Introduction

This bibliography is concerned with recent literature on the nature of events and the place they occupy in our conceptual scheme. The subject has received extensive consideration in the philosophical debate over the last few decades, with ramifications reaching far into the domains of allied disciplines such as linguistics and the cognitive sciences. At the same time, the literature is so wide and widely scattered that it has become very difficult to keep track of every line of development. Our hope is that this work will prove useful to overcome that difficulty.

Content and scope of the bibliography

We have chosen Hans Reichenbach's 1947 pioneering contribution on the logical form of action sentences as a starting point (the other acknowledged milestone being the publication of an influential paper by Donald Davidson exactly 20 years later), and we headed for a review of the extensive literature that followed in the fifty years thereafter. For convenient reference, we have also included a short Appendix with some early works referred to in much of the literature.

The focus is represented by philosophical literature devoted explicitly to such questions as the following:

— Are events a kind of entity?
— If so, what are they? (For instance, are events particulars or universals, concrete or abstract?)
— How do they differ from other kinds of entity? (For instance, how do they differ from material objects, if at all? How do they differ from states of affairs, if at all?)
— What are their identity and individuation criteria?

— Are there any substantial differences between various kinds of event? (For instance, are actions a kind of event? What is the difference between mental and physical events, if any? Are facts, states, processes species of one single event category?)
— What position do events occupy in the causal network? How do they fit in the spatio-temporal framework?
— How does reference to or quantification over events affect the semantics of ordinary language? How does it feature in the construction of formal semantic models?
— How do semantic issues interact with metaphysical ones?

In addition, we have also included relevant entries from various collateral fields: the philosophy of action; the philosophy of mind; the philosophy of space, time, and causation; the logic of tense and time, and the treatment of tense and aspect in linguistics; situation theory; knowledge representation; planning and temporal reasoning in artificial intelligence. All of these are areas of research in which the notion of an event arguably has played and still plays a prominent role (whether positively, i.e., as something to be relied on for a proper treatment of the core issues, or negatively, as a concept to be eliminated from unadulterated philosophical or otherwise technical vocabulary). However, it would have hardly been possible to include every piece of work dealing in some way or another with the notion of an event. In regard to those collateral areas, the present bibliography is therefore only meant to give some indication of the main trends and contributions, but aims at no completeness. (In some cases, for instance, we have included anthologies and collective works, without itemising each relevant essay.) This limitation is even more drastic with respect to other allied areas such as psychology, decision and probability theory, or the philosophy of history: here too events play an important role, but it would have been impossible to give a reasonable coverage of this role without stretching the relevant parameters beyond bearable limits. Even so, the list includes some 1850 entries by over 900 authors, and gives a measure of the importance that the topic has registered in the literature.

The philosophical co-ordinates

The entries are listed in alphabetical/chronological order by author. This means the bibliography is offered as raw material: there is no topical subcategorization. Such a categorization might have been effective in serving the purpose

of a guided tour through the literature, but it would have also incorporated a conspicuous amount of arbitrariness, which could have only been mitigated (and then only partially) at the cost of overwhelming repetitions and cross-indexing. We have preferred keeping this to a minimum. Our annotations along with the comprehensive apparatus of subject and name indexes included in the last part of the volume should help provide quick access to the topics of interest.

Some major guidelines, however, have been followed in the compilation. They correspond to four main co-ordinates within which it seems possible to stake out—at least in part—the multiform spectrum of philosophical positions contemplated in the literature:

1. Realists vs. non-realists. A first obvious co-ordinate, corresponding to a major line of research, is the degree of reality that different theories ascribe to events. On one side is the realist position, viewing events as part of our basic ontological inventory—objects of reference and quantification. This is the view advocated by Reichenbach and Davidson and accepted by the majority of authors (though sometimes for very different reasons and within the framework of radically different metaphysical conceptions). On the other side we find the non-realist's position: it denies existence to events in favor of ontological parsimony, arguing that every seemingly event-committing sentence can in principle be paraphrased in terms of event-free ones. This view has been defended, for instance, by T. Horgan, R. Trenholme, and B. Aune in the 70's, and underlies much of the work in the field of adverbial modification pioneered by R. Clark and R. Montague. In between these two opposite positions are those authors who avoid the language of reduction, but also deny that events and objects are co-ordinate and equally basic. We find here philosophers in the tradition of P. F. Strawson, but also authors such as J. Kim, L. B. Lombard, and J. Bennett, who maintain some form of dependency or supervenience of events over material substances or entities of other sorts. We find also philosophers who defend the primacy of events over objects: this is a view that is rooted in the early work of B. Russell and A. N. Whitehead, and which has been explored, e.g., in some works of R. M. Martin.

2. Particularists vs. recurrentists; concretists vs. abstractists. A second way of scanning the variety of metaphysical theories of events is with reference to the distinction between the conception of events as spatio-temporal particulars versus their conception as recurrable entities, entities which can occur more than

once. The latter view is exemplified by R. Chisholm's early writings, according to which events are fact-like entities—a species of states of affairs, differing from propositions only in their being time-bound. The opposite, particularist view is most explicitly exemplified by Davidson's own seminal writings as well as by such authors as M. Brand, P. van Inwagen, or D. H. Mellor. A better picture, however, is obtained by further distinguishing a continuum of particularist positions based on the degree of "concreteness" that they assign to events, i.e., the degree to which they view events as soaking up the content of the spatio-temporal region at which they occur. At one extreme, authors like W. V. O. Quine push the concretist conception as far as possible by denying any categorial distinction among spatio-temporal entities and eventually assimilating events to material objects. The other extreme is not explicitly represented by any author, but corresponds ideally to the view that there is no lower bound on the abstractness (lack of content) of events. In between these two extreme positions we have a variety of intermediate conceptions, corresponding to the majority of official positions: each of them sees events as spatio-temporal entities, but with various constraints on the lower limit on how concrete an event can be. For instance, Davidsonian events are all rather thick, though never as thick as to coincide with the material objects with which they may happen to be co-localized; Kimean events, by contrast, may be highly abstract, though presumably never as abstract as to leave their spatio-temporal regions entirely unqualified: events are exemplifications of properties by objects at times (i.e., they are tropes, on some recent variants of this account), and the constituent objects and properties impose some constraints on what can possibly go on at the relevant spatio-temporal location. Lastly, it is fair to add that a number of authors—mostly concerned with the application of the event concept to problems in the semantics of natural language, the logic of temporal discourse, or the representation of temporal knowledge—do not take any stand with respect to the concrete-abstract continuum, treating events as somewhat underspecified "bare" entities subject to first-order reference and quantification.

3. Unifiers vs. multipliers. The above classification pattern is closely related to a third, rather popular way of approaching the field of event theories, which is based on the underlying identity and individuation criteria. (Succeeding in making sense of assertions or denials of identity between entities of some sort is often considered a minimal prerequisite for the viability of a theory resting on the

idea that there *are* entities of that sort, and in the case of events the issue has received particular attention.) Again we have here a wide spectrum of theories, though their exact assessment is often made difficult by the uncertain boundary between ontological and semantic issues of identity. At one end we have the "unifiers" (to use I. Thalberg's fortunate term), initially represented by Anscombe and Davidson. This is the view that a single event can be referred to by significantly distinct linguistic expressions. In its most radical version, this view turns into Quine's, which makes events so concrete as to leave no room for two events to occupy exactly the same spatio-temporal region. At the other end of the spectrum we have the "multipliers", who emphasize dissimilarities in meaning from one event-referring expression to another, inferring corresponding ontological distinctions. This view is chiefly associated with the writings of J. Kim and A. I. Goldman, and is typically affiliated with a conception of events as supervening on their participants. In between we have various intermediate positions. Generally speaking, these agree in their heart with the unifier's intuitions, but acknowledge the legitimacy of various concerns underlying the multiplier's approach. Among others, we find here accounts based on the part-whole structure of events (J. J. Thomson, I. Thalberg) or their modal properties (M. Brand, D. K. Lewis). Some theorists, such as J. Bennett, also subscribe in this regard to a sort of indeterminacy thesis, and regard the whole identity issue as resulting from impossible attempts to bridge the chasm between semantic and metaphysic issues.

4. Events and semantics. Finally, the fourth co-ordinate has to do with language, and more specifically with the role played by events within the framework of semantic theorizing. Although some authors would deny that there is any semantic way to argue for the existence of events, others view events as comprising a necessary category of entities to be posited next to other categories (such as material objects) as the referents of quantified variables visible only in deep grammatical structure. This is the Davidsonian line of thought, leading to what T. Parsons has labelled "sub-atomic semantics"; but it is also the line of thought that grew out of the independent work of Z. Vendler and A. Kenny in the analysis of sentence nominals, leading to an extensive literature in the semantic account of *Aktionsarten* (action types) and related natural language phenomena. Though sometimes the focus of a vehement debate, such lines of reasoning have come to define an independent dimension within which most theories can now be

appraised and compared to one another. Also in the cognitive sciences, and particularly in the domain of representation tools for Artificial Intelligence, the interplay between logical semantics and event ontology has been the battlefield of several proposals and developments.

Format and indexing criteria

In addition to the admittedly vague limits set by these concerns, the scope and range of the bibliography is defined by the typology of the literature that we have surveyed.

There are four main types of entry: monographs; journal articles; articles in collective volumes (including conference and workshop proceedings); collective volumes (including conference and workshop proceedings). In all cases, as already mentioned, all entries have been ordered alphabetically by the surname of the author(s) or (in the case of a collective volume) of the editor(s). Works by the same author(s) or editor(s) are listed chronologically under the surname; these are followed, again in chronological order, by their co-authored or co-edited works. (Co-authors or co-editors are always listed alphabetically by the first author/editor. There are no individual cross-references under the names of the second or subsequent authors, since the *Index of Authors* allows the user to locate all works by the same author. To facilitate quick author reference, a special *Index to Second and Subsequent Authors*, listing the names of all people appearing as second or subsequent authors or editors of titles registered as main entries, has also been included.) For the purpose of alphabetic ordering, hyphens and diacritics (including diaeresis) have been disregarded and unhyphenated complex surnames have been treated as single units. (This applies also to surnames beginning with 'von','van', and the like.) If more than one work by the same author(s) or editor(s) has the same publication year, lower case letters are added in alphabetic order (as in '1967a') to avoid ambiguity in case of cross-reference. Cross-references are always given by indicating the author(s) or editor(s) surname(s) (with initials, if necessary) followed by the year of publication of the referred title (with alphabetic tag, if applicable).

In addition to the above four categories, we have included some doctoral dissertations which have played a prominent role in the literature, but no attempt has been made to give a full coverage to this category. Occasionally (and with the same selection criteria) we have also included papers that appeared as technical reports, but unpublished manuscripts have been systematically omitted.

Some attempt has also been made to include reviews or references to reprints or later editions of books listed in the bibliography. Reviews are treated as regular entries, under the reviewer's name. (A cross-reference is provided in the annotation under the reviewed work.) Reprints or later editions are listed together with the original edition, separated by a colon and in chronological order. (In case of ambiguity, page numbers of citations and excerpts must be taken to refer to the most recent reprint or edition.) Non-original editions in languages other than English are not included (though we always give the English translation of a title originally published in another language; in that case the translation is treated as a reprint, following the criteria indicated above).

As for the annotations, they are mostly given in the form of a short summary, sometimes accompanied by quotations from particularly significant passages. Inevitably, this may reflect our personal interpretation. Moreover, many articles or books registered here are not devoted specifically to the topic of events, and our annotations are correspondingly partial: we remark on the authors' views only as far as events are concerned. Other annotations are simply cross-references, or excerpts from the authors' own abstracts (as appearing at the beginning of an article, or as reported in *The Philosopher's Index*). In any case, it is understood that the length of the annotation is never and by no means intended to be indicative of the value of the work. (We have tried to keep every annotation to a maximum of a dozen lines.)

For ease of reference, we have avoided all abbreviations in the titles of journals, collective volumes (such as conference proceedings), or publishers. Thus virtually each entry is self-contained. However, in the case of an article included in a collective volume which is listed as an independent entry (typically because of the number of relevant articles or because its publication represents a contribution of its own), the entry is given in abbreviated form by providing a cross-reference.

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We offer this bibliography together with our apologies for any omission and for any error of fact or interpretation that might have slipped in. We antici-

pate our thanks to anyone who will send us integrations, comments, corrections, or suggestions that might help us improve this work in view of an updated edition.