according to which any property forms a set, is trivial or inconsistent, even without negative contradiction.

Dichotomic contradiction is based on exhaustivity and exclusivity, and can be represented in a symbolic way with a black and white flag. It is related with Pythagoras table of opposites (probably inspired by Zoroastrianism), and Taoism (which is more interactive). The theory of the square of opposition is based on it, using the dichotomy between truth and falsity to define contradictory propositions without using the connective of negation: two propositions are contradictory if and only if they can neither be true together, nor false together. The dichotomy true and falsity is used not to define only the contradictory notion of opposition, but also two other notions of opposition: contrariety and subcontrariety. These three notions of opposition can be used to define three negations: classical, paracomplete and paraconsistent negation, serving as a basis of a general theory of negation.

References

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J.-Y.Beziau, "Round squares are no contradictions", in New Directions in Paraconsistent Logic, Springer, New Delhi, 2015, pp.39-55.
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12:30 – 13:00

Vladimir Lobovikov (Institute of Philosophy and Law of the Ural Branch of Academy of Sciences) - Approximating to Universal Logic by Combining Different Kinds of Modalities in One Formal Axiomatic Theory Φ.

Topic: A.2 Philosophical Logic

Abstract: The paper presents moving towards the universal logic (Beziau 2012) by combining qualitatively different kinds of modalities in one consistent formal axiomatic theory. The attempts coherently to combine plenty of various kinds of modal logics have resulted in a consistent multimodal formal philosophy system Φ made up by adding some nontrivial schemes of proper (epistemology-and- axiology) axioms of Φ to the schemes of axioms and inference-rules of classical propositional logic. By definition, Φ has exactly eleven proper axiom schemes. The schemes AX3 – AX5 and AX7 – AX11 of Φ are identical to the corresponding schemes AX3 – AX5 and AX7 – AX11 of the formal theory "Sigma + C" (Lobovikov 2021). But the schemes AX1, AX2, AX6 of the formal theory "Sigma + C" are substantially universalized by the corresponding schemes AX1, AX2, AX6 of the here-suggested formal theory Φ. The set of qualitatively different modalities somehow combined by the logically formalized multimodal axiomatic epistemology-and-axiology system Φ is the following {M, L, K, A, E, S, T, F, P, D, C, Y, G, W, O, B, U, J}. Symbols M and L stand for the modalities "possible" and "necessary", respectively. Symbols K, A, E, S, T, F, P, D, respectively, stand for modalities "agent Knows that…", "agent A-priori knows that…", "agent Empirically knows that…", "under some conditions in some space-and-time a person (immediately or by means of some tools) has Sensual verification that…", "it is True that…", "person has Faith that…", "it is Provable (in a consistent theory) that…", "there is an algorithm (a machine could be constructed) for Deciding that…". Symbols C, Y, G, W, O, B, U, J, respectively, stand for modalities "it is Consistent that…", "it is Complete that…", "it is Good that…", "it is Wicked that…", "it is Obligatory that …", "it is Beautiful that …", "it is Useful that …", "it is Joyful, pleasant that…". Precise definitions of "alphabet of object-language of Φ", "term of Φ", and "formula of Φ" are provided. A definition of semantics of object-language of Φ is given. The theory Φ is a result

of significant changes of the theories “Sigma” and “Sigma + C” (Lobovikov 2021). A proof of Φ's consistency (to be submitted while the presentation) is realized by inventing a model of/for Φ, i.e. by precise defining such an interpretation in which all the axioms are true statements and the rules of inference conserve truthfulness.

References
Beziau, J.-Y. (Ed.). (2012). Universal Logic: An Anthology. Springer Nature.
Lobovikov, V.O. (2021). A Logically Formalized Axiomatic Epistemology System Sigma + C and Philosophical Grounding Mathematics as a Self-Sufficing System. Mathematics, 9, 1859. https://doi.org/10.3390/math9161859.

ROOM 10

11:00 – 11:30

Sara Blanco (Eberhard Karls Universität Tübingen, Tübingen) - The Normative Need for Trust in AI

Topic: C.8 Philosophy of the Applied Sciences and Technology

Abstract: Trust is often considered the glue of a healthy society. We need others and others need us. Trusting puts the one who trusts in a vulnerable place. Because of this, trust is generally placed only in those to whom we believe we can delegate something. Both the general public and a part of academia (HLEG 2019) often talk about trust and distrust in artificial intelligence (AI). However, it is unclear whether the concept of trust can suitably be extended to non-human entities. I argue that trust relationships imply moral responsibility and it is precisely this implication that makes trust a normative goal for human-AI relationships.
AI systems are not technical artifacts like any other. AI is a novel technology able to achieve results without being explicitly programmed on how to reach such results. Instead, AI ‘learns’ from big volumes of data and comes out with its own paths towards outcomes. Thus, how we use and relate to AI differs from previous technology. At the moment, AI models are used in a variety of domains. Due to its potential to affect people’s lives, AI is widely considered a socio-technical tool. This means that its successful implementation concerns the interaction of social and technical factors. Then, conceptualizing the kind of relationship that we, as a society, aim to have with AI is crucial for the successful implementation of the latter.

It is often argued that technology cannot be trusted but only relied on (Ryan 2020). This view puts the focus on technical success to determine whether a system oughts to be implemented; that is, the main criterion would be how accurate the system's predictions are. However, in domains such as medical diagnosis, a successful outcome is not just a technical solution to a technical problem. Moral responsibility should be taken into account, being an important fact to consider in the use and implementation of AI. Because of this, I claim that aiming for reliance overlooks the role of AI in society, failing to capture the relationship that humans ought to have with AI.

I understand trust as a relational concept that implies moral responsibility. Trust refers to relationships in which a trustor willingly makes themselves vulnerable towards a trustee and accepts the risk of being betrayed. I argue that willingly making oneself vulnerable towards someone implies placing moral responsibility on that someone. From the trustee’s side, committing to not abuse others’ vulnerability implies assuming moral responsibility. Because of the contexts in which AI can be