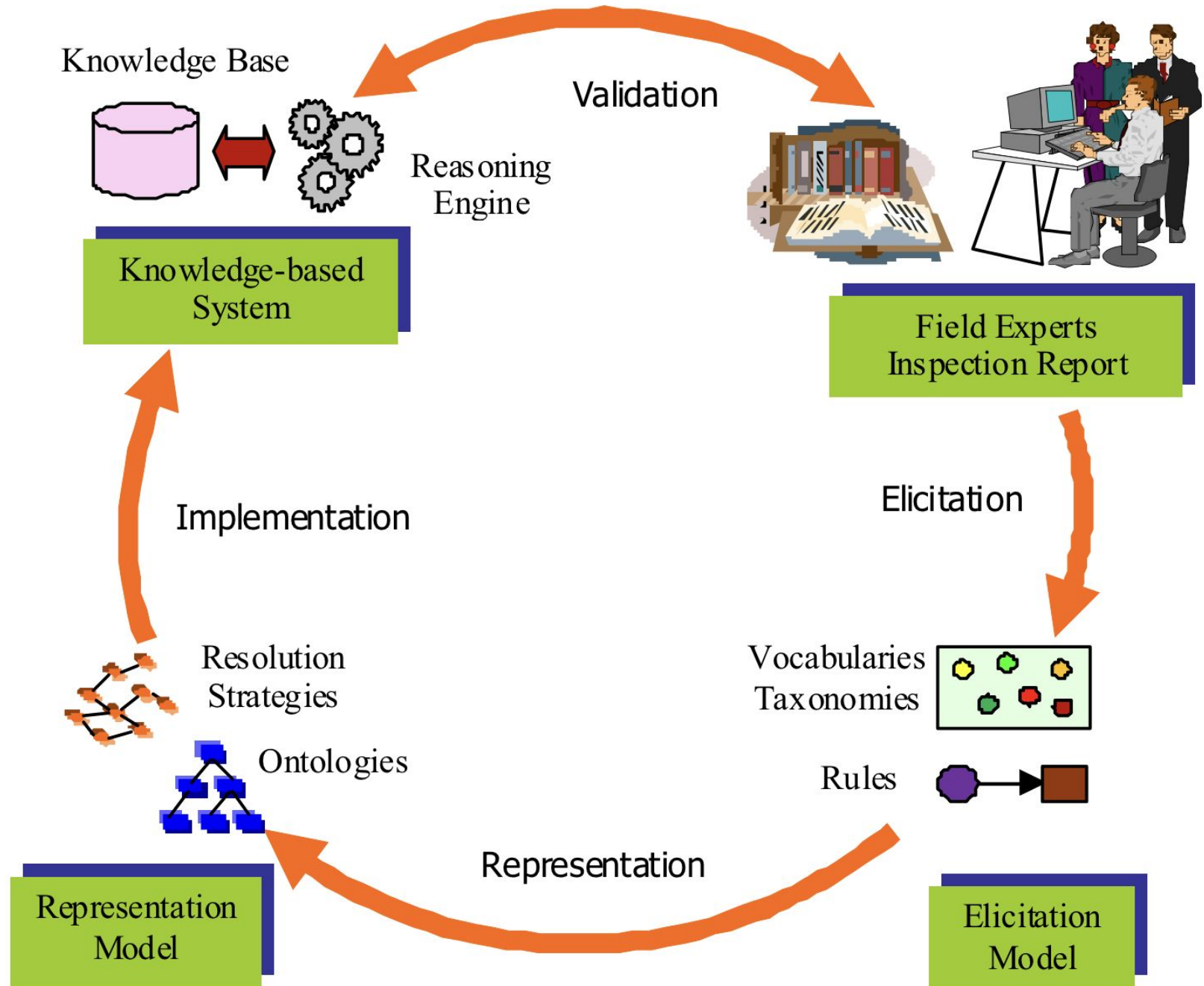


UNIVERSITY OF TWENTE.

Challenges in Legal Knowledge Representation

Ítalo Oliveira

<https://italojsoliveira.github.io/>



Legal Knowledge Representation = Legal Interpretation

- Conflict of interest among lawyers.
- ...
- ...
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Legal Knowledge Representation = Legal Interpretation

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- Ambiguity and vagueness of legal texts.
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- **Explicit exceptions and monotonicity.**
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Legal Knowledge Representation = Legal Interpretation

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- **Asymmetry between the law and legal practice.**
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- Asymmetry between the law and legal practice.
- Disagreement about legal interpretation.
- Principles, implicit exceptions, and defeasibility of legal rules.





Local regulation

Walk on the grass. Penalty: a fine.



$\forall x. \text{walk}(x, \text{grass}) \rightarrow \text{should_pay_fine}(x)$



$x = ?$

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To be truthful to the **purpose of the rule**, we have to make a distinction:

Ordinary walk

Therapeutic walk (gardeners, officers working, etc.)

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$\text{walk} = \{???\}$

Local regulation

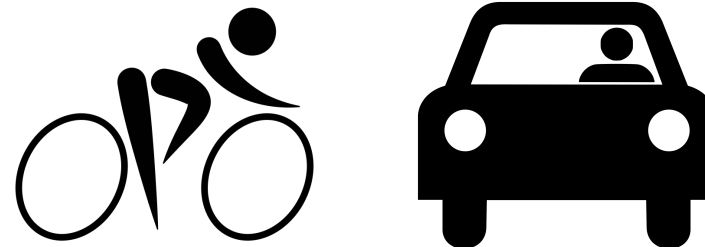
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Broader sense of “walk”

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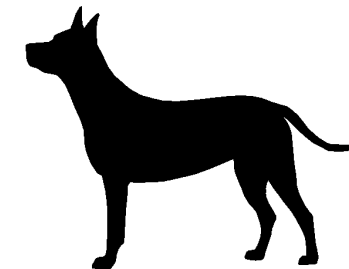
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Broader sense of “walk”



External rules of liability (Civil Code)

Local regulation

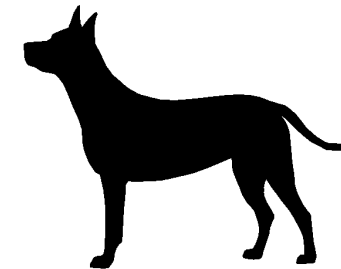
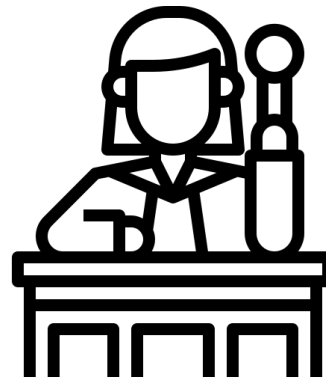
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$\text{walk} = \{\text{???\} - \text{dog}\}$



Disagreement about legal interpretations among lawyers

Asymmetry between the law and legal practice

Jogo do bicho

 8 languages ▼

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From Wikipedia, the free encyclopedia

Jogo do bicho (Portuguese pronunciation: [ˈʒogu du ˈbifu], "animal game") is an illegal gambling game in Brazil, prohibited by federal law since 1946, but nevertheless very popular throughout the country. It is a lottery-type drawing, operated on a regional basis using the daily state lottery draw, by criminals known as *bicheiros*, *banqueiros* ("bankers"), or *contraventores*. Despite its popularity, especially in [Rio de Janeiro](#), it is illegal in 25 of the 26 states of Brazil plus the [Federal District](#) and those involved may be prosecuted. [Paraíba](#) is the only state where the game is legal and regulated by the state, even though federal law prohibits gambling. Unlike most state-operated lotteries, in *jogo do bicho* any amount can be wagered.

Local regulation

Walk on the grass. Penalty: a fine.



$\forall x. \text{walk}(x, \text{grass}) \rightarrow \text{should_pay_fine}(x)$



should_pay_fine (x) ?



More important **principles** defeat the rule!

Theories of Legal Interpretation

What does the legal interpretation seek?

- **Intrinsic meaning** of the legal text?
- The **intentions of the authorities** that promulgated the legal text?
- The most **suitable interpretation** according to the **Constitution**?
- The spirit or the **purpose** of law?
- **Pluralism**: Different kinds of sources, methods, and modes of reasoning (textual analysis, purposive reasoning, consideration of historical sources, precedent-based reasoning, forward-looking assessment of consequences, and appeals to moral values such as fairness, democracy, and rule of law).
- **Pragmatism**: The basic idea is to resolve cases in the way that produces the best results, “the best decision having in mind present and future needs, and so does not regard the maintenance of consistency with past decisions as an end in itself, but only as a means for bringing about the best results in the present case” (Richard Posner).

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Legal Text ≠ Legal Norm



Dutch Civil Code

Book 1 Law of Persons and Family Law

Title 1.1 General provisions

[Expand All](#) | [Collapse All](#)

Book 1 Dutch Civil Code **Law of Persons** **and Family Law**

+ Title 1.1 General Provisions

(Articles 1-3)

+ Title 1.2 Right to a name

(Articles 4-9)

+ Title 1.3 Domicile

(Articles 10-15)

+ Title 1.4 Civil Status

(Articles 16 - 29f)

+ Title 1.5 Marriage

(Articles 30 - 80)

+ Title 1.5A Registered partnership

(Articles 80a-80g)

+ Title 1.6 Rights and duties of spouses

(Articles 81-92a)

+ Title 1.7 Marital community

Article 1:1 Personal freedom and legal capacity

- 1. All persons within the territory of the Netherlands shall be free and entitled to enjoy civil rights
- 2. No servitude of persons, of whatever nature or however described, is tolerated.

Article 1:2 Legal capacity of an unborn child

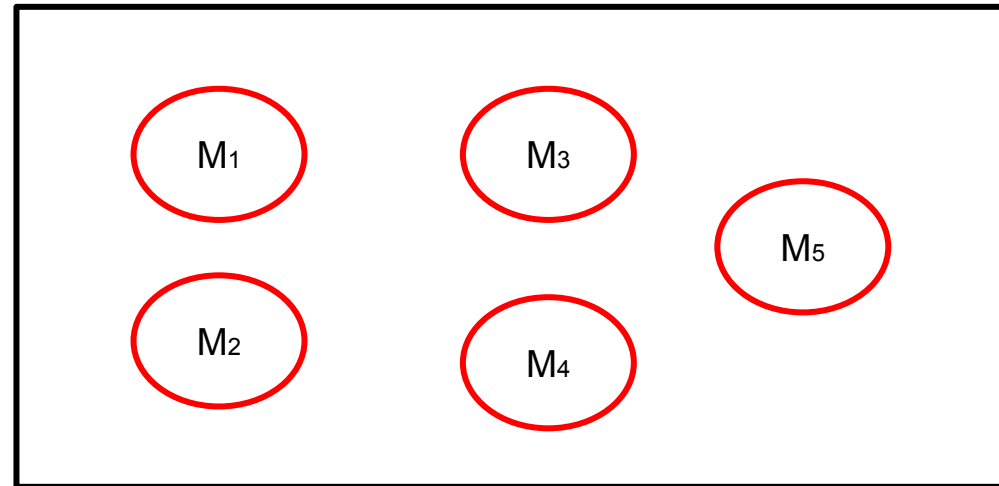
A child of which a woman is pregnant, is regarded to have been born already as often as its interests require so. If it is born lifeless, it is deemed to have never existed.

Article 1:3 Degree of consanguinity and affinity

- 1. The degree of consanguinity is determined by the number of births which have caused consanguinity. A recognition, a judicial determination of paternity or an adoption is to this end taken into account as a birth.
- 2. By marriage or by a registered partnership affinity arises between a spouse or registered partner and a blood relative of the other spouse or other registered partner in the same degree as consanguinity exists between the other spouse or the other registered partner and the latter's blood relative.
- 3. Affinity is not extinguished by the dissolution of the marriage.

Hans Kelsen on Legal Interpretation

Legal Knowledge = Frame of valid legal norms



Deciding for one meaning within the frame is an act of will, not cognition.

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Takeaways

- Legal knowledge engineering requires legal interpretation.
- Legal interpretation is partial and biased.
- Formalizing legal knowledge is not merely describing the law.
- **It is making the law by saying what the law should be.**

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