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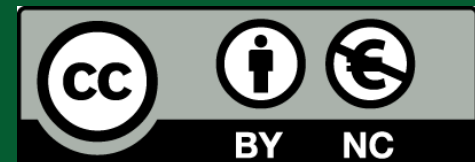


recognise
Legal Reasoning
& Cognitive Science

Materials from Recognise Video-Lectures

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The dual challenge from AI and cognitive science: A framework for analysis



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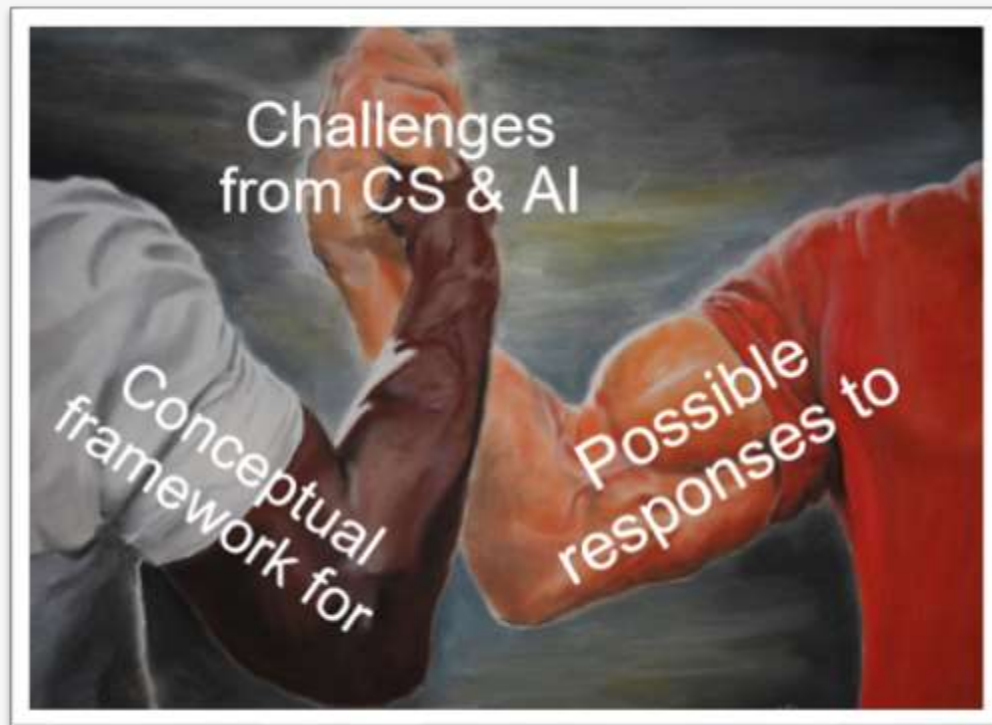
Part 1

Dr. AM Waltermann
(Maastricht University)

Main claim



Main aims



What am I talking about?

In the Netherlands, children can be held criminally liable from the age of 12.⁷ In 2014, the new *adolescentenstrafrecht* (criminal law applicable to young adults, hereafter: CLYA) was introduced which stretches the possibility to apply provisions of juvenile criminal law to young adults between the age of 18 and 23. The rationale behind the CLYA, according to its explanatory memorandum (hereafter: EM), are recent findings in neuroscience and developmental psychology. These findings suggest that at the age of 18 young people still have to go through important stages of brain development, which includes emotional, social, moral and intellectual development.⁸ According to the memorandum, research

What am I talking about?

We showed that acting under coercion deeply modifies the sense of being responsible for outcomes of one's actions. It also attenuates the neural processing of outcomes. Both results can be interpreted as a cognitive operation of "distancing," or reducing the linkage between one's own decision-making, action, and outcome. Our results may have profound implications for social and legal responsibility. Laws are culturally evolved rules for managing impact of individuals' behaviors on others. Laws must therefore engage with the psychological and neuro-cognitive mechanisms that drive individual actions. Our finding

Caspar, Emilie A., et al. (2016). "Coercion Changes the Sense of Agency in the Human Brain." *Current Biology* 26(5): 585-592.

What am I talking about?

$AI(T_0) = \emptyset$). In the field of Law, this scenario actually opens up the possibility that a machine, on the basis of deductive rules, facts and categories, can reach the levels of complexity of human legal reasoning, until replacing it. But this perspective is not without question marks. For example, does the human judge argue only by deductive categories? Moreover, which role have the emotions in taking decisions? Will a digital judge, emotionally neutral, be fairer than a human judge?

Francesconi, E. The winter, the summer and the summer dream of artificial intelligence in law. *Artif Intell Law* 30, 147–161 (2022).
<https://doi.org/10.1007/s10506-022-09309-8>

What am I talking about?

AI, this technology is starting to make its way into digital decision-making systems and is in effect replacing human decision-makers. A prime example of this development is the use of AI to assist judges in making judicial decisions. However, in many circumstances this technology is a 'black box' due mainly to its complexity but also because it is protected by law. This lack of transparency and the diminished ability to understand the operation of these systems increasingly being used by the structures of governance is challenging traditional notions underpinning the rule of law. This is especially so in relation to concepts especially associated with the rule of law, such as transparency, fairness and explainability. This article examines the

Greenstein, S. Preserving the rule of law in the era of artificial intelligence (AI). *Artif Intell Law* (2021).
<https://doi.org/10.1007/s10506-021-09294-4>

Internal and external, of and within



Framework (abstract)

Internal	External
<p>CONCEPTIONS</p> <p>Challenge the criteria for application or content of conception of our legal concepts</p>	<p>PRESUPPOSITIONS</p> <p>Challenge the fundamental presuppositions of our legal practice</p>
<p>APPLICATIONS</p> <p>Challenge how our legal concept(ion)s are actually applied.</p>	<p>IMPLICATIONS</p> <p>Challenges to our legal practice by showing it has implications that frustrate the purpose(s) of the practice</p>

Framework (examples)

Internal	External
<p>CONCEPTIONS</p> <p>Should current liability regimes be extended to cover actions of artificially intelligent agents?</p>	<p>PRESUPPOSITIONS</p> <p>Some hold that AI cannot be responsible because it lacks e.g. free will – but cog sci gives good reasons to assume humans don't have (that type of) free will, either.</p>
<p>APPLICATION</p> <p>If some brain tumors cause pedophilia, should offenders with such a tumor fall under diminished capacity and/or receive a reduced sentence?</p>	<p>IMPLICATIONS</p> <p>Alces & Sapolsky: “the law reaches conclusions that actually undermine human thriving (by relying on a misconception of what it means to be human).”</p>

Full framework

	<i>Within reasoning</i>		<i>Of/about reasoning</i>	
<i>Human cognition</i>	Internal Application Conceptions	External Implications Presuppositions	Internal Application Conceptions	External Implications Presuppositions
<i>Artificial cognition</i>	Internal Application Conceptions	External Implications Presuppositions	Internal Application Conceptions	External Implications Presuppositions



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Part 2

Dr. AM Waltermann
(Maastricht University)

Recap

	<i>Within reasoning</i>	<i>Of/about reasoning</i>								
<i>Human cognition</i>	<table border="1"><tr><td>Internal Application</td><td>External Implications</td></tr><tr><td>Conceptions</td><td>Presuppositions</td></tr></table>	Internal Application	External Implications	Conceptions	Presuppositions	<table border="1"><tr><td>Internal Application</td><td>External Implications</td></tr><tr><td>Conceptions</td><td>Presuppositions</td></tr></table>	Internal Application	External Implications	Conceptions	Presuppositions
Internal Application	External Implications									
Conceptions	Presuppositions									
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Conceptions	Presuppositions									
<i>Artificial cognition</i>	<table border="1"><tr><td>Internal Application</td><td>External Implications</td></tr><tr><td>Conceptions</td><td>Presuppositions</td></tr></table>	Internal Application	External Implications	Conceptions	Presuppositions	<table border="1"><tr><td>Internal Application</td><td>External Implications</td></tr><tr><td>Conceptions</td><td>Presuppositions</td></tr></table>	Internal Application	External Implications	Conceptions	Presuppositions
Internal Application	External Implications									
Conceptions	Presuppositions									
Internal Application	External Implications									
Conceptions	Presuppositions									

Practical and theoretical reason

Practical reason

- Concerned with action
- “What ought I do?”
 - Normative

Theoretical reason

- Concerned with facts and the explanation
 - Not normative
- Or, concerned with what one ought to believe
 - Normative

Real challenges or nothing to worry about?



No inconsistency, no challenge

- Theoretical vs practical reason
- No inconsistency because we're not talking about the same thing?



Inconsistency, but no challenge

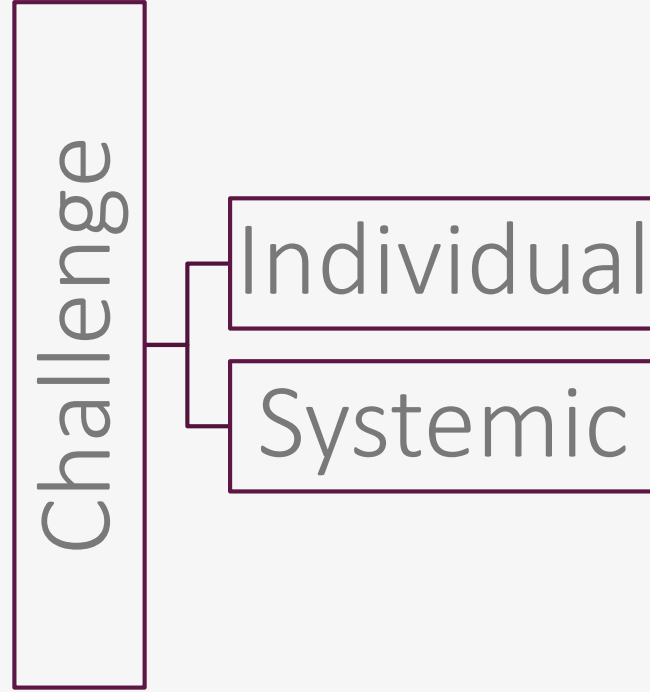
- Different perspectives or no requirement of consistency
- No challenge



Inconsistency & challenge

- If we are not talking about different things & assume there should be consistency, there is a genuine challenge

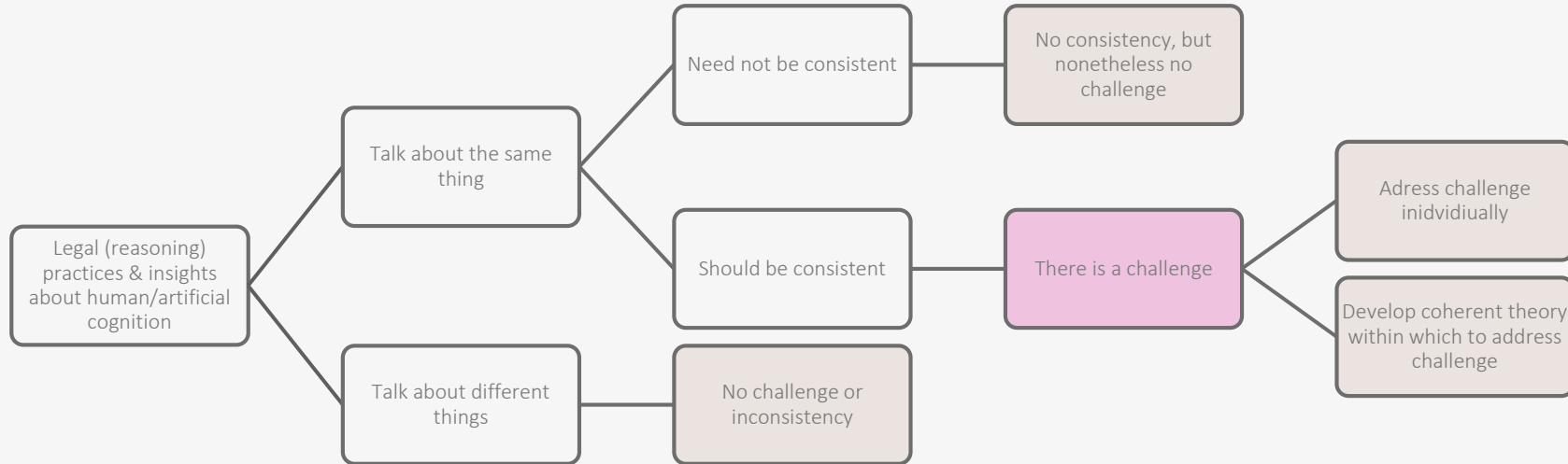
If there is a challenge?



Conclusion (1)

	<i>Within reasoning</i>		<i>Of/about reasoning</i>	
<i>Human cognition</i>	Internal Application	External Implications	Internal Application	External Implications
	Conceptions	Presuppositions	Conceptions	Presuppositions
<i>Artificial cognition</i>	Internal Application	External Implications	Internal Application	External Implications
	Conceptions	Presuppositions	Conceptions	Presuppositions

Conclusion (2)



Some further reading:

Mackor, Anne Ruth (2013), What can neurosciences say about responsibility? Taking the distinction between theoretical and practical reason seriously. In Vincent NA. *Neuroscience and Legal Responsibility*. New York: Oxford University Press

Hage, J. (2021). Are the Cognitive Sciences Relevant for Law? In B. Brožek, J. Hage, & N. Vincent (Eds.), *Law and Mind: A Survey of Law and the Cognitive Sciences* (Law and the Cognitive Sciences, pp. 17-49). Cambridge: Cambridge University Press. doi:10.1017/9781108623056.002

Rawls, John. "Two Concepts of Rules." *The Philosophical Review* 64, no. 1 (1955): 3–32. <https://doi.org/10.2307/2182230>.

Peter A. Alces and Robert M. Sapolsky, Nohwere, 63 Wm. & Mary L. Rev. 1079 (2022), <https://scholarship.law.wm.edu/wmlr/vol63/iss4/2>

Hage, J., & Waltermann, A. (2021). Responsibility, Liability, and Retribution. In B. Brožek, J. Hage, & N. Vincent (Eds.), *Law and Mind: A Survey of Law and the Cognitive Sciences* (Law and the Cognitive Sciences, pp. 255-288). Cambridge: Cambridge University Press. doi:10.1017/9781108623056.013