

## **Co-Regulation Coding Manual**

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Any scientific reference should be to:

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## The Co-Regulation Coding System

This manual provides the code definitions for the Co-Regulation (CORE) coding system, an observational tool for the study of bi-directional emotion co-regulation in different dyad types (e.g., parent-child, peers, and romantic partners). Co-regulation occurs in a number of ways. For example, individuals may attempt to improve their interaction partner's emotions by calming them down with a relaxing tone of voice and a reassurance, or by attempting to make them see a stressful situation as less nerve-wracking (Niven, Totterdell, & Holman, 2009). Individuals may also attempt to worsen their partner's emotions, such as by being critical or inciting guilt. Other functions of co-regulation include avoiding interpersonal issues and solving problems. The CORE consists of code categories that are designed to capture these differences in emotion co-regulation. The code is applied to both members of a dyad and is evaluated continuously in real-time, to yield an index of bi-directional co-regulation as it changes from moment to moment.

The CORE has 11 real-time codes, which are mutually exclusive categories. These categories are: *Negative emotional directives*, *Positive emotional directives*, *Invalidation*, *Validation*, *Avoidance*, *Reappraisal*, *Negative emotion talk*, *Positive emotion talk*, *Solution-focused problem solving*, *Problem definition*, and *No co-regulation*. In this manual, each code is defined and typical cues are provided, followed by both examples and non-examples of the code category. CORE codes are ordered in a hierarchy, so that when there is ambiguity about which code pertains to a regulation event, the coder decides by default to categorize the event into the higher-order category. Higher-order categories reflect co-regulation events that are more overt in their regulatory nature, whereas lower-order categories reflect events that are less overt in their regulatory nature. Table 1 shows the hierarchy of the codes and examples. An additional 5 global ratings assess coders' impressions of interactions.

Table 1. The Hierarchy of the CORE Codes.

Code	Example
1. Negative emotional directive	"You should feel ashamed for what you did."
2. Positive emotional directive	"You should feel proud of your good grade."
3. Invalidation	"You have no right to be angry."
4. Validation	"I understand that you are angry now...."
5. Avoidance	"I'm not talking about this anymore."
6. Reappraisal	"Maybe it won't be as bad as you think."
7. Negative emotion talk	"I was really angry yesterday"
8. Positive emotion talk	"I feel happier now."
9. Solution-focused problem solving	"What if I just clean my room once a week?"
10. Problem definition	"I need you to listen to me when I ask you to clean your room."
11. No co-regulation	"After I did my homework I took the dog for a walk."

## Coding Procedures

### Overview

The same CORE coding scheme is applied to both members of the dyad using Noldus Observer 5.0. Coders base their decisions primarily on verbal content, but accompanying verbal tone and body language are considered when applying decision rules to select the proper code. Codes are applied to each member of the dyad and are evaluated continuously in real-time. After preliminary training and satisfactory reliability is reached, coders will commence coding.

For each dyad, coders will view the video file prior to coding in order to become familiar with the interaction. Next, coders will code the entire video file for one interaction partner, and then the entire video file for the other interaction partner. After coding each individual, coders will respond to global ratings of co-regulation. All coders will code a subset of specific videos in order to assess on-going reliability. Discrepancies and disagreements will be discussed and resolved during coding meetings.

### Details

- 1) For each parent-child interaction, coders will first watch the entire video prior to coding, in order to familiarize themselves with the interaction.
- 2) After becoming familiar with the interaction, coders will commence coding with the real-time codes.
  - a) The onset and offset of codes will be determined primarily by verbal statements: when a co-regulatory verbal statement starts, that signals the start of the code. When such statements end, that signals the end of the code. A similar approach will be taken when coding non-verbal co-regulatory behaviours.
  - b) The coder will first code the entire interaction for the parent.
  - c) The coder will then code the entire interaction for the child.
- 3) After real-time codes have been applied to both members of the dyad, coders will complete the 5 global ratings of their perceptions of the interaction.

### Notes

- **The “Three Second Rule”**
  - Sometimes, an individual will be talking for an extended period of time and it can be difficult to determine whether one or more regulation events happened during that time. The Three Second Rule is used to help in these circumstances. If an individual is talking and then pauses for *three seconds or more* before continuing, the instances should be treated as separate regulation events (e.g., two instances of *Solution-focused problem solving* if this happened during brainstorming solutions). If an individual pauses for less than three seconds, the regulation event will be treated as one event.

## Code Definitions

### 2. Positive emotional directives

Positive emotional directives explicitly target positive emotions and emotion-related behaviours and thoughts by overtly promoting, encouraging, or reinforcing the maintenance *or* the increase of positive emotion, or decrease of negative emotion (Chaplin, Casey, Sinha, & Mayes, 2010; Gottman, Katz, & Hooven, 1996).

Cues:

- Behaviours, reassurances, or other verbalizations that directly target emotions, such as soothing and providing comfort, e.g., “Don’t be upset about it”.
- Compliments that directly target positive emotions, e.g., “You should feel proud of yourself.”
- Statements in the imperative that target positive emotions, e.g., “We should be glad that something worse didn’t happen”.

Examples:

*Son:* I got all of my homework done. (*No co-regulation*)

*Mother:* You should feel proud of yourself. (*Positive emotional directive*)

*Mother:* We’re going to discuss this calmly... (*Positive emotional directive*)

Non-examples:

- Appraisals, opinions, and remarks that involve the direct discussion of positive emotion, without an emotion-related command or directive (e.g., “I am happy”; “He makes me feel great”). This type of statement may indicate *Positive emotion talk*.
- Directives that may sound positive, but do not directly target emotions and target behaviours instead, e.g., “Let’s settle down”, may indicate *No co-regulation*.

#### 4. Validation

Validation places value on the other person through verbal expressions of support, empathy, or approval (Eisenberg et al., 2008; Morris et al., 2007).

Cues:

- Expressing warmth, concern, and empathy (Julien, Chartrand, Markman, & Lindahl, 1995)
- Encouragement, e.g., “I know you can do a good job” (Julien et al., 1995)
- Giving compliments that demonstrate appreciation and value of the other, e.g., “You are good at helping your brother” (Julien et al., 1995)
- Minimizing self-deprecating statements, e.g., “No, you are not dumb.” (Julien et al., 1995)
- Comforting, without an explicit emotional directive, e.g., “It will be okay”.
- Verbal acknowledgement or support of expressed emotion, point of view, or any other stance, e.g., “I know you’re upset about it”, “I can see how you would see it that way”.
- Restating a concern expressed by the other, e.g., “So you’re upset about what happened yesterday” (Greene & Ablon, 2006)
- Restatements of the other’s perspectives, ideas, or emotional states
- Demonstrating that the other’s perspectives and preferences are valued, e.g., “I know that it’s important to you to always do a good job”; “That’s a good idea”; “I know it’s important to you to watch your shows at 9:00 (*Validation*), but you’re just too tired the next day when you stay up that late (*Problem Definition*)”

Examples:

*Daughter:* Well, yes, but still, I hate him. (*No co-regulation*)

*Mother:* Well, it's understandable that you would hate him. (*Validation*)

*Daughter:* He can be annoying, very, very, very annoying. (*Negative emotion talk*)

*Mother:* I can see that, I don't think you're wrong. (*Validation*)

*Mother:* What do you see as the issue with our house? (*Problem definition*)

*Son:* It's messy. (*Problem definition*)

*Mother:* You see the house as messy. (*Validation*)

Non-examples:

- Appraisals, opinions, and remarks that are emotionally positive towards the other but do not place value on the other person, e.g., “I was happy when we were together yesterday.” This type of statement may indicate *Positive emotion talk*.
- Displaying interest in the form of one- or two-word responses of acknowledgement, e.g., “Yeah”, “Mhmm”, or one-word follow-up questions, e.g., “Why?”, “How?”. These types of statements may indicate *No co-regulation*.
- Giving complements in the context of reframing a situation to alter its emotional significance may indicate *Reappraisal*, e.g., “You might not be good at math, but you are good at lots of other things”.
- Comforting, if it includes an explicit emotional directive, e.g., “Don’t be upset about it”, may indicate a *Positive emotional directive*.
- Restating the other’s perspectives, ideas, or emotional states for the purposes of clarification or when displaying incredulity (e.g., in the form of a question) indicates *No co-regulation*.
- Agreement that does not place value on the other person or agreement about a non-emotion-related issue (such as a fact) may indicate *No co-regulation*.

## 6. Reappraisal

Reappraisals are attempts to modify the appraised significance of a problem, situation, perspective, or issue (Gross, 1998; Frijda & Zeelenberg, 2001; Niven et al., 2009).

Cues:

- Providing an alternate explanation for an issue, “He got upset because he was having a bad day, not because he hates you” (Gross, 1998; Niven et al., 2009)
- Helping the other understand potential alternative outcomes of an issue, e.g., “Maybe it won’t be so bad. You might have a lot of fun meeting new kids to play with.”
- Helping the other to understand one’s own or other’s perspective on an issue, e.g., “You don’t think he bought you a gift because he likes you?”, “Don’t you think I’m trying to help you?”
- Reframing or altering the significance of a problem or situation, including by sharing one’s own perspective to show the other a different way of appraising the problem or situation, e.g., “Because I’m a mom, I spend so much time helping you and your brothers out, but sometimes I need my own time too. Do you understand that?”
- Emphasizing the positive aspects or minimizing the negative aspects of a situation

Examples:

*Daughter:* A lot of my friends think you’re annoying. (*Problem definition*)

*Mother:* Well, don’t they think their own parents are annoying? (*Reappraisal*)

*Daughter:* He is so mean. (*Problem definition*)

*Mother:* Doesn’t he do some things that are nice? (*Reappraisal*)

*Son:* No, they got me in trouble, and I got spended. (*No co-regulation*)

*Mother:* Yeah, you got *su*-spended. (*No co-regulation*)

*Son:* [*yelling*] They could have got suspended too! (*No co-regulation*)

*Mother:* Yeah, but Jack, they didn’t do it like you did it. (*Reappraisal*)

Non-examples:

- Clarifying a fact, e.g., “No, we actually weren’t at the movies. We were at the park” may indicate *No co-regulation*.
- Stating a contradictory opinion or point of view or providing an alternate solution, if it does not contain any of the above cues, may indicate *Solution-focused problem solving* if it is a part of brainstorming solutions to an interpersonal issue, e.g., “I don’t think that’s the best idea”, “What if we did something else instead?”
- Explaining one’s own perspective, if it does not contain any of the cues above, may indicate *No co-regulation* if it does not involve the alteration of an issue’s significance, e.g., “Well, I was thinking it would be nice to stop for a coffee on the way home”.

## 11. No Co-Regulation

Emotion co-regulation does not occur, and hence will be coded as “No co-regulation”, in the following situations:

- General talking, such as describing something that happened
- Discussing facts:
  - Questions about facts, e.g., “What time did you get home after school today?”
  - Clarifying facts, e.g., “No, we weren’t actually at the movies. We were at the park.”
  - Describing how things work
- One-word responses of acknowledgement, e.g., “Okay”, “Yeah”, or one- or two-word follow-up questions, e.g., “How?”, “Why not?”
- Utterances, if unaccompanied by other verbal statements that are co-regulatory, e.g., “Um...”, “Mhmm...”, “Uh...”
- Laughter
- Agreement, if it does not involve restating the other’s perspective or otherwise placing value on the other, or is about a fact (see *Validation*).
- Disagreement, if stated in an emotional tone but is not critical or otherwise invalidating
- Explaining one’s own perspective, if it does not alter the significance of an issue, e.g., “Well, I was thinking it would be nice to stop for a coffee on the way home”
- Conveying desires and needs outside of the problem-solving context, e.g., “I want to go to the movies”
- Stating preferences, if not accompanied by any cues indicated by other categories, e.g., “I like my neighbour’s cat”.
- Behavioural directives including those that target immediate behaviour, e.g., “Sit down and be quiet”, and those that do not target immediate behaviour, e.g., “Go to the store tomorrow”.
- Any instance not codable by the other codes, including silence
- Disengaging from the interaction

Examples:

*Mother:* Did she eat lunch when you got home, by the way? (*No co-regulation*)

*Daughter:* Yeah, she started to eat right as we were leaving. (*No co-regulation*)

Non-examples:

- Describing something that happened, if it contains descriptions of emotional states, may indicate *Positive emotion talk* or *Negative emotion talk*.
- Describing something that happened, if in the context of clarifying a concern or interpersonal issue, may indicate *Problem definition*.
- Utterances, if accompanied by co-regulatory verbal statements, e.g., “Um...I think we should start picking up the garbage”, will be included in the code category applied to the accompanying statement.
- One-word answers that are descriptive of ideas or opinions in the context of defining or solving a problem may indicate *Problem definition* or *Solution-focused problem solving* (e.g., *Parent:* “What is our problem with your room?” *Child:* “Messiness”)
- Agreement that includes restating the other’s perspective or otherwise placing value on the other, e.g., “You are right to feel that way”, may indicate *Validation*.
- If the explanation of one’s own or an alternate perspective includes placing value on the other person, e.g., “I think you did a great job”, it may indicate *Validation*. If it involves altering the appraised significance, e.g., “Maybe it won’t be as bad as you think it will be”, it may indicate *Reappraisal*.

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- A behavioural directive that does not target immediate behaviour, but is in the context of problem solving, may indicate *Solution-focused problem solving*, e.g., “So next time, you will clean up the mess right away, ok?”

## **12. Uncodeable**

The Uncodeable code is to be used only in circumstances where there is no way to determine an individual’s co-regulation behaviour, such as when an individual goes off screen, when the talking is *completely* inaudible due to technical issues, or when participants are speaking in a language other than English. This code is only to be used in these extreme cases.