

# Explanatory Style Annotation Guide – DRAFT

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Research suggests that the way that people explain things that happen in their lives can be revealing.<sup>1</sup> A consistently pessimistic *explanatory style*, for example, can help indicate depression. The ability to detect these explanations, and consequently describe a person's explanatory style, is therefore a valuable skill for therapy-minded Companionbots since it lets them know when and about what to start a therapeutic dialogue.

## 1 Event Attribution Units (EAUs)

In order to describe a person's explanatory style, we need a sample of how they explain things that happen to them (particularly things about which the person has a non-neutral opinion). This sample is made up of a set of *event-attribution units*<sup>2</sup> (EAUs) and some descriptive features about them. EAUs are the conjunction of an *event* and an *attribution* that explains the existence of the event.

### 1.1 Events

Seligman provides a fairly comprehensive definition of what is meant by *event* in his annotation guidelines:

An event is defined as any stimulus that occurs in an individual's environment or within that individual (e.g. thoughts or feelings) that has a good or bad effect from the individual's point of view. Events can be mental (e.g. I was afraid), social (e.g. I got a pay raise) or physical (e.g. I got in a car accident). Events should be unambiguously good or bad from the individual's point of view and may occur in the past, present or hypothetical future. Events that have good and bad elements, neutral events or events that do not affect the S [the individual] should not be extracted.

While we do attempt to follow this definition as closely as possible, we find that it is easier to reproduce similarly formed *events* from our own transcripts by requiring that several conditions be true about our annotations in addition to those given in Seligman's guidelines. Those conditions are located in section 3.2 on page 5.

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<sup>1</sup>Schulman, P., Castellon, C., & Seligman, M. (1989). Assessing explanatory style: The content analysis of verbatim explanations and the attributional style questionnaire. *Behavior Research and Therapy*, 27(5), 505-512

<sup>2</sup>appendix of CAVE paper, with guidelines

## 1.2 Attributions

## 1.3 Examples

(...) He then goes on to give examples of good *event-attribution units*:

Table 1: Good EAUs.

Event	Attribution
1 I didn't do well on my exam	because I didn't sleep well last night.
2 I haven't been sleeping well	because I'm worried about getting into a good graduate program.

## 2 Analyzing EAU dimensions

### 2.1 Personal v. External

### 2.2 Permanent v. Temporary

### 2.3 Pervasive v. Specific

### 2.4 Examples

## **3 Annotating Event-Attribution Units and their Features**

### **3.1 Annotation Phases**

#### **3.1.1 Phase 1: Event spans**

For every EAU identified:

1. Annotate text span of the event as type `Event`.

#### **3.1.2 Phase 2: Attribution spans**

For every event within the given consensus set:

1. Annotate text span of the associated attribution as type `Attribution`.
  - (a) Annotate the identification number of the associated event as a feature, `Caused_Event_ID`.

#### **3.1.3 Phase 3: Attribution dimensionality**

For every attribution within the given consensus set:

1. Annotate values for each of the three dimensions as features, `Personal--External`, `Permanent--Temporary`, `Pervasive--Specific`, each with a digit between 1 and 7.

## 3.2 Annotation conditions

Some definitions:

**propose, v.** to make a statement about something which could be evaluated as either *true* or *false*, e.g. *a bell rang repeatedly*, but not just *a bell* or *to ring* or *repeatedly*.

**corefer, v.** to share a single reference, e.g. *Paul* and *He* in “*Paul* had a great time” and “*He’s* always in a good mood.”

**backchannel, v.** to affirm active listening, e.g. “okay,” “uh-huh,” “I’m listening,” etc.

**turn n.** in conversation, an uninterrupted span of speech by a single person (excepting any *backchannel*).

### 3.2.1 Events

For every *event* annotation:

1. The *event* must have been mentioned during the given conversation.
2. The event must have been or otherwise be very probable to have been evaluated as either good or bad by subject in terms of its effects on the subject.
3. The text span that expresses the *event* must be in the form of a complete sentence or otherwise unambiguously *corefer* with a complete sentence present in the transcript expressing such event when no other non-pronoun mention of the event appears within the same *turn* as the otherwise most appropriate event mention.
4. The text span that expresses the *event* must primarily *propose* that event.
5. Experience of the *event* by the participant must not rely solely on a generic statement. e.g. not “Teachers often feel stressed” even if the individual is in fact a teacher.
6. The text span expressing the *event* must be the minimal length necessary to satisfy all other conditions.

### 3.2.2 Attributions

For every *attribution* annotation:

1. The *attribution* must have been mentioned during conversation.
2. The text span that expresses the *attribution* must primarily *suggest* that attribution.
3. *Events* must be the minimal length necessary to satisfy all other conditions.
4. The causal relationship identified between the attribution and its associated event must have clearly been intended to have been communicated.
5. The internality dimension of the attribution must be non-neutral (i.e. either internal or external).

### 3.2.3 All annotations

For every **annotation** made:

1. Annotations may be non-contiguous.
  - (a) Use *annotation\_continuation*, replacing *annotation* with the type name of the continued annotation, e.g. *Event\_continuation*.
  - (b) Annotation continuations must not be interrupted by a complete annotation of the same type.
2. Annotation spans may fail to provide all relevant information and remain valid only if nearby contextual information relieves the insufficiency.

### 3.2.4 EAUs

Every *EAU*:

1. must consist of the nearest pair of annotations for which both spans satisfy their respective conditions, except:
  - (a) when an attribution is repeated in such a way that does not seem to be merely sentence repair (e.g. stuttering, clarification, etc.)
2. must not overlap in its event and attribution spans.

3. given a contiguous series of similar events which an attribution or series of attributions with similar internality explains, annotate a single event attribution grouping like events as a single event and like attributions as a single attribution.