OVERVIEW  Natural languages display a surprising diversity of expression of elementary logical operations. The study of this variation is emerging as an important topic of cross-linguistic semantics. While in modern English, words for expression of conjunction (‘and’), universal quantification (‘all’), additivity (‘also’), or negative polarity and free-choice inferences (‘any’) clearly represent distinct morpho-semantic categories, all ancient IE languages allow for all such meanings to be expressed using a single particle.

This workshop investigates the logical vocabulary across ancient Indo-European (IE) languages with the aim of integrating traditional IE philological linguistics with the modern model-theoretic semantics and pragmatics with the aid of theoretical tools from morpho-syntax.

By examining the particles and morphemes with logically variable and context-dependent meanings, this project makes the case for the need for formal diachronic semantics and pragmatics, a novel interdisciplinary means of investigating historical variation and change of word-anchored functional meanings and inferences.

CORE QUESTIONS AND OBJECTIVES  The workshop will explore and help understand the diachronic implicational relations in the grammatical system of logical expressions (of coordination, quantification and interrogation, int. al.) encoded with identical morphemes.

(a) SYNCHRONIC OBJECTIVE  We aim to shed light on the synchronic account of early grammars of scalarity, polarity, quantification and coordination. The primary empirical focus is on, but not in any way restricted to, Indo-European.

(b) DIACHRONIC OBJECTIVE  The workshop will explore a diachronic syntactic-semantic model of IE grammar and morphosemantic change, with special reference to logical meanings.

(c) TYPOLOGICAL OBJECTIVE  Account for typological patterns of quantifier particles and integrating such an account with the diachronic pathways of change.

BACKGROUND  In the last decades the field has made unprecedented multidisciplinary progresses field-internally, which this project aims to bring closer in order to enable and promote a more interdisciplinary, integrative and multifaceted understanding of the history of logical vocabulary. On the one hand, in formal linguistics, explicit and formal models of natural language syntactic structures, as well as explicit logical models of the meaning of those structures have been developed. On the other hand, in historical linguistics, diachronic syntax has been, after a long tradition of scholarship, explicitly modelled and the field has seen a fast pace of scholarly advances, resulting in precise accounts of the nature of diachronic change as well as synchronic descriptions of specific historical language states.

IE scholarship has recognised the semantic and syntactic multi-functionality of certain particles that express logical meanings, such as conjunction, quantification, negative polarity, additivity, and free-choice inferences. The phenomenon in question has in fact been informally recognised 107 years ago in the seminal philological work by Meillet (1908) who identified non-conjunctive meanings of prima facie conjunctive particles. Gonda (1954) was among the few philologists who resumed the discussion and formulated the problem more precisely: “[t]he question may, to begin with, be posed whether we are right in translating Ś[anskrit] ca, Gr[eeek] τε, Lat[in] que, etc., simply by our modern ‘and’ in regarding the prehistoric *kʷe as a conjunction in the traditional sense of the term. It is a matter of general knowledge that many words which at a later period acted as conjunctions originally, or at the same time, had other functions.” (Gonda 1954: 182) While there has always existed a rather natural desideratum for a unified treatment of such particles, perhaps most notably signalled by the monumental and unsurpassed work exceeding a thousand pages on the Greek conjunctive particle τε by Ruijgh, the methodological

nature of traditional IE linguistics has been unable to unify definitively the sense of these logical morphemes. It is therefore understandable that, to date, the research on this topic has stood still with respect to solving this problem and formulating a semantic common denominator that would explain the range of meanings these particles express.

The prospect is seemingly made additionally more complex, and captivating, by the fact that the same multi-functionality of conjunctive particles carrying these exact meanings can be found beyond IE: in Japanese, Korean, Hungarian and Dravidian, among many others. In fact, as Gil (2011) reports, 67% of world’s languages possess such multi-functional particles. With this intuition, Gonda (1954: 182) observed that “the relation between the copulative [coordinate] τε (τεά) and the ‘epic’ [non-coordinate] τε (τεβ) has never been correctly formulated,” which is impossible without the correct formulation of the syntactic-semantic relation between coordinate and non-coordinate meanings. This project aims to formulate exactly that, not only with theoretical precision but also empirical width and rigour, importing typological facts into account. Understanding the nature of this common cross-linguistic pattern in the form of logical vocabulary therefore also represents an enquiry into the deep understanding of the nature of logical atoms employed by IE, specifically, and all natural languages, more generally.

**THE INTERDISCIPLINARY METHODOLOGY AND POTENTIAL**  The workshop will provide a platform for methodological merging of the various approaches to understanding the synchronic and diachronic status of function morphemes encoding quantificational and coordination meanings (in IE).

One desideratum of the conference is the pursuit and scrutiny of research programmes which assume that rather than constituting separate or even homophonous categories of conjunction and quantification, the meanings underlying the conjunctive morphemes represent a truly coherent subcategories within the general particle system, despite their prima facie independence.

**OBJECTIVES**  The overall objective of the proposed session lies in demarcating the range of meanings (such as focus, negative polarity, free choice, coordination, etc.) underlying these particles and elucidating on their logical connection which may, or may not, restrict the space of possible change.

Diachronically, the sessions falls within the area of second-order grammaticalisation as the empirical focus will be given to inherently functional meanings of language, i.e. ‘and’, ‘all’, ‘any’, etc., which constitute those meanings characterised by high types and permutation invariance. What remains thoroughly under-explored is the directionality question of such post-functional change.

With the interdisciplinary method of historical and formal analysis, the status of permutation invariance and high-type signature of these markers will be accounted for. This will have important theoretical ramifications for our understanding of the diachronic sources of logical expressions (including, the ‘polarity- scalarity system’) across a wide array of modern languages. One possible approach would be to integrate diachronically the idea that the source for semantic and pragmatic inferences is located in the architecture of grammar and that all variation in inferential patterns must therefore be traced back to the grammatical system of a given language. On a more general level, the workshop will also address the question of syntactic encoding of logical terms and expressions, which has recently also been the subject of a rigorous formal and cross-modular investigation (Chierchia 2013). The proposed themed session aims to integrate a recently substantiated formal model of syntax/semantics/pragmatics with traditional

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5 The following is partial list of recent works:


Indo-European (IE) philology of particles (Dunkel 2014) so as to break new ground in historical linguistics.

**CONTRIBUTING PARTICIPANTS** The workshop hopes to bring together experts who have made recent contribution in the area of quantifier particle grammar and/or diachronic compositional syntax/semantics. With such a conglomeration of eclectic research, the workshop will be able to break new ground in formal diachronic semantics generally, and our understanding of historical changes in the logical vocabulary.