Events and their (spatial) context:
On the semantics of locative modifiers

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Events are *thick* entities

i.e., they are amenable to be *described* at different levels of detail

- Describing an event:
  - not just saying *what* happened…
  - …but also adding details about *how* it happened
  - referring to other things that occurred in the *context* of what happened.

- Such details are typically expressed by *modifiers*, that contribute to the event's meaning in a *compositional* way (Davidson 1969):
  a. Jones buttered the toast
  b. Jones buttered the toast slowly
  c. Jones buttered the toast slowly, deliberately
  d. Jones buttered the toast slowly, deliberately, in the bathroom
  e. Jones buttered the toast slowly, deliberately, in the bathroom, with a knife…

The challenge of locative modifiers

In some cases (particularly for *locative modifiers*) Davidsonian compositionality is challenged (Maienborn & Schäfer 2011):

a. John kissed Mary on the boat.
b. John kissed Mary on the cheek.
c. Maradona signed the contract in Argentina.
d. Maradona signed the contract on the last page.

In b) and d), the modifiers do not refer to the main event, but to some details belonging to its *internal context*.

So, to understand the semantics of these modifiers we need to understand:
- What is the *nature* of such internal context
- How to *distinguish* the internal from the external context (the broader *scene* where the event occurs)
- What is the *interaction mechanism* between the context and the modifiers.

Events, from *ex-venire*

- Multiple events may emerge from a context, capturing our attention
- How is an event isolated from its broader context?

Perceiving an event

- As objects of perception, events are *situated:* when we *perceive* an event, we also *experience* the whole of its context.

- Perceiving an event involves a double *focusing* mechanism:

  1. *Focal objects* are selected. They are in *foreground*, verything else is in the *background*

  2. *Focal qualities* inhering in them or in their parts are isolated.

A dramatic scene. Multiple events.
What are their *participants*?

- Different events may be perceived
  - The Titanic hit the iceberg
  - The Titanic is sinking
- Different **levels of involvement** in the event
  (the back vs. the front of Titanic)
- Vague **minimal participants**
- Less vague **focal qualities**: Titanic's mass, shape…, Iceberg's mass…
- The core participants depend on the way we describe the scene (which event we pick up)

Borghini & Varzi (2006). Event location and vagueness. *Philosophical Studies.*

Qualities as subjects of events

t1

t2

- Lombard (1986): events are *qualitative changes* of objects (from a property to another within the same *quality space* – a maximal class of mutually incompatible properties)
- What are the *subjects* of such changes?
- Lombard: the *objects* undergoing the change.
- Cleland (1991, citing Aristotle): the proper subjects of change are entities *in respect to which* the change occurs.
- These entities are what we called *individual qualities* in the DOLCE ontology (2003).

The Aristotelian triple

- Consider a rose that changes its color during a certain time interval.

Aristotle (*Physics*): In a process of change we may distinguish three elements:
1) that **which changes** *(the rose)*
2) the actual **subject of change** *(the rose's color)*
3) that in which it changes *("the time")*

individual quality inhering in the rose

Individual qualities

- Are aspects of things we use to *compare* them: they are directly comparable, while objects and events can only compared with respect to a quality kind.

- *Inhere* in specific individuals. A special kind of *existential dependence*.

- Are distinct from their values (a.k.a. **qualia),** which are abstract entities representing what exactly resembling individual qualities have in common, and organized in *quality spaces*. Each quality type has its own quality space.

- At different times, may keep their identity while "moving" in their quality space.

- Properties **hold**, qualities *exist*.

Qualities and their variation patterns

- We shall only talk of *qualities of endurants*, assuming that they also endure, without taking a position concerning the qualities of events.

- So, qualities are able to change, and they can of course exhibit different temporal behaviors during their life.

- Consider for instance the (mean) temperature of a sphere. It may remain stable for a while, then increase with a certain rate, decrease, remain stable again, and so on, exhibiting a certain *variation pattern*

- The term is borrowed from Lombard, but for us variation patterns include also so-called *unchanges*, when the quality remains stable.

The simplest kinds of events: quality manifestations

A *quality manifestation* is

the occurrence of a change (or unchange) in an object with respect to one of its qualities

- Formally, it is a perdurant individuated by a triple *<o, q, t>*, where:
  - *o* is a *focal object*
  - *q* is a *focal quality* inhering in *o*
  - *t* is the *time* in which *q* exists

Events as temporal manifestations of qualities

Note: we focus here on *qualitative* events. *Existential* and *mereological* events will not be considered.

A refined definition of quality manifestation

- My hands are moving.
- I am gesticulating.
- The same event?
- My body changes when the hands move, but the change it undergoes is different from the change my hands undergo! (Indeed, we don't say *the hands gesticulate*).
- The former is part of the *mereological context* of the latter
- We shall therefore **generalize** the Aristotelian triple:

- A **quality manifestation** (or **simple event**) is a perdurant individuated by a triple *<o, q, t>*, where:
    - *o* is a **focal object**
    - *q* is a **focal quality** inhering in *o* **or in one of its proper parts**
    - *t* is a **time interval** in which *q* exists
- **Direct** quality manifestations are those whose focal quality directly inheres in the focal object. Otherwise they are called **indirect.**

Ordinary events as *clusters* of quality manifestations

- Quality manifestations are the simplest case of events, but when we perceive an event we tend to cluster together multiple cognitively relevant quality manifestations, so that ordinary event names typically describe a plurality of them.

- This clustering process is a **cognitive construction**. Indeed, one may claim that only direct quality manifestations belong to the so-called *inventory of reality*.

- Since we want to account for the ontological nature of events *as described by ordinary language* (the so-called *descriptive ontology* approach) we need to address this phenomenon, which ultimately shows a systematic connection between events and their names.

The *walk* cluster

- We may distinguish multiple relevant quality manifestations:
  - A movement of a human body along a certain line
  - An alternate movement of the legs
  - A static event whose focal quality is the body's distance from the ground (which must be 0)

- These quality manifestations must necessarily occur simultaneously within a cluster in order for the cluster to be classified as a walk event. The *event kind* associated to the lexical meaning of 'walk' provides these classification criteria (a.k.a. *application conditions*)

- The minimal cluster formed by the three quality manifestations above forms the **core context** of a walking event.

- However, there are properties of a walking event (say *nice* or *easy*) that appear to be *intrinsic* to the event, but are not *grounded* in the core

- We say they belong to the **characterizing context** of the event

The internal *synchronic structure* of events
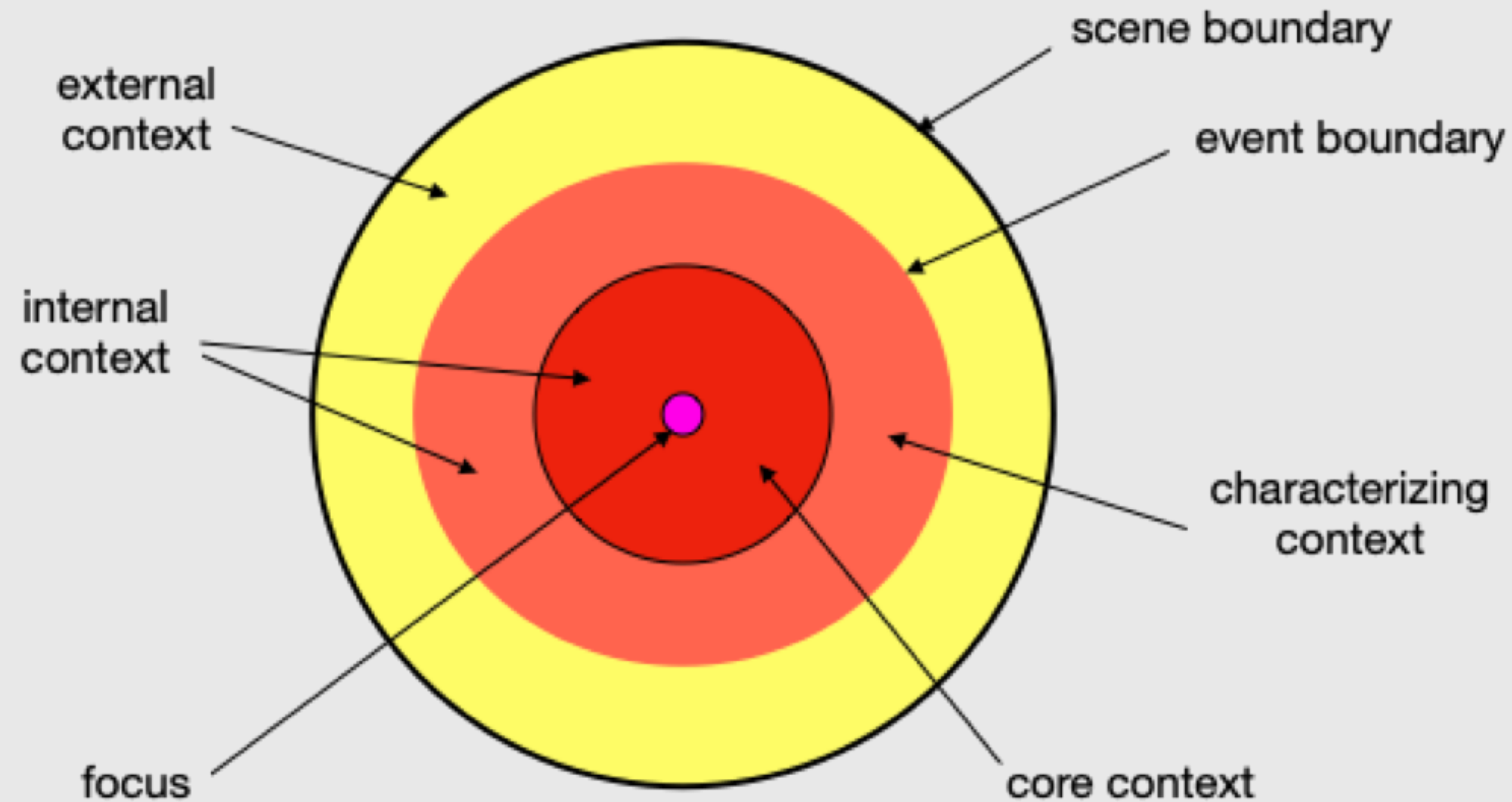
An ordinary event consists of a main simple event called the *focal event* or just the *focus* and a number of (cognitively relevant) co-events, which together form its internal context and determine its intrinsic properties, i.e., its specific *manner of occurrence*.

The interaction between modifiers and the event structure

- Interaction with the global event structure
  - A modifier is ***internal*** if it is grounded in some sub-event that belongs to the internal context, and ***external*** otherwise.

    a. John kissed Mary on the boat.   (external modification)

    b. John kissed Mary on the cheek.   (internal modification)

- Interaction with their ***target events*** within the event structure

  - Since the target events are quality manifestations with their own internal structure *<o,q,t>*, the interaction depends on ***which component of the triple*** is concerned

  - Moreover, we should distinguish between ***relational*** and ***non-relational*** modifiers, depending on whether their meaning contribution also depends on some other event, besides the target one.

The case of locative adverbials - 1

a. John kissed Mary on the boat.

b. John kissed Mary on the cheek.

- Since occupying a certain spatial location is an event in itself, we see locative adverbials as expressing a ***co-occurrence relationship*** between the focal event and a certain locative event concerning the focal object or something else.

- In (a), the modifier expresses the spatial location of the ***focal object***. It may be paraphrased by *while he was on the boat.* It is an *external* modifier since it is grounded in a locative event consisting of John being on the boat, which does not belong to the internal context since, according with the lexical meaning of kiss, the kissing location is not *intrinsic* to the kiss.

- In (b), the modifier expresses the spatial location of the ***focal quality's bearer***. The while-clause paraphrase does not work in this case, since the modifier is grounded in a sub-event (John's lips being located on Mary's cheek) whose focal object is different from the focal object of the main event. According to the ordinary sense of a kiss, the lips location matters, so that it is intrinsic to the kiss, so the modifier is internal.

a. Maradona signed the contract in Argentina.
b. Maradona signed the contract while he was in Argentina.
c. Maradona had a stroll in Buenos Aires.
d. Maradona had a stroll while he was in Buenos Aires.
e. Maradona had a stroll in Buenos Aires while he was in Argentina.
f.   Maradona signed the contract on the last page.

In (a), *in Argentina* is again an external modifier. (b) shows that the while-periphrasis works.

(c) is similar, but is about a different event kind. Being in a specific place while strolling (and hence enjoying the scenery, and so on) is a relevant part of a stroll, so *Maradona being in Buenos Aires* belongs to the internal context of the strolling event, and the locative modifier is in this case internal.

(d) shows that a reduction to a while-clause is still possible, but this stresses an external interpretation of the adverbial, which is ambiguous in (c) although its most natural interpretation seems to be internal.

This preferred internal interpretation is confirmed by (e). Here there is some evidence for a manner reading of *in Buenos Aires* also from the pragmatic point of view. For instance, from the utterance *I had a stroll in Buenos Aires* we may expect a reaction such as *Was it nice?*, while we wouldn't expect the same reaction to *I signed the contract in Buenos Aires.*

In (f) the event that grounds the property denoted by the modifier is a location event that does not concern Maradona, but rather a certain ink pattern resulting from his signing action. Such location event is a necessary sub-event of the global signature event, so the modifier has clearly an internal interpretation. Note that in this case the reduction to a while-clause is not possible.