

Adaptive Logics: Survey

Diderik Batens (with much help from others)

Very incomplete in topics, authors and especially references. Please ask for an update later before relying on this for any purpose.

1 Corrective

- inconsistency-adaptive logics (adapt to *negation gluts*): \mathbf{CLuN}^r and \mathbf{CLuN}^m , [8] [5], [19] [51] [53] [65] [24] [54] [38]
- inconsistency-adaptive logics based on other paraconsistent logics, including \mathbf{CLuNs} (\mathbf{LP} , ...), \mathbf{ANA} , $\mathbf{D2}$, \mathbf{C}_n , ... [96] [97]
- gluts/gaps for other logical symbols [18]
- ambiguity adaptive logics [119] [120]
- handling vagueness [118]
- adaptive zero logic [21, 39]
- deontic conflicts, ... [104] [89] [106] [60] [62] [64] [60] [63] [90] [74] [63] [62] [111] [110]
- prioritized dial [109] [108] [112] [113] [114] [115]
- ...

2 Ampliative (+ ampliative and corrective)

- compatibility (characterization) [50] [92] [100]
- compatibility with inconsistent premises [85]
- prioritized adaptive logics [121] [130] [132]
- inductive generalization [29] [28] [49] [32]
- abduction and inference to the best explanation (including general hypotheses) [95] [134] [88] [86] [93] [77] [87] [72] [73] [61] [95] [40]
- analogies, metaphors [71] [69] [70]
- conflicting information [94]
- erotetic evocation and erotetic inference [81]

- more on questions [67] [68]
- tentatively eliminating abnormalities (general!)
- changing positions [131]
- obtaining preferences [98] [99]
- ...

3 Incorporation (possibly + extension)

(often under a translation)

- flat Rescher–Manor consequence relations (+ extensions) [25]
- prioritized Rescher–Manor consequence relations [130] [59]
- some ‘non-monotonic’ logics from AI [15] [122]
- partial structures and pragmatic truth [82]
- dynamic characterization of \mathbf{R}_{\rightarrow} [7] [26]
- rational closure [103]
- signed systems (Besnard et. al.) [55]
- adaptive vagueness [129]
- David Makinson’s toy examples
- ...

4 Metatheory

- strong reassurance [22]
- soundness, completeness and all basics [31]
- logics that are adaptive with respect to *rules* instead of abnormalities [45]
- transparency of adaptive logics [57]

5 Applications

- scientific discovery and creativity; scientific dynamics [13] [78] [84] [126]
- inconsistent constraints, [80]
- a contextual approach to meaning, problem solving and acceptance [4]
- inconsistency in worldviews [20]
- scientific explanation [52] [136]

- diagnosis [135] [56]
- changing positions in discussions [58]
- belief revision (predicative / inconsistent contexts) [66] [116]
- evocation of questions from inconsistent premises [79]
- inductive statistical explanation
- inductive conjectures of sorts
- argumentation [105] [107]
- Gricean maxims [133]
- causal relations (Pearl) [117]
- flexibility in the meaning of logical terms [17]
- hermeneutics [18] [14]
- use of inconsistency-adaptive logics for expert systems [6]
- conflicting information [94]
- grasp on a changing world [124] [125]
- pragmatic truth handled adaptively [82]
- ...

6 Adaptive theories

- Adaptive Peano Arithmetic [36]
- Adaptive Fregean Set Theory [44]

7 Reflections/Arguments

- reasoning from inconsistency [83]
- locate and partly eliminate inconsistencies [3]
- a plea for locating and eliminating inconsistencies [9, 11]
- explication Apostel's views on dialectics [10]
- non-hierarchical view on knowledge [12]
- clash between heuristic efficiency and realistic reconstruction [23]
- ALs are unifying frame for handling inconsistencies [34]
- ALs as a required tool for relative rationality [35]
- adaptive contributions to logics of formal inconsistency citeD:AcLFI

- inconsistencies in scientific theories [41] [37]
- the role of ambiguity in knowledge systems [123]
- mathematical complexity of ALs [75] [48] [127] [76]
- in defence of paraconsistency [101] [102]

8 Related / Required

- basic and richer paraconsistent logics [1] [46]
- building many-valued semantic systems from 2-valued ones [2]
- block proofs and semantics: explicating logical information and much more [16]
- prospective dynamic proofs and goal directed proofs [27] [93] [91] [33] [91]
- embedding paralogics in **CL**: [47] [128]
- automatically remove a theory from a knowledge system [42]
- pitfalls of dialetheism [43]

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