory to intelligent agents: Just like corporate entities, intelligent agents develop their own hierarchies of preferences, needs and interests. According to Teubner they differentiate themselves from other actors through communication, and by virtue of social attribution, they are eventually perceived as independent actors themselves.¹³ This concept of attribution through communication is, I think, what Ryan Calo had in mind, when claiming robots had social valence: '[t]hey feel different to us, more like living agents.'¹⁴ However, Teubner's comparison to corporations shows that this perception is not just true for anthropomorphic technology such as robots. In other words, humans do not treat a non-human entity as an agent only because this entity has a physical presence. Although there is strong empirical evidence that physical resemblance enhances the attribution process,¹⁵ the example of corporations shows that humans are equally comfortable with treating intangible constructs like themselves, as long as they can perceive and address this 'something' as a 'separate communicative something'.¹⁶ When people feel affection for Siri or other digital assistants, they do not project their

¹⁰See generally Gruber (2012), p. 134; Teubner (2018), p. 172.

¹¹Matthias (2008), p. 45. For an English summary of Matthias' theory see Matthias (2004), p. 175.

¹²Here Matthias refers to Harry Frankfurt's famous concept.

¹³Teubner (2018), p. 166. For an earlier version of his theory Teubner (2006), p. 14.

¹⁴Calo (2015), p. 532.

¹⁵See, for instance, Kahn et al. (2011), p. 125.

¹⁶Historian Yuval Noah Harari (2014), p. 86, describes this concept in his impressive study on the history of humankind as the 'inter-subjective reality', which 'exists within the communication network linking the subjective consciousness of many individuals.'

feelings on the device; it is the communicative counterpart, the replying unphysical ‘something’, they hold dear.¹⁷ This assessment strengthens the systems theory’s assumption that communication is the decisive factor. And communication is an attribute not only robots share, but one that is essential for all kinds of intelligent agents.¹⁸

2.2. The first dilemma

All of these elements provide strong arguments for treating intelligent agents as acting subjects. Once one is willing to adjust the classical agency concept to fit other entities besides humans, both the technical capabilities of intelligent agents as well as other actors’ perceptions push for subjectivity. Yet this leads to another fundamental question: Should we really *allow* this to happen? If in the end it is a matter of conceptualization, then it is in our hands whether we include intelligent agents or not. Because humans are, at least for now, the gatekeepers to agency, we can as well keep everyone else out. In the end, the status question comes down to a decision, but a decision we eventually have to make.¹⁹

And there are, no doubt, good reasons to have second thoughts. For one, treating intelligent agents as accountable subjects could shift the focus away from human responsibility. Jack Balkin has a point when he argues that the discussion about agency is misleading for this very reason; not the ‘obedient Golem’, as he puts it, but his master, ‘the Rabbi’, is to blame when the Golem steps out of line.²⁰ Yet aside from allocating responsibilities, the status question has a much more essential underlying issue: Where would granting agency leave us (→ Ernst, para 7)? From agency it is just a short step to personhood. Once this point is reached intelligent agents would in effect join the ranks of humans.²¹ In other words, we should ask ourselves if we are willing to put pressure on the unique status of humans in society by bringing in a new player. This is an especially pressing question because we are not talking about a clumsy rookie, but a player that will eventually outperform us without even breaking a sweat (→ Hoffmann-Riem, para 1).²² On the other hand, missing the right moment or not considering agency at all, could also be the wrong choice because at some point intelligent agents could demand subjectivity and eventually personhood by force. I admit, this

¹⁷See <https://www.nytimes.com/2014/10/19/fashion/how-apples-siri-became-one-autistic-boys-bff.html>. Spike Jonze’s 2013 movie ‘Her’ is another (fictional) example, see also Balkin (2015), p. 56.

¹⁸See Teubner (2018), pp. 166 and 174.

¹⁹See also Wagner (2018), p. 20.

²⁰See Balkin (2017), p. 1223 (‘homunculus fallacy’).

²¹See Eidenmüller (2017), p. 776 (‘So, treating robots like humans would dehumanize humans, and therefore we should refrain from adopting this policy.’).

²²Just take Google’s AlphaGo Zero algorithm, which reached superhuman level in just a couple of days of training and five million games of self-play, see Silver et al. (2017), p. 354. Another example is Hitachi’s swinging robot that learned to swing better than humans in a few minutes, see <https://www.youtube.com/watch?v=q8i6wHCefU4>.

might sound like a poor Hollywood script. However, in the past many oppressed minority groups had to resort to force in order to obtain their rights. In fact, the very concept of human agency is an intellectual revolt against oppression, an enlightenment by those who were kept in the dark for too long.²³

- 12 What then are we to do? In my opinion, there are equally good arguments for both sides, but either of them involves high risks. This leaves us with the first dilemma: Agency or no agency – apparently there is no right choice.

2.3. The case for legal personality

- 13 The question of legal personality is related to the agency discourse. However, at least in Europe and especially in Germany, it is approached from a different angle. Most scholars are concerned about the disruptive effects in law: Intelligent agents no longer acting deterministically leads to a high degree of unpredictability. This in turn brings about a novel ‘autonomy risk’ (*Autonomierisiko*). According to these scholars the autonomy risk in turn requires answers the existing law is unable to provide, ultimately creating so-called ‘responsibility gaps’ (*Verantwortungslücken*) – legal vacuums that need to be filled by new legal rules specifically crafted for intelligent agents. And for many authors, legal personality provides the most promising solution.²⁴

- 14 In 2017, the European Parliament joined this line of argument. The legislative body of the European Union appealed to the European Commission to adopt EU-wide new civil law rules on ‘robots, bots, androids and other manifestations of artificial intelligence’. According to the European Parliament, the use of intelligent agents is about to ‘unleash a new industrial revolution, which is likely to leave no stratum of society untouched’ and that will cause ‘legal and ethical implications and effects’ legislatures have to address.²⁵ In the long run, it will be necessary to create ‘a specific legal status [...], so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause, and possibly applying electronic personality to cases where robots make autonomous decisions or otherwise interact with third parties independently.’²⁶ If this recommendation eventually will be implemented, is hard to say. However, even if the European Commission takes the proposal into further consideration, the process of drafting and implementing would take years if not decades.²⁷

- 15 But what are those ‘responsibility gaps’ both legal scholars and the European Parliament are referring to? In the following I will illustrate the problem by referring to two prominent examples in German civil law: contract formation and torts.

²³See, for instance, Winkler (2016), p. 157.

²⁴See, among others, Mayinger (2017), p. 166; Günther (2016), p. 251.

²⁵European Parliament (2017), sec. B.

²⁶European Parliament (2017), sec. 59 f).

²⁷See Lohmann (2017), p. 168.

2.3.1. Contract formation

Just as under most other national civil laws, contracts are concluded by a meeting of the minds. In Germany this is referred to as ‘corresponding declarations of intent’ (*übereinstimmende Willenserklärungen*).²⁸ If I enter a pizzeria and order a pepperoni pizza, I submit a declaration of intent (*Willenserklärung*) that is intended to trigger a legal consequence – a legally binding offer to buy a pizza. But what if I instruct my smart assistant to ‘order food’ without making any further specifications? What if, say, the assistant ends up ordering salad because it concludes, based on the time, previous meals and my diet, that I have had enough pizza already? Can the order still be considered my declaration of intent, was a valid contract concluded? 16

Some argue that an intelligent agent’s declaration always has to be treated as the declaration of its user.²⁹ This pragmatic approach, however, is problematic since it conflicts with the long-standing contract formation doctrine. In the above-mentioned example of ordering food, it is in fact the smart assistant which transforms my instruction to ‘order food’ into a legally binding offer. The assistant chooses what to order, at which restaurant and at what price. In other words, the smart assistant alone defines the essential components of the sales contract (*essentialia negotii*).³⁰ Taking it even further, my instructions themselves lack everything required for a binding offer because they are not detailed enough to trigger any legal consequences without my assistant’s specifications. This example illustrates clearly what the European Parliament had in mind when stating that traditional rules are made inapplicable ‘insofar as machines designed to choose their counterparts, negotiate contractual terms, conclude contracts and decide whether and how to implement them’.³¹ 17

Therefore, it is more consistent to apply the law of agency (*Stellvertretungsrecht*).³² The advantage of this approach being that the declaration could be classified for what it is, i.e. the intelligent agent’s own declaration. At the same time precise solutions could be possible with respect to the ‘autonomy risk’: The declaration would not strictly bind the user. The agent’s declaration would only produce binding effect if it was acting within its scope of authority (*Vertretungsmacht*). The existing rules could also provide solutions for mistakes (*Irrtümer*).³³ 18

In order to apply the law of agency, however, one would have to consider the agent’s declaration a *declaration of intent* – the problem being that these are con- 19

²⁸Markesinis et al. (1997a), p. 47.

²⁹See Spindler 2014, p. 64: ‘Einstweilen geklärt’; Müller-Hengstenberg and Kirm (2016), p. 139; Arbeitsgruppe Digitaler Neustart (2017), p. 103.

³⁰Markesinis et al. (1997a), p. 48.

³¹European Parliament (2017), sec. AG.

³²See Teubner (2018), p. 177; Specht and Herold (2018), p. 42; Schirmer (2016), p. 664.

³³Schirmer (2016), p. 664.

ceptually reserved for human beings alone, as only they can trigger legal consequences by virtue of their free will. In other words, applying the law of agency seems to depend on granting intelligent agents legal personality similar to that of humans: Without legal personality no declaration of intent would exist, and without a declaration of intent the law of agency is not applicable. Indeed, that is one major reason why the European Parliament calls for an ‘electronic personality’. This could help solve ‘cases where robots make autonomous decisions or otherwise interact with third parties independently’.³⁴

2.3.2. Torts

- 20 Despite some forms of strict liability, the German tort system is conceptually based on fault. Plaintiffs only succeed if they can prove the tortfeasor injured a legally protected right (*Rechtsgut*) intentionally or negligently.³⁵ Unlike under common law, no vicarious liability rule exists, i.e. superiors are not strictly liable for wrongful acts of their subordinates; instead, plaintiffs must prove the superiors themselves acted intentionally or negligently.³⁶ This short introduction alone illustrates the difficulties plaintiffs would face in making a tort case involving an intelligent agent. What if, say, I instructed my consistently reliable smart assistant to water the flowers on my balcony and it misinterpreted an input signal running the water throughout the night, which lead to the destruction of my neighbor’s valuable roses one floor below? Would I be held liable for my smart assistant’s act?
- 21 The plaintiff could only try to make a claim for negligence since there are obviously no indications for intent on my behalf. Under German tort law, the plaintiff must show that the tortfeasor breached a *Verkehrspflicht*, a duty of care that arises once someone is engaged in a potentially dangerous activity. In my example, some scholars would argue that a duty of care had been breached. In their view, I would have failed to properly monitor and control my smart assistant.³⁷ Just as in the contractual context, however, this pragmatic approach fails to reflect the essential element of intelligent agents, as defendants can rely on the concept of the ‘autonomy risk’ as a defense: The damage was not foreseeable. ‘Malfunctions’ can hardly be prevented even with the best possible monitoring in place. In fact, damages like the destruction of my neighbor’s roses are the very essence of the ‘autonomy risk’: By allowing intelligent agents to interact with

³⁴European Parliament (2017), sec. 59 f).

³⁵See generally Markesinis et al. (1997b), p. 35.

³⁶Sec. 831 para. 1 German Civil Code states: ‘A person who uses another person to perform a task is liable to make compensation for the damage that the other unlawfully inflicts on a third party when carrying out the task. Liability in damages does not apply if the principal exercises reasonable care when selecting the person deployed and, to the extent that he is to procure devices or equipment or to manage the business activity, in the procurement or management, or if the damage would have occurred even if this care had been exercised.’ See generally Markesinis et al. (1997b), p. 676.

³⁷See, for instance, Spindler (2014), p. 70; Arbeitsgruppe Digitaler Neustart (2017), p. 111.

their environment autonomously, erroneous decisions are to a certain extent inevitable.³⁸ Most tort cases involving intelligent agents will simply lack any basis for negligence (for the ‘lack of transparency’ see generally → Hoffmann-Riem, para 51). Anyone who opposes this view in fact argues for strict vicarious liability – yet such rule does not exist under German civil law.³⁹

To fill the responsibility gap, some scholars try to tackle the problem at the source by allocating liability to the intelligent agent itself.⁴⁰ Of course this would require a pool of assets from which damages could be disbursed. However, this is rather a technical than a conceptual problem: The intelligent agent could either be equipped with some sort of equity, which could even increase through commissions paid for each of its regular activities. Or compulsory insurance or liability funds could cover the damage.⁴¹ The conceptual issue runs deeper: Allocating tort responsibility to intelligent agents as a necessary first step requires the ability to be a tortfeasor. Yet under German civil law only persons can be tortfeasors.⁴² At least for now, one must say, due to the European Parliament’s advocacy for the ‘status of an electronic person’ aiming to overcome this hurdle so that intelligent agents could be held responsible ‘for making good any damage they may cause’.⁴³ 22

2.4. The second dilemma

In summary, granting intelligent agents legal personality could indeed have a positive impact on German (and most other continental) civil law. Once intelligent agents are considered persons under the law, the ‘responsibility gaps’ many civil law systems face today would be filled. Moreover, the ‘legal [...] implications and effects’ of the ‘new industrial revolution’,⁴⁴ would suddenly seem manageable – a single change of the law would bring many existing frameworks such as the law of agency or torts back to life. 23

But there is a catch. Granting intelligent agents legal personality would most likely end in what I call the ‘humanization trap’.⁴⁵ The status as a legal person indicates a significant normative upgrading. The law would not only move a formerly marginal occurrence to the center of attention, but also address intelligent agents as independent actors. Intelligent agents would be placed at the same level as other legal subjects, bringing it very close to the most prominent representative – the human being. And once an entity reaches this point, the trap snaps shut. It 24

³⁸See Schirmer (2018), p. 462.

³⁹See Teubner (2018), p. 190; Schirmer (2016), p. 665.

⁴⁰See Mayinger (2017), p. 244.

⁴¹For this approach see European Parliament (2017), sec. 59 and Wagner (2018), p. 22.

⁴²Sec. 823 para 1 states: ‘A person who, intentionally or negligently, unlawfully injures the life, body, health, freedom, property or another right of another person is liable to make compensation to the other party for the damage arising from this.’; see generally Markesinis et al. (1997b), p. 35.

⁴³European Parliament (2017), sec. 59 f).

⁴⁴European Parliament (2017), sec. B.

⁴⁵Schirmer (2016), p. 662.

gets harder to justify why this person should not enjoy the same rights and privileges natural persons enjoy. The experience in dealing with corporate entities is a good (and warning) example: Many German jurists claim that legal entities hold the general right to personality because *as persons* they should enjoy the same rights as other persons.⁴⁶ Similarly, in the United States a formalistic interpretation of the word ‘person’ in the fourteenth amendment entailed granting corporations the right to free speech. This has had wide ranging consequences for the legal system and society as a whole.⁴⁷ In other words, just as with legal entities, it would be hard to justify why intelligent agents, although recognized as persons under the law, should not hold certain rights such as worker protection or even constitutional rights.⁴⁸ To be clear, I am not saying that intelligent agents should not enjoy these rights at all. I just think it is important to determine their ability to be rightsholders for each right individually. Yet in vesting intelligent agents with legal personality, the debate could be over before it even began.

25 So once again, we are stuck in a dilemma: Granting legal personality seems crucial to close the ‘responsibility gaps’ created by the ‘autonomy risk’. But at the same time, it will put us on a slippery slope.

3 A ‘halfway status’ made in Germany – introducing *Teilrechtsfähigkeit*

26 Many scholars share the underlying concern of the ‘humanization trap’. Ryan Calo, for instance, argues that intelligent agents might use their legal status to claim the right to procreate or desire democratic representation. Following psychologist Peter Kahn and colleagues in their suggestion of a new ontological category, he proposes to create ‘a new category of a legal subject, halfway between person and object.’⁴⁹ Jack Balkin supports this approach because it matches people’s unstable and incomplete perception of intelligent agents: ‘People may treat the robot as a person (or animal) for some purposes and as an object for others.’ By assigning a ‘halfway-status’ the law could not only reflect this view but open a path to ‘contextual [...], and, above all, opportunistic’ solutions.⁵⁰

27 Calo and Balkin seem to have found the way out of the dilemma. Instead of treating the status question as a matter of ‘either/or’, they found an interim solution. Yet, such an in-between category is rather unusual. Traditionally, law distinguishes between persons and non-person. Something is either an active legal

⁴⁶See generally Schirmer (2015), p. 201.

⁴⁷First National Bank of Boston v. Bellotti, 435 U.S. 765 (1978). See generally Scofield (1979), p. 1225.

⁴⁸But see, for example, Kersten (2017), p. 14, who argues in favor of a constitutional right to privacy. In other words, the kind of issues that would arise were robots to ‘wake up’ are of an entirely other order.

⁴⁹Calo (2015), p. 549.

⁵⁰Balkin (2015), p. 57; similar Wagner (2018), p. 20: ‘Entity status is no black- and-white decision but allows for graduation; the accordance of legal status in one context need not lead to an award of the same status in another.’

subject with rights and obligations, or an inactive, subordinated object. Nevertheless, Calo believes that the dichotomy has come to an end; the work on a ‘halfway status’ must start now and ‘the law will have to make room for this category’.⁵¹

Neither Calo nor Balkin, however, offer a theory for a ‘halfway-status’. Without a theory, though, the new status stays vague and offers, I think, not much help. For the remainder of this article, therefore, I will try to outline what such a theory could look like. The good news is, I do not have to reinvent the wheel: German law offers exactly such a ‘halfway category’. We call it *Teilrechtsfähigkeit* – partial legal capacity. Let me give you a brief overview. 28

3.1. *Teilrechtsfähigkeit*

Under German law, legal capacity describes the ability to have rights and obligations. Historically, one could either have full legal capacity or no legal capacity at all. For human beings, for example, the legal capacity began on the completion of birth and ended with death, while before and after these events humans could not exercise rights or bear obligations at all.⁵² The same was true for corporations. Upon registration they were recognized as legal persons bearing full legal capacity, whereas before registration or after liquidation they were legally nonexistent. Put simply, it was a system of all or nothing – either one had the potential to have all rights and obligations the legal system had to offer, or one was treated as a complete nobody.⁵³ 29

Such a structure has a huge benefit. It is an easy binary code, yes or no, black or white. Even in Germany, though, reality comes in shades of gray. Soon the question arose how the law should deal with entities during the process of formation. For instance, how should the law protect the unborn life (so-called *nasciturus*) or cope with unregistered but already operating companies if neither of them had any rights or obligations? For Eugen Ehrlich the answer was to widen the understanding of legal capacity. In his 1909 published book ‘*Die Rechtsfähigkeit*’, he argued that the whole idea of a two-tier system of legal capacity was flawed. By pointing out examples, such as the concept of slavery in ancient Rome or the treating of minors in modern civil law systems, he concluded that at all times legal capacity came in plurals – the binary code was a theoretical illusion, in reality many sorts of legal capacities and therefore many legal statuses existed.⁵⁴ In the 1930s, Hans-Julius Wolff transformed Ehrlich’s observation into the concept of *Teilrechtsfähigkeit*. He determined *Teilrechtsfähigkeit* to be the status applicable to a human or an association of humans having legal capacity only according to specific legal rules, but otherwise not bearing duties and having 30

⁵¹Calo (2015), p. 549.

⁵²The very first section of the German Civil Code states: ‘The legal capacity of a human being begins on the completion of birth.’

⁵³See generally Lehmann (2007), p. 226.

⁵⁴Ehrlich (1909), *passim*.

rights.⁵⁵ According to Wolff, an entity could have legal capacity with regard to some areas of law, whereas at the same time it could be excluded from others.

31 During the Nazi-Regime, however, *Teilrechtsfähigkeit* was used in a way that neither Ehrlich nor Wolff had in mind.⁵⁶ Namely Karl Larenz, one of the leading jurists of the Third Reich, heavily relied on the idea of gradated legal capacities to justify the exclusion of Jewish citizens from civil liberties, while at the same time making Jews subject to various obligations.⁵⁷ His abuse hit the concept hard. After the war many argued – ironically one of them was Larenz himself – that the whole idea of a ‘halfway status’ was flawed and the law should return to the classical binary system.⁵⁸ Yet, the idea of *Teilrechtsfähigkeit* prevailed eventually, in particular because German courts adopted it in various forms.⁵⁹ In the 1970s, Germany’s Federal Constitutional Court acknowledged the state’s duty to protect the unborn life. Building on this, the Federal Court of Justice found that a sales contract or a donation agreement could also be concluded in favor of the unborn child.⁶⁰ Like under English common law, the unborn child was considered a legal subject whenever this was consistent to the idea of a human being in the making. The same is true for the preliminary company (*Vorgesellschaft*). It is considered a legal entity of its own kind (*Rechtsform sui generis*) subject only to the rules of the articles of association and the statutory laws governing the company, insofar as those laws do not require registration.⁶¹ The same applies to certain company types such as the company constituted under civil law (*Gesellschaft bürgerlichen Rechts*) or the homeowner’s association (*Wohnungseigentümergeinschaft*).⁶² All of these entities have partial legal capacity. That is to say, whereas they are not legal persons with full legal capacity, they are still legal subjects, yet the range of their subjectivity is limited by their specific functions. The courts’ reasonings were always quite similar: Even in the case of the unborn child the courts were not so much motivated by a need to provide protection. Rather, the courts primarily acknowledged *Teilrechtsfähigkeit* for practical and doctrinal reasons. The addressability as a legal actor solved certain legal issues,

⁵⁵The idea appears first in Wolff (1933), p. 200 and, more detailed, in his later works on administrative law (*Verwaltungsrecht*).

⁵⁶Both of them were Jewish. Wolff had to flee Germany for Panama in 1935, Ehrlich died years before the *Machtergreifung*.

⁵⁷Larenz (1935), p. 239; see generally Jakobs (1993), p. 813.

⁵⁸Fabricius (1963), pp. 21, 35.

⁵⁹Fabricius, (1963), pp. 5, 111; Behme (2018), paras 4 et seq.

⁶⁰Bundesverfassungsgericht 1 BvF 1 - 6/74 (Feb 25, 1975), BVerfGE 39, p. 1; Bundesgerichtshof XII ZR 29/94 (May 3, 1995), BGHZ 129, p. 297.

⁶¹Behme (2018), paras 9.

⁶²For the GbR see Bundesgerichtshof II ZR 331/00 (Jan 21, 2001), BGHZ 146, p. 344 (‘beschränkte Rechtssubjektivität’); for WEG see Bundesgerichtshof V ZB 32/05 (June 2, 2005), BGHZ 163, p. 158 (‘Teilrechtsfähigkeit’); see generally Lehmann (2007), p. 231.

such as the question how donation agreements with an unborn child are concluded or how pre-companies as such purchased goods.⁶³

Conceptually, the concept of *Teilrechtsfähigkeit* as it is understood today represents a third way of understanding legal subjectivity. Put simply, it is the Bauhaus School in law – form follows function. *Teilrechtsfähigkeit* is not so much a matter of morality. It stands for the sense that law itself can mold its actors according to its own particular terms and conditions.⁶⁴ In other words, creating an addressable subject is just another doctrinal way of solving problems, yet a way that is always limited in scope. The main difference to legal personality can best be illustrated by picturing a candy jar: For a person the jar is full, in principle persons can have all rights and obligations the law has to offer. This does not mean, of course, that they actually do have all those rights and obligations. But there is a presumption in their favor that persons have legal capacity not only in the abstract, but also with regard to specific rights and obligations.⁶⁵ Thus, there is an urging need for justification whenever certain rights and obligations are excluded from persons. Taking candy out of a jar, presupposes a defense. For subjects with only partial legal capacity it is a different story. They start off with an empty jar. Candy is placed into the jar only with respect to their specific functions. Again, this does not mean that the glass will always stay at that level. But each new candy placed into the jar has to be justified. In other words, the burden to justify the allocation of legal capacities is the exact opposite – legal personhood deals with subtracting, while *Teilrechtsfähigkeit* is concerned with adding rights and obligations. And those different starting points make a huge difference. 32

3.2. *Teilrechtsfähigkeit* for intelligent agents

Now that we know what the concept is all about, how could *Teilrechtsfähigkeit* work for intelligent agents? As pointed out, partial legal capacity follows function. The primary question hence becomes what function intelligent agents take on. By looking at the areas of application, it is fair to say that intelligent agents are sophisticated servants. Jack Balkin puts it well when he speaks of a ‘substitution effect’: Intelligent agents take on activities which persons are either unwilling to perform or incapable of.⁶⁶ At least for now they do not act in their own interest. Their job is to provide support for both natural and legal persons.⁶⁷ An autonomous car does not drive for driving’s sake, it drives to transport its occupant to a certain destination. A trading algorithm does not trade on its own account, but on the account of the person who deploys it. In other words, we are 33

⁶³Regarding the nasciturus see Bundesgerichtshof XII ZR 29/94 (May 3, 1995), BGHZ 129, p. 305.

⁶⁴Gruber (2012), pp. 134, 154; Kersten (2017), p. 9; Schirmer (2016), p. 662; see generally Luhmann (1993), p. 54.

⁶⁵See Behme (2018), para 5. In essence, this presumption goes back to Kant’s concept of subjective rights, see Habermas (1992), p. 131.

⁶⁶Balkin (2015), p. 59.

⁶⁷See Teubner (2018), p. 162; Schirmer (2016), p. 665.

looking at the classical ‘master-servant situation’, in which the servant acts autonomously, but at the same time on the master’s behalf.

34 Thus, intelligent agents should be treated as legal subjects insofar as this status reflects their function as sophisticated servants. Although scenarios are imaginable in which intelligent agents need protection particularly from their masters, this is, I think, not a matter of urgent concern.⁶⁸ The focus currently lies on practical and doctrinal ease: In which case can the status as a ‘servant’ help solve legal problems that arise due to the ‘autonomy risk’?

3.2.1. Contract formation and torts

35 In the before-mentioned examples of contract formation and torts, the concept of *Teilrechtsfähigkeit* can provide a viable solution. Regarding contracts, intelligent agents would not be able to conclude contracts on their own. Their legal subjectivity would be limited to the status of contractual agents. Due to their function as sophisticated servants, there is no need to assign intelligent agents all capabilities contract law has to offer. It is merely necessary to grant them those capabilities needed to conclude and execute their master’s contracts.⁶⁹

36 The same considerations are applicable to torts. Following function, the key question is not whether the intelligent agent itself should be held liable. The intelligent agent supports its master, the harm is not done in its own but in its master’s interest. In other words, since the tort is performed within the scope of deployment, liability should, as usual, address the person who profits from the deployment – the master (→ Schemmel, para 36; → Hennemann, para 37).⁷⁰ In common law jurisdictions, the obvious solution would be to apply the *respondeat superior* rule, which states that the master is strictly liable for acts of his or her agents. Doctrinally, however, the *respondeat superior* rule requires a negligent act of the agent. This implies that intelligent agents need to be considered potential tortfeasors – yet this problem could be solved by expanding its legal subjectivity and treating it not only as a contractual but also as a tortious agent. Due to the fact that German civil law does not foresee the concept of strict vicarious liability, this approach naturally would not suffice. Consequently, Gunter Teubner recently argued for the implementation of a master-servant rule based on the intelligent agent’s wrongful decisions (*digitale Assistenzhaftung*).⁷¹

37 Although this solution surely looks appealing from a doctrinal standpoint, I would argue against applying (or implementing) the *respondeat superior* rule for one simple reason: The concept’s weak point is its need for a servant’s negligent act.⁷² A negligent act necessitates a breach of a duty of care. The intelligent agent’s behavior must, therefore, lag behind a standard of reasonable care, i.e. the intelligent agent, as a minimum, has to perform poorer than other comparable

⁶⁸But see Kersten (2017), p. 14.

⁶⁹See Teubner (2018), p. 182; Schirmer (2016), p. 664.

⁷⁰See Teubner (2018), p. 190; Schirmer (2016), p. 665.

⁷¹See Teubner (2018), p. 193.

⁷²See Schirmer (2018), p. 470.

intelligent agents. Moreover, both in common and civil law systems, the harm or injury has to be foreseeable to some extent. But just as the master cannot foresee the harmful act, the intelligent agent itself cannot foresee it. Again, in allowing intelligent agents to interact with their environment autonomously, decisions that turn out to be wrong are to a certain extent inevitable. Unforeseeable harms are the very essence of the ‘autonomy risk’. Even when deploying the most sophisticated intelligent agents, wrongful decisions can never be avoided completely without abandoning the technical concept of machine autonomy as a whole.⁷³ Consequently, however, it becomes difficult to speak of the intelligent agent’s behavior as breaching a duty of care. Applying the *respondeat superior* doctrine would therefore not fill the ‘responsibility gap’: Most cases would lack the prerequisite of negligence and, therefore, the master’s liability could not be triggered.

A true strict liability for intelligent agents avoids this problem.⁷⁴ Because it does not presuppose an illicit and culpable behavior, strict liability would hold the user liable for every damage caused by the intelligent agent, relieve the plaintiff from proving that the intelligent agent acted negligently, and fill the ‘responsibility gap’ after all. 38

3.2.2. Side note: criminal law

So far, I have only provided examples pertaining to civil law. The benefits of the construct of *Teilrechtsfähigkeit*, however, do not end here. I want to illustrate this with a heavily debated issue under criminal law related to the famous ‘trolley problem’:⁷⁵ Assume, an autonomous car faces a situation, in which it must decide whether to hit and kill five people by going straight or kill just one person by making a sharp turn. Only these two options are available. The autonomous car cannot, say, perform a safety stop or sacrifice its passengers – it has the choice between killing five or killing one. Assume further, the autonomous car’s algorithm is programmed to follow the principle of maximum utility, meaning that it will make the turn and kill one person to spare four lives. This brings up two questions: Will the autonomous car’s passengers giving the instruction to start driving, face criminal charges? Can the person programming the algorithm be held responsible? 39

Most scholars answer both questions in the negative. To arrive at this conclusion, however, takes a considerable amount of reasoning. It is often argued that both the passenger and the programmer fulfill all elements of a (negligent) homicide but can rely on an extraordinary emergency defense (*übergesetzlicher Notstand*). Roughly speaking, this extra-legal justification is only available in extreme cases, in which great harm can only be prevented by sacrificing someone’s life – it is the last resort when the law has no justifications left.⁷⁶ 40

⁷³Schirmer (2019), p. 470.

⁷⁴See Spindler (2015), p. 775; Digitaler Neustart (2017), p. 116; Gifford (2018), pp. 124, 140.

⁷⁵See, for instance, Engländer (2016), p. 608; Ethik-Kommission (2017), p. 17.

⁷⁶Engländer (2016), p. 614.

41 Treating the autonomous car as a partial legal subject, however, would make life much easier. If we considered an intelligent agent to be a potential tortfeasor, one could argue that both the passenger and the programmer did not even commit the elements of a crime. Taking into consideration the proximate cause test – Germans speak of *objektive Zurechnung* – both acts caused the harm. Nonetheless, the argument could be made that both the act of the programmer and the passenger were not proximate enough to the harm to be legally valid because the car itself broke the causal chain by autonomously performing the turn – just as a human taxi driver would have broken it. Similar to the torts case, however, this does not necessitate holding the car itself criminally liable. In fact, it is hard to even find a reason for such an assessment.⁷⁷ If, say, an autonomous car repeatedly broke traffic laws or harmed others, maybe because its machine learning got out of hand, it should be possible to reprogram its software or, if ineffective, shut it down. Under criminal law, the notion of *Teilrechtsfähigkeit* just means that an intelligent agent should be treated as a legal subject insofar as it is capable of breaking the causal chain by performing a tortious act. From this capability, of course, does not follow that the intelligent agent will always break the chain and the programmer and the passenger will never be held responsible. Partial legal subjectivity simply provides a different line of argument for those cases in which there is no reason to press criminal charges.

4 Of mice and machines

42 These examples make a strong case for *Teilrechtsfähigkeit*. Partial subjectivity based on specific legal capacities brings us quite close to the ideal solution for intelligent agents. The ‘double dilemma’ that arises both from agency and personhood can be avoided. With *Teilrechtsfähigkeit* we can, indeed, have it both ways: Legal subjectivity without the slippery slope. Avoiding the status as a person with all its undesired consequences while at the same time still being able to allocate rights and obligations.

43 Yet one question has been left unanswered thus far: Who should assign *Teilrechtsfähigkeit*? As mentioned above, courts in Germany traditionally recognized partial legal capability.⁷⁸ Regarding intelligent agents, one could therefore argue that courts will sooner or later follow suit, all we have to do is wait.⁷⁹ However, there are good reasons to doubt this assumption. First, courts have been very reluctant in the past when it came to acknowledging legal subjectivity for non-human actors. The classical example would be animals: While courts have had no difficulties in granting soon-to-be humans or human associations partial legal status, only very few courts took a similar approach regarding orangutans or chimpanzees, although there are many good arguments to treat animals as legal

⁷⁷See generally Wagner (2018), p. 21; but see Seher (2016), p. 45.

⁷⁸See *infra* 3.1.

⁷⁹In this sense Teubner (2018), pp. 162 and 182. I have argued along these lines in the past, see Schirmer (2016), p. 664.

subjects.⁸⁰ Intelligent agents, therefore, will most likely share the same fate. Moreover, recognizing a partial legal status for machines or lines of software code is an even bigger step. To my mind, most courts will consider it too big a task to take on by themselves.

I would argue, therefore, in favor of pushing the courts in the right direction. 44
In order to achieve this goal, the lawmaker should implement a rule that I call the ‘reversed animal rule’. What I mean by that becomes clearer when looking at sec. 90a of the German Civil Code, which came into force in 1990 and states:

‘Animals are not things. They are protected by special statutes. They are governed by the provisions that apply to things, with the necessary modifications, except insofar as otherwise provided.’

What sounds confusing is, in fact, a smart piece of legislation. Sec. 90a creates a 45
legal fiction, a technique quite common under German civil law. Animals *are* no longer objects by the means of the law, but for practical and doctrinal reasons they are *treated* as if this were the case. In other words, animals and chairs are legally not the same thing, yet to a large extent the law treats them the same. This approach, when applied reversely, could also work for intelligent agents. I am thinking of a rule similar to this one:

‘Intelligent agents are not persons. Consistent with their serving function, they are governed by the provisions that apply to agents, with the necessary modifications, except insofar as otherwise provided’.

From this rule, one can infer several things: First, it is made perfectly clear that 46
intelligent agents are not persons, which avoids the slippery slope of legal personality. Second, the rule states that intelligent agents can still have certain legal capabilities consistent with their functions leaving it up to courts and scholars to identify and justify those capabilities. Third, the rule implies that intelligent agents remain objects for most of the time. This means, for instance, that they can be sold like any other good.

5 Conclusion

In this article I developed three major arguments. First, the discussion about 47
agency and personhood leads to what I call the ‘double dilemma’: On the one hand, the conceptual and practical arguments for a status similar to that of humans cannot be ignored. Yet at the same time, acknowledging such a status will put the exclusive status of humans under pressure and lead to a situation, in which one has to justify why certain rights and obligations are being withheld from intelligent agents. The ideal solution therefore must be a ‘halfway’ or ‘in-between’ status.

Second, German civil law offers a template for such a ‘halfway solution’—the 48
concept of *Teilrechtsfähigkeit*, a status of partial legal subjectivity based on certain legal capabilities. When applied, intelligent agents would be treated as legal

⁸⁰See, for instance, Peters (2016), p. 25.

subjects insofar as this status followed their function as sophisticated servants. This would both deflect the ‘autonomy risk’ and fill most of the ‘responsibility gaps’ without the negative side effects of personhood.

49 Third, taking into consideration the example of animals, it is unlikely that courts will recognize *Teilrechtsfähigkeit* for intelligent agents on their own. This calls for the lawmaker to come up with a slight push, which I call the ‘reversed animal rule’: It should be made clear that intelligent agents are not persons, yet that they can still bear certain legal capabilities consistent with their serving function.

50 Naturally, I am unsure whether this approach provides the first best solution. However, it buys some time, at the least. For now, the concept of *Teilrechtsfähigkeit* can be a powerful tool to solve most of the urgent problems involving intelligent agents without taking too much of a risk. Since we do not know where artificial intelligence will eventually lead us, it might not be the worst idea, as Germans would say, *auf Sicht zu fahren* – to pick a speed at which we remain in control as long as we can.

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