Situation versus Case and Two Kinds of Legal Subsumption

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Distinctions of situation and case

situation = type of behaviour, i.e. abstract
- implicit in reality, i.e. on the Is stage
- elements of Ought are inside

case = instance of behaviour, i.e. concrete
- expressed explicitly in acts

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### Indication: left turn.
### Status: right to priority over 1 and 2.
### Behaviour: drives second.

### Indications: 1 – left turn; 2 – straight.
### Status: • duty to give priority to 4.
  • duty to give priority to 3:
    – legal rule “Give priority to the right”.
### Behaviour: both drive third.

### Indication: blue-red beacon and sound signal.
### Status: priority right over automobiles 1, 2 and 3
  - legal rule “Beacon”.
### Behaviour: drives first.

### Indication: left turn.
### Status: right to priority over 1 and 2.
### Behaviour: drives second.
<table>
<thead>
<tr>
<th><strong>Situation</strong></th>
<th><strong>Case</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Generic, i.e. type</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>Ex-ante</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>Future</td>
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<tr>
<td><strong>Alternatives</strong></td>
<td>Possible</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Mental, non-textual, non-professional</td>
</tr>
<tr>
<td><strong>Placing on Is and Ought</strong></td>
<td>Is. But, the type of a situation appears on Ought</td>
</tr>
<tr>
<td><strong>Web example</strong></td>
<td><a href="http://www.help.gv.at">www.help.gv.at</a></td>
</tr>
<tr>
<td><strong>Customary vs. statutory law</strong></td>
<td>1) machine law, 2) customary law, 3) statutory law</td>
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<tr>
<td><strong>Legal instruments</strong></td>
<td>Roles, assumptions, rules governing the situation</td>
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<td><strong>Representation formalisms</strong></td>
<td>Deontic logic worlds</td>
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<tr>
<td><strong>Predicate logic</strong></td>
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<td><strong>Teleology</strong></td>
<td>Teleological relations</td>
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<td><strong>Bridging</strong></td>
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</tbody>
</table>
Situation and Case

Notation
Situation ex ante

Goal

Challenge

Situation
Situative elements

a, b, c, d…n
Situative elements

Alternative

\[ a \lor b \]
Entities of Sinnlandscape

(Sinnlandschaft)

Rules

Initial situation

Goal

Path

Legal texts
Case

ex post

Story-telling
Case

Story-telling

a, b, c, d...n

No italics (nicht kursiv).
Stand for concrete instances, not types
An instance

Story-telling

Factual term.
An instance
Subsumption

A, B, C legal terms

Factual term

Story-telling
Subsumption

A, B, C legal terms  NORM N(A→B)

Factual term

Story-telling

a == A

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Subsumption

Interpretation

Professional language

Factual term

Natural language

NORM N(A→B)
Subsumption 1: terminological

Subsumption 2: normative

Decision = Urteil, legal act = official version of the story

Natural language
Subsumption and syllogism

Norm( status = Obligatio, state_of_affairs = A(x), legal_consequence = B(x) )

1) Minor premise: A(a)
   In other words, A(a) = true or instance-of(A,a) = true

2) Major premise: \( \forall x \ A(x) \rightarrow O \ B(x) \)
   syllogism

3) Conclusion: O B(a) – decision, judgment
On categorical syllogism

<table>
<thead>
<tr>
<th>1) Minor premise</th>
<th>All S are M.</th>
<th>All Greeks are humans.</th>
<th>S is M.</th>
<th>Socrates is human.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Major premise</td>
<td>All M are P.</td>
<td>All humans are mortal.</td>
<td>All M are P.</td>
<td>All humans are mortal.</td>
</tr>
<tr>
<td>3) Conclusion</td>
<td>All S are P.</td>
<td>All Greeks are mortal.</td>
<td>S is P.</td>
<td>Socrates is mortal.</td>
</tr>
</tbody>
</table>

Situation and case: attention and subsumption

Situation
- important
  - Attention
    - is_like
      - Cursor
    - changes
      - Position
  - Spatialisation
    - implies
      - Scene
  - Script (informal)
    - assigns
      - Roles
    - implies
      - Rivalry

Case
- compared
  - Relevance
    - important
      - Naming
      - Verbalisation

Subsumption
- means
  - Text of the case
    - under
      - § Norm
      - Term
An example problem: legal punishment
(see Bench-Capon & Prakken, COMMA 2006)

- A judge must determine the best way to punish \((pu)\) a criminal found guilty
- He has 3 actions:
  1. imprisonment \((pr)\),
  2. fine \((fi)\)
  3. community service \((cs)\)

- Besides punishment \((pu)\) there are three more goals:
  - deterring the general public \((de)\)
  - rehabilitating the offender \((re)\)
  - protecting society from crime \((pt)\)

- So \(pu\) will be the most important goal, but the method of punishment chosen \((pr, fi, or cs)\) will depend on other goals
Causal knowledge

1. **Imprisonment** \((pr)\) **promotes** both **deterrence** \((de)\) \([R4]\) and **protection of society** \((pt)\) \([R5]\), but **demotes** **rehabilitation** \((re)\) \([R6]\) of the offender.

2. **Fine** \((fi)\) **promotes** **deterrence** \((de)\) \([R7]\) but **has no effect** on **rehabilitation** \((re)\) or the **protection of society** \((pt)\) since the offender would remain free.

3. **Community service** \((cs)\) **promotes** **rehabilitation** \((re)\) \([R9]\) of the offender, but **demotes** **deterrence** \((de)\) \([R8]\) since this punishment is not feared.

Causal rules (between actions and goals):

\[
\begin{align*}
R1: & \quad pr \Rightarrow pu & R4: & \quad pr \Rightarrow de & R7: & \quad fi \Rightarrow de & R8: & \quad cs \Rightarrow \neg de \\
R2: & \quad fi \Rightarrow pu & R5: & \quad pr \Rightarrow pt & R6: & \quad pr \Rightarrow \neg re & R9: & \quad cs \Rightarrow re
\end{align*}
\]

3 actions:

- **imprisonment** \((pr)\)
- **fine** \((fi)\)
- **community service** \((cs)\)

4 goals:

- **protection of society** \((pt)\)
- **deterrence** \((de)\)
- **punishment** \((pu)\)
- **rehabilitation** \((re)\)
Values of goals

- Judge’s goal base $G = \{ pu, de, pt, re \}$ (more exactly, $G = \{ D\ pu, D\ de, D\ pt, D\ re \}$, where $D$ is a modality; standing for desire)
  - A propositional modal logic is used
- All 4 goals cannot be achieved!
- Question: What is the best way to punish the offender?
- Answer: $cs$ (see further)
  - Reason: first, $cs > pr$, second, $cs > fi$

<table>
<thead>
<tr>
<th>Value</th>
<th>(promoted, demoted)</th>
<th>Score</th>
<th>${ pu, de, pt, re }$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$v(pr^+)$ =</td>
<td>${ pu, de, pt }, { re }$</td>
<td>3:1</td>
<td>(1, 1, 1, -1)</td>
</tr>
<tr>
<td>$v(fi^+)$ =</td>
<td>${ pu, de }, \emptyset$</td>
<td>2:0</td>
<td>(1, 1, 0, 0)</td>
</tr>
<tr>
<td>$v(cs^+)$ =</td>
<td>${ pu, re }, { de }$</td>
<td>2:1</td>
<td>(1, -1, 0, 1)</td>
</tr>
</tbody>
</table>
The attack graph

\[ \text{Value} \quad \text{(promoted, demoted)} \quad \text{Value} \quad \text{(promoted, demoted)} \]

\[ v(pr^+) = (\{pu, de, pt\}, \{re\}) \quad 3:1 \]
\[ v(cs^+) = (\{pu, re\}, \{de\}) \quad 2:1 \]

\[ re >^3 de + pt \]

More precisely, \( re - de >^3 de + pt - re \)

- Extralogical choice: \( re \) is next to \( pu \)
- Thus we (judge) make \( pu \) the second most important goal
- Other choices, e.g. pro fine \( fi^+ \) are possible

\[ cs^+ \quad D cs \quad \text{Defeat:} >^3 \quad pr^+ \quad D pr \]

\[ l_7 \quad l_8 \]

\[ cs \Rightarrow pu \quad D pu \]
[cs \Rightarrow re \quad D re \]

\[ pr \Rightarrow pu \quad D pu \]
[pr \Rightarrow de \quad D de \]
[pr \Rightarrow pt \quad D pt \]

\[ R3 \quad R9 \quad R1 \quad R4 \quad R5 \]
Conclusions

• Distinct methods of legal informatics focus on situations and cases
Thank you