Foundations for an Ontology of Rules and Norms (FORN)

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1. Introduction

This work in progress uses BFO, CCO, CPO, and the work of Cristina Bicchieri (2006; 2017).

1. Formal Ontology of Rules and Norms

Import cco:act, cco:directiveInformationContentEntity, cco:permits, cco:requires, and cco:prohibits.

‘*x* is a rule’ means:

1. *x* is a directive information content entity

and there is some *y* such that

1. *y* is an act
2. *x* either
   1. permits *y*
   2. requires *y*
   3. prohibits *y*

Import cpo:representationThatIsBelieved, cpo:isFusedWith, and cco:predicitiveInformationContentEntity.

‘*x* is an expectation’ means:

1. x is a representation that is believed

and there is some *y*, *z* such that

1. *y* is a predictive information content entity
2. *z* is an ***expectation value***
3. *x* concretizes *y*
4. *x* is fused with *z*

‘*x* is an empirical expectation’ means:

1. *x* is an expectation

and there is some *y* such that

1. *y* is a predictive information content entity
2. *y* m-describes ***what will happen***
3. *x* concretizes *y*

‘*x* is a normative expectation’ means:

1. *x* is an expectation

and there is some *y* such that

1. *y* is a predictive information content entity
2. *y* m-describes ***what should happen***
3. *x* concretizes *y*

Import cpo:indicator, cpo:actOfInvestigation, cco:person, cco:agentIn, and cco:groupOfPersons.

‘*x* is a reference network of *y*’ means:

1. *x* is a person
2. *y* is a group of persons

and there is some *z*, *w* such that

1. *z* is an indicator
2. *w* is an act of investigation
3. *y* = *z*
4. **x is member of y**
5. *x* agent in *w*
6. *y* participates in *w*