

## Stress Typology for Stress Measurement

**Purpose.** The Stress Measurement Network developed the following taxonomy of terms as a first step toward providing a common language, including descriptive dimensions of exposure and responses to stress. The purpose of this tool is to highlight the important conceptual dimensions of stress relevant to the study of health and well-being. Researchers describing any type of psychological stress should use this as a reference guide for how to describe the stressor exposure and response, as well as a tool during study development to make sure key aspects of the stressor of interest are being captured. Using consistent language when describing the aspects of stress and its measurement – and using a theoretical lens to do so – is important in order to build cumulative science of stress and to harmonize around critical theoretical dimensions.

*This is a working document that will be updated with input from colleagues. We will come input to [Elissa.Epel@ucsf.edu](mailto:Elissa.Epel@ucsf.edu). The latest version can be found at <https://stresscenter.ucsf.edu/>.*

**Typology Introduction.** An essential distinction in studying stress is whether the form of stress being referred to is the **exposure** to the stressful event or stimulus (**A**), or the **response** to it (**B**). Here we outline dimensions of the stressor (timescale, life period, and characteristics—duration, controllability, severity, domain of life), and response (global or specific appraisals, and stress processes—motivational states, appraisals, emotional responses, emotion regulation and other coping responses) that can be used when describing stress measurements to promote unified descriptions across studies and fields.

**A. STRESSOR EXPOSURE Characteristics.** Stressor exposure characteristics include the timescale of the stressor, the life period in which it occurs, and the assessment window of the measurement tool used. These can be either objectively recorded or self-reported by the participant.

### A.1. Timescale

- 1) **Acute Stressors.** These are short term exposures under either naturalistic or standardized laboratory conditions.
- 2) **Daily Events/Hassles.** These are the more minor hassles that happen frequently, such as rushing, arguments, deadlines, and child caregiving strains.
- 3) **Life Events.** These are stressful events that are event-based – meaning they are episodic in nature, and have an identifiable onset – such as getting into an accident, being laid off, being broken up with, or receiving a life-threatening diagnosis. Traumatic events are a special category of life events in which physical and/or psychological safety is threatened.
- 4) **Chronic Stressors.** Stressors that are identified by participants, interviewer, or external raters as being demanding, distressing, and ongoing (e.g., 6 months or more).

### A.2. Life period.

- 1) **In utero.** Exposure to maternal stress and associated hormones that traverse the umbilical cord and modify the resting allostatic state and response signatures prenatally.
- 2) **Childhood.** Childhood is typically defined up to age 18 years old, though some measures focus on early childhood such as before age 5.
- 3) **Adulthood.** Exposures that occur at 18 years or older.

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- 4) **Lifespan/Cumulative.** Measures that ask about exposures during childhood and adulthood. This can be measured cross-sectionally with retrospective measures, or this can be calculated from prospective studies that take measures over time.

### A.3. Assessment window.

- 1) **Measurement timeframe.**
  - a. Current rating (usually captures in-the-moment reports, can also be reporting on the past 10 minutes, past hour, etc.)
  - b. Daily ratings (typically given at the end of day, reporting on the day)
  - c. Retrospective periods of more than a day (reporting on experiences over the past week, month, year, or lifetime)
- 2) **Proximity of assessment to stressor exposure.** This more typically applies to objective assessments since subjective assessments are harder to recall retrospectively. The proximity of the assessment to the event can be current or retrospective. It can be assessed as a continuous variable, such as the number of minutes or years between when the exposure was, and when it was assessed.

### A.4. Stressor attributes.

- 1) **Duration.** Captured in measurement units such as minutes, days, months, or years.
- 2) **Severity.** Measured on a continuous scale, from low-to-high severity, that can be rated by others or self-rated.
- 3) **Controllability. Tasks can be operationalized on a continuous scale by self or others ranging from controllable to uncontrollable.** Noise exposure as example
- 4) **Life domain.** Life domains are specific areas of life that stress can exist within such as Education, Work, Reproductive Health, Housing, Money, Crime, Legal, Health, Intimate Relationships, Friend Relationships, Children, Death, Possessions. Stressors can cross and affect multiple domains.
- 5) **Target of stressor.** This identifies who the stressor targets and can include the self, close-others such as family and friends, or the participants' community.
- 6) **Potential of the stressor to elicit potentially harmful emotional responses.** There are qualities inherent to some stressors that lead to feelings of social threat or shame that are associated with worse adjustment outcomes. These include interpersonal loss, physical threat/danger, social status threat, humiliation, entrapment, and role change/disruption.

**B. PSYCHOLOGICAL AND BEHAVIORAL RESPONSES to specific stimuli or events.** Responses to stressful stimuli or an acute event include appraisals and perceptions of the situation, as well as affective, emotional, and cognitive responses to it. Measures of trait affect are not included as these are not context-specific and thus we do not consider them stress responses, however, momentary emotional responses are considered a component of the stress response.

- 1) **Global subjective stress.** This is often measured with the Perceived Stress Scale, and thought of when we colloquially say we are "feeling stressed."
- 2) **Subjective stress within a life domain.** These measures typically include both extent of exposures (existence of stressor, to frequency of experience) as well as subjective ratings of how much distress the situation causes. Examples of common domains include neighborhood environment, financial

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resources and strain, work strain, unemployment, and social/interpersonal stress such as caregiver, loneliness, isolation, relationship strain, and discrimination.

3) **Subjective and behavioral responses to specific stimuli.**

- a. Motivational states (e.g. approach and avoidance, which can be measured with subjective and behavioral indicators)
- b. Emotional responses (negative and positive affect ratings and specific emotions in response to stimuli)
- c. Cognitive appraisals (threat vs. challenge appraisals, threats to safety, lack of controllability, loss appraisals)
- d. Behavioral coping (e.g. behaviors such as smoking, overeating, and strategies such as seeking support)
- e. Emotion regulation (e.g. cognitive re-appraisal, situation modification, response modulation, emotion focused coping)
- f. Perseverative cognition (e.g. worry, rumination)

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