W6: Topics on Philosophy of Logic
August 2-4, 2017 - SADAF (Bulnes 642, Buenos Aires)

Schedule

Day 1 - August 2:
14:00-15:00: Rohan French "Non-Reflexive Logics, Metainferences, and a Hierarchy"
Short coffee break
15:15-16:15: Roberto Ciuni "Normality Operators and Classical Recapture in Many-valued Logic"

Coffee break

16:45-17:45: Damián Szmuc: "An inferential look into weak and strong connexivity"
Short coffee break
18:00-19: 00: Thomas Ferguson "Nonsense and Hypernonsense in Truthmaker Semantics*

Day 2 - August 3:
14:00-15:00: Eduardo Barrio: "What is a paraconsistent Logic?"
Short coffee break
15:15-16:15: Teresa Kouri Kissel: "Logical Pluralism from a Pragmatic Perspective"
Short coffee break
16:30-17:30: Jonas Arenhart: "The vernacular as a source for dialetheism"

Coffee break

18:00-19:00: Lucas Rosenblatt: "Invalidities"
Short coffee break
19:15-20:15: Andreas Fjellstad: "Internalizing substructural validity"

Day 3 - August 4:
14:00-15:00: Nicolas Clerbout "Interaction and conditionality. The road to a dialogical approach to conditionals"
Short coffee break
15:15-16:15: Bruno DaRe "Structural weakening and truth-theoretical paradoxes"

Coffee break

16:45-17:45: Federico Pailos: "A Substructural Fully Classical Lógic"
Short coffee break
18:00-19:00: Dave Ripley: "Classical recapture via conflation"

Organizing committee: Eduardo Barrio, Natalia Buacar, Federico Pailos, Diego Tajer.
Sponsorship: Conicet - RC 261/17

W6: Topics on Philosophy of Logic

ABSTRACTS

Rohan French (University of Groningen) "Non-Reflexive Logics, Metainferences, and a Hierarchy"

Abstract: According to the non-reflexive solution to the paradoxes presented in French (2016) there are no valid inferences. There are, however, a wide range of valid metainferences, and on the view argued for there these metainferences make explicit the premises about what statements we ought to accept or reject we are suppressing when we judge certain inferences to be valid. So, for example, when we judge the inference from p and q to $p\land q$ to be a valid one, what we are really judging is that this inference is valid conditional on p and q being statements of the kind which we ought to accept or reject. This use of metainferences leads to a revenge worry for this kind of non-reflexive approach to the paradoxes, in the form of a metainferential version of the validity Curry. The goal of the present paper is to explore a particular solution to this problem by appealing to a stratified view of metainferential validity.

Roberto Ciuni (University of Padova) "Normality Operators and Classical Recapture in Many-valued Logic"

Abstract: The philosophical applications of many-valued logics usually come with a story of `normality': there are a number of `abnormal phenomena' for which we need many-valued reasoning—logical paradoxes, partial information, vagueness, among others—but as long as no abnormal phenomena is at stake, classical logic is perfectly in order as it is. This view motivates the so-called `problem of classical recapture': how can we secure inference of classical conclusions, under the assumption that we are facing no abnormality? The problem has been especially raised with respect to the Logic of Paradox LP by Priest and the Strong Kleene Logic K3 by Kleene, but, in principle, it may apply to any many-valued formalism. In this presentation, I approach the problem of classical recapture by applying a normality operator, which is a generalization of the consistency operators in the style of DaCosta, to any many-valued logic that is weaker than Classical Logic CL. In particular, such operators enable us to state that a sentence has a classical value. Also, I compare the approach by normality operators with other existing approaches, namely `classical collapse' by Beall and `minimal inconsistence' by Priest. The presentation comes in three parts. In the first part, I introduce many-valued logics based on standard propositional language, discuss the problem of classical recapture, and propose formal requirements on possible solutions to the problem (relative to any many-valued logic). After that, I define the normality operator and, for every many-valued logic S (weaker than CL), I define the extension S^norm with the normality operator. I show how S^norm recaptures CL, and how this guarantees that S^n is a recapturing logic for S. Finally, I detail how classical recapture via normality works for two prominent many-valued logics, namely LP and K3. In the second part, I introduce `classical collapse' by Beall and `minimal inconsistence' by Priest. The first upgrades to multiple-conclusion reasoning in order to infer different possible conclusions (the classical one, or a number of statements stating that we are not in a classical situation). The second is a non-monotonic consequence relation that guarantees classical reasoning, under the proviso that the premise-set has a classical model. I show that, at suitable conditions, the two approaches are equivalent to the approach via the normality operator, in the sense that they all guarantee classical recapture. In the third part, I compare the three approaches with respect to their adequacy in

describing some scenarios involving empirical information. This is relevant, since K3 and LP have been recently applied to empirical phenomena such as vagueness. From a general and abstract standpoint, I show that LP^norm can express the fact that we get evidence of consistency, while multiple-conclusion LP and minimally inconsistent LP cannot; similarly, I show that K3^norm can express the fact that lack any evidence on a given topic, while multiple-conclusion K3 cannot. Going from general to concrete, I briefly introduced paraconsistent and paracomplete theories of vagueness based on LP and K3, respectively, and show that they cannot express information about non-borderline (or borderline) cases in vagueness that we could like to express.

Damian Szmuc (IIF-Conicet - University of Buenos Aires) "An inferential look at weak and strong connexivity"

Abstract: Connexive logics are systems that validate the so-called Aristotle and Boethius theses, i.e. the formulae ¬(A ⊃ ¬A), and (A ⊃ B) ⊃ ¬(A ⊃ ¬B). Strong connexive logics are systems that not only validate the former, but are also such that A ⊃¬A is unsatisfiable, and that A ⊃ B and A ⊃ ¬B are jointly unsatisfiable. Whence, connexive logics that are not strongly so are called weakly connexive. In this paper, we consider the prospect of extending these ideas to apply to inferences, meta-inferences, and more. By considering different generalizations of Aristotle and Boethius theses, we note that certain versions of weak and strong connexivity: (i) collapse at some inferential levels, and (ii) are too demanding, from the point of view of most notions of validity.

Thomas Ferguson (Saul Kripke Center, CUNY - Cycorp) "Nonsense and Hypernonsense in Truthmaker Semantics*

Abstract: By reviewing Peter Loptson's possible-worlds analysis of the notion of meaninglessness, a distinction can be made between nonsense--in which a sentence has no truthmaker or falsemaker at a possible world--and hypernonsense--in which a sentence has no truthmaker or falsemaker in logical space. I wish to argue that while the former category is both reasonable and useful, the notion that a sentence may be hypernonsensical should be rejected. The importance of the distinction is apparent in Fabrice Correia's recent suggestion that the notion of factual equivalence is captured by a consequence relation corresponding to a weakened version of Kit Fine's truthmaker semantics for analytic containment. I wish to suggest that Correia's counterexamples to distributivity implicitly--and unfortunately--rest on a category of hypernonsense. Despite this, I will demonstrate how truthmaker semantics for Correia's preferred system can be given without weakening Fine's framework, thereby relieving Correia's notion of factual equivalence from its commitment to hypernonsense.

Eduardo Barrio (IIF-Conicet - University of Buenos Aires) "What is a paraconsistent Logic?"

Abstract: Paraconsistent logics are logical systems that reject the classical conception, usually dubbed Explosion, that a contradiction implies everything. However, the received view about paraconsistency focuses only the inferential version of Explosion, which is concerned with formulae, thereby overlooking other possible accounts. In this paper, we propose to focus, additionally, on a meta-inferential version of Explosion, i.e. which is concerned with inferences or sequents. In doing so, we will offer a new characterization of paraconsistency by means of which a logic is paraconsistent if it invalidates either the inferential or the meta-inferential notion of Explosion. We show the non-triviality of this criterion by discussing a number of logics. On the one hand, logics which validate both versions of Explosion, such as classical logic and Asenjo-Priest's 3-valued logic LP. On the other hand, logics which validate one version of Explosion but not the other, such as the substructural logics TS and ST, introduced by Malinowski and Cobreros, Egr´e, Ripley and van Rooij, which are obtained via Malinowski's and Frankowski's q- and p-matrices, respectively.

Teresa Kouri Kissel (Old Dominion University) "Logical Pluralism from a Pragmatic Perspective"

Abstract: There are several options for logical pluralism on the table. I will present a view of logical pluralism which can account for the fact that there are some non-mathematical contexts in which distinct logics seem to have logical terms which mean the same thing, and some contexts in which distinct logics have logical terms which are not pairwise synonymous. None of the logical pluralisms on the table can easily readily accommodate this. I will discuss the factor which a ects the meanings of the logical connectives, and then sketch an account of logical connective meanings which works in light of this factor. Ultimately, I will suggest that we cannot ask about the meanings of the logical connectives outside of a context, as doing so is asking an external question, in the Carnapian sense, and is illegitimate.

Jonas Arenhart (UFSC - Brazil) "The vernacular as a source for dialetheism"

Abstract: Dialetheism is the view that some contradictions are true. One of the main arguments for dialetheism originates from the allegation that natural languages, due their expressive resources, are able to derive true contradictions; one such prominent case would be the Liar paradox. So, it is claimed, natural language imposes dialetheism on us. In this paper we resist this argument from the vernacular to dialetheism. We argue that even if we can derive a contradiction using the resources of natural language, there is no obvious reason to believe that some contradictions are true. In fact, we argue that there are reasons (acceptable to dialetheists) to hold that contradictions cannot be true. To leave no room for worries, we also argue that one can resist the ensuing dialetheist argument for paraconsistency. According to the argument, facing contradictions without triviality in natural languages, a paraconsistent logic is mandatory. We argue that a classical consequence relation may be kept, even in the face of a contradiction. As a result, even in the face of contradictions in natural language, the classical picture according to which i) contradictions are false and ii) the consequence relation which is explosive, may be maintained.

Lucas Rosenblatt (IIF-Conicet - University of Buenos Aires) "Invalidities"

Abstract: There is a well-entrenched tradition in logic that takes the notion of validity to be crucial for our understanding of how language works and how we reason with it. In fact, logical theories are sometimes presented as sets of valid arguments. But these theories also inform us, albeit indirectly, about invalid arguments. In this talk I will argue that, under a certain conception of what it is for an argument to be valid, there is no reason to privilege a treatment of validities over a treatment of invalidities. Moreover, I will suggest that, in certain contexts, there are direct reasons to think that the notion of invalidity should receive a primitive and independent treatment from that of validity.

Andreas Fjellstad (University of Bergen - Norway) "Internalizing substructural validity"

Abstract: Problems with internalizing validity in substructural logics are rehearsed before I develop a new proof-theoretic approach inspired by transfinite revision sequences. First, I present a labelled sequent calculus for a validity-predicate imitating such sequences, and show how we can employ this calculus to internalize classical validity. I then extend the project with the help of a three-sided sequent calculus for labelled formulas to also internalize validity for a non-reflexive and a non-transitive theory

of truth. Finally, I briefly discuss the extent this project departs from the original project about expressing naive validity.

Nicolas Clerbout (CDHACS / Instituto de Filosofía – Universidad de Valparaíso) "Interaction and conditionality. The road to a dialogical approach to conditionals"

Abstract: The basic pattern of conditional expressions is the form *If p, (then) q*. This general formulation, as it is well known, actually hides the huge variety of usage that conditional reasoning can fulfill. A brief look at the literature shows the richness of the field and the difficulty of proposing a classification: material vs. strict implication, indicative vs. subjunctive conditionals, counterfactuals, conditional questions, commands, instructions or assertions, etc. It is no surprise that conditional reasoning has been given a lot of attention in philosophy. Indeed working through the central problems about conditionals leads to questions and developments in metaphysics, epistemic logic, probability and logic, pragmatics of conversation, among many others.

The main topic of this talk is a discussion on the use of some kinds of conditional expressions in argumentative debates. I will argue that for these, a traditional truth or model-theoretical approach quickly becomes of quite limited help, and that an epistemic approach is more promising. Specifically, I will present some basics of the dialogical approach – a kind of game-theoretical framework for logic – and argue from some examples that these basics outline promising views for the study of conditionality.

The dialogical approach to logic is born at the end of the fifties from the work of P. Lorenzen. Inspired by Wittgenstein's *meaning as use* approach and mathematical game theory, the framework provides an alternative to the more widespread model-theoretical and proof-theoretical approaches.
The fundamental idea is that expressions get their meaning through their use within an argumentative debate between two players: a Proponent and an Opponent. One of the fundamental features of the framework is that the argumentative / interactive analysis is made in terms of speech acts, and more specifically, in the case of standard dialogical games, in terms of assertions and requests. Starting from the simpler case of material implication, I will present how the approach deals with some known cases (strict implication, relevant implication) and outlines for the study of various kinds of conditional speech acts.

Bruno DaRe (IIF-Conicet - University of Buenos Aires)

Abstract: Substructural approaches to paradoxes have focused primarily on rejecting transitivity or contraction. More recently, it has even been proposed to reject reflexivity. So far, however, structural weakening has been ignored. In this talk, I show how to construct a naive theory of truth, over classical logic without structural weakening.

Federico Pailos (IIF-Conicet - University of Buenos Aires) "A Substructural Fully Classical Lógic"

Abstract: We will present a three-valued consequence relation for metainferences, called TSST. TSST will validates every classically valid inference, as ST does. But, while ST does not validate every classically valid metainference, TSST recover all of them. A metainference is valid in TSST iff for every valuation v, if v satisfies every premise according to TS, then v satisfies the conclusion according to ST. Nevertheless, TSST does not validate every classically valid meta-metainference. In

particular, Meta-Cut became invalid. But we will define a consequence relation for meta-metainferences that works as TSST for metainferences, but also recovers every classically valid meta-metainference. Moreover, we will present a hierarchy of consequence relations for metainferences of level n. Each member of the hierarchy recovers every classically valid metainference of level n or less. Moreover, each member of the hierarchy can be safely expanded with a transparent truth predicate. Finally, we will present a logic based on the hierarchy of that recovers every classically valid metainference. It can also be safely expanded with a transparent truth predicate.

Dave Ripley (University of Connecticut) "Classical recapture via conflation"

Abstract: Many nonclassical approaches to various domains are concerned to "recapture" classical logic. Classical recapture projects come in many forms, but the main idea is to to claim classical logic's many successes as successes of the preferred nonclassical approach by finding classical logic itself reflected in some way in the nonclassical approach. In a series of papers, Francesco Paoli has pursued a distinctive approach to classical recapture, working within a certain formulation of classical linear logic. According to Paoli, classical logic is not so much mistaken as it is ambiguous. (The ambiguity in question is between additive and multiplicative versions of the connectives, as they are usually distinguished in linear logic.) The purpose of this paper is to explore the formal facts surrounding this claim, to suggest that not all is well for Paoli's preferred formulation of the recapture, and to suggest a variant approach to recapture, based on the notion of conflation. This variant, I will argue, is the best way to make sense of something like Paoli's approach. However, it does not succeed in recapturing classical logic within linear logic, but instead only within affine logic (a variant of linear logic that allows weakening). This leaves Paoli with a dilemma: stick with linear logic, and so recapture something that is not classical; or else insist on recapturing classical logic, but leave linear logic behind.