

## **STARS – self report**

**Instructions:** Below are statements about your behavior and feelings. For each statement, decide whether or not it is true for you. If you never show the behavior or experience those feelings, choose the “never” option. If you might occasionally or sometimes show that behavior or experience those feelings (once or twice a month or you might respond like that once or twice in the situation described), then choose the “sometimes” option. If the statement is true for you most of the time (every week or most of the time in the situation described) but is occasionally not true, then choose the “often” option. Finally, if that is the behavior that you always show or how you always feel in the situation described, then choose the “always” option.

**Likert Scale: 1=Never, 2=Sometimes, 3=Often, 4=Always**

| #  | Item   |
|----|--|
| 1  | It bothers me if someone else around me is crying  |
| 2  | I enjoy reading fictional stories about people’s lives                                   |
| 3  | I can tell when I have messed up by the look on someone’s face                           |
| 4  | I notice when people around me are afraid  |
| 5  | I find hugs and physical touch to be comforting if I am upset                            |
| 6  | I worry about dangerous things or accidents happening                                    |
| 7  | I say “I love you” out loud to people that I love  |
| 8  | I like holding hands with people I love  |
| 9  | I am bothered when unexpected events happen  |
| 10 | I notice the sounds of children crying   |
| 11 | I change my behavior if someone yells or shouts at me                                    |
| 12 | I enjoy one-on-one conversations with others   |
| 13 | I notice if a child around me gets scared  |
| 14 | I plan ways to hang out or spend time with other people                                  |
| 15 | I do not like to be alone in the dark  |
| 16 | I notice loud or aggressive people on the street   |
| 17 | If I see people hugging, it makes me want to join in                                     |
| 18 | I get upset when people around me are angry  |
| 19 | I like to hug best friends or family   |
| 20 | I like to sit close to people on a sofa if I know them well                              |
| 21 | I enjoy having my head or hair stroked by a person with whom I am close                  |
| 22 | I enjoy cuddling, tickling, or being affectionate with people I am close to              |
| 23 | I get excited about seeing favorite family members                                       |
| 24 | I like to hug or kiss people to say hello or goodbye                                     |
| 25 | I can tell if people are angry or upset by the tone of their voice                       |
| 26 | I like to talk about my feelings with people   |
| 27 | I’ll put my arm around or link arms with someone I love if we are walking along together |
| 28 | I do not like thunderstorms  |

**Scoring Information for Researchers for the Sensitivity to Threat and Affiliative Reward Scale (STARS) – self report**

| #  | Item   | STAR dimension        | STAR sub-dimension       |
|----|--|-----------------------|--------------------------|
| 1  | It bothers me if someone else around me is crying  | Sensitivity to Threat | Social Threat            |
| 2  | I enjoy reading fictional stories about people's lives                                   | Affiliative Reward    | Non-Physical Affiliation |
| 3  | I can tell when I have messed up by the look on someone's face                           | Sensitivity to Threat | Social Threat            |
| 4  | I notice when people around me are afraid  | Sensitivity to Threat | Social Threat            |
| 5  | I find hugs and physical touch to be comforting if I am upset                            | Affiliative Reward    | Physical Affiliation     |
| 6  | I worry about dangerous things or accidents happening                                    | Sensitivity to Threat | Non-Social Threat        |
| 7  | I say "I love you" out loud to people that I love  | Affiliative Reward    | Non-Physical Affiliation |
| 8  | I like holding hands with people I love  | Affiliative Reward    | Physical Affiliation     |
| 9  | I am bothered when unexpected events happen  | Sensitivity to Threat | Non-Social Threat        |
| 10 | I notice the sounds of children crying   | Sensitivity to Threat | Social Threat            |
| 11 | I change my behavior if someone yells or shouts at me                                    | Sensitivity to Threat | Social Threat            |
| 12 | I enjoy one-on-one conversations with others   | Affiliative Reward    | Non-Physical Affiliation |
| 13 | I notice if a child around me gets scared  | Sensitivity to Threat | Social Threat            |
| 14 | I plan ways to hang out or spend time with other people                                  | Affiliative Reward    | Non-Physical Affiliation |
| 15 | I do not like to be alone in the dark  | Sensitivity to Threat | Non-Social Threat        |
| 16 | I notice loud or aggressive people on the street   | Sensitivity to Threat | Social Threat            |
| 17 | If I see people hugging, it makes me want to join in                                     | Affiliative Reward    | Physical Affiliation     |
| 18 | I get upset when people around me are angry  | Sensitivity to Threat | Social Threat            |
| 19 | I like to hug best friends or family   | Affiliative Reward    | Physical Affiliation     |
| 20 | I like to sit close to people on a sofa if I know them well                              | Affiliative Reward    | Physical Affiliation     |
| 21 | I enjoy having my head or hair stroked by a person with whom I am close                  | Affiliative Reward    | Physical Affiliation     |
| 22 | I enjoy cuddling, tickling, or being affectionate with people I am close to              | Affiliative Reward    | Physical Affiliation     |
| 23 | I get excited about seeing favorite family members                                       | Affiliative Reward    | Non-Physical Affiliation |
| 24 | I like to hug or kiss people to say hello or goodbye                                     | Affiliative Reward    | Physical Affiliation     |
| 25 | I can tell if people are angry or upset by the tone of their voice                       | Sensitivity to Threat | Social Threat            |
| 26 | I like to talk about my feelings with people   | Affiliative Reward    | Non-Physical Affiliation |
| 27 | I'll put my arm around or link arms with someone I love if we are walking along together | Affiliative Reward    | Physical Affiliation     |
| 28 | I do not like thunderstorms  | Sensitivity to Threat | Non-Social Threat        |

**Final item pool and factor structure of the STARS established in:**

Perlstein, S., Wagner, N.J., & Waller, R. (2020). Psychometric Properties, Factor Structure, and Construct Validity of the Sensitivity to Threat and Affiliative Reward Scale (STARS) in Children and Young Adults, *under invited review*

**Abstract (in preparation)**

Callous-Unemotional (CU) traits (i.e., lack of empathy, prosociality, and guilt) identify children at risk for severe antisocial behavior. A recent theoretical model proposed that CU traits arise from deficits in two psychobiological dimensions of temperament: sensitivity to threat (i.e., fear in response to social and nonsocial cues of threat) and affiliative reward (i.e., motivation to seek out and get pleasure from social closeness with others). To assess these dimensions, we developed the parent- and self-reported

*Sensitivity to Threat and Affiliative Reward Scale (STARS)*. We tested the psychometric properties, factor structure, and construct validity of the STARS in independent samples of children and adults. We used confirmatory factor analysis (CFA), Differential Item functioning (DIF), and Item Response Theory (IRT) techniques to identify the most parsimonious, best-performing set of items from the initial 64-item pool of items of the STARS. IRT and DIF analyses using the initial item pool resulted in a revised set of 28 items that functioned equivalently for children regardless of age, gender, or racial/ethnic minority status. CFA indicated adequate fit for both a theorized 2-factor model (i.e., Threat Sensitivity and Sensitivity to Affiliation) and 4-factor model (i.e., Non-Social Threat, Social Threat, Non-Physical Affiliation, and Physical Affiliation). These factors were replicated in independent samples of children and young adults. Across all samples, the STARS dimensions of *threat sensitivity* and *sensitivity to affiliation* showed convergent validity with criterion measures and both low levels of threat sensitivity and affiliation specifically predicted CU traits, but not conduct problems.

### **Scoring – compute mean**

#### **1) STAR Dimensions (recommended)**

- **Compute mean of 13 items for Threat Sensitivity:** 1, 3, 4, 6, 9, 10, 11, 13, 15, 16, 18, 25, 28
- **Compute mean of 15 items for Affiliative Reward:** 2, 5, 7, 8, 12, 14, 17, 19, 20, 21, 22, 23, 24, 26, 27

#### **2) STAR sub-dimensions (exploratory)**

- **Compute mean of 4 items for Non-Social Threat Sensitivity:** 6, 9, 15, 28
- **Compute mean of 9 items for Social Threat Sensitivity:** 1, 3, 4, 10, 11, 13, 16, 18, 25
- **Compute mean of 6 items for Non-Physical Affiliation:** 2, 7, 12, 14, 23, 26  
**Compute mean of 9 items for Physical Affiliation:** 5, 8, 17, 19, 20, 21, 22, 24, 27