

HOW TO DESIGN AN EMOTION · WORKING PAPER 3 OF 8

The Constructivist Semiotic Model of Emotions: Affect, Feeling, and Emotion as Non-Substitutable Constructs

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ABSTRACT

Many theories of emotion treat physiological affect, conscious feeling, and emotion as stages of one continuous process. They then cannot explain why substantially the same feeling supports different emotions, and they leave no standard by which an emotion can be correct or mistaken. I present the Constructivist Semiotic Model of Emotions (CSME), which treats the three as non-substitutable constructs with distinct identity conditions. Affect is the physiological and regulatory substrate. Feeling is the conscious metaperceptual awareness of that substrate, which makes it available for interpretation without giving it meaning. Emotion is a goal-governed, context-sensitive semiotic interpretive act by which an agent assigns meaning and significance to feeling. The model applies the five-part Constructivist Semiotic Sign to emotion and adds four operations: interpretation, meaning, significance, and commitment. I describe the comparative trade study through which the model preserves contributions from appraisal theory, the Component Process Model, affective neuroscience, and the theory of constructed emotion; a thirteen-stage architecture in which prediction, perception, allostasis, and metaperception prepare emotional meaning without constituting it; and five executable specifications that check the model's internal consistency. I close with the objections the book anticipates and with what the model shares with its neighbors and adds.

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Abstract

Many theories of emotion treat physiological affect, conscious feeling, and emotion as stages of one continuous process. They then cannot explain why substantially the same feeling supports different emotions, and they leave no standard by which an emotion can be correct or mistaken. I present the Constructivist Semiotic Model of Emotions (CSME), which treats the three as non-substitutable constructs with distinct identity conditions. Affect is the physiological and regulatory substrate. Feeling is the conscious metaperceptual awareness of that substrate, which makes it available for interpretation without giving it meaning. Emotion is a goal-governed, context-sensitive semiotic interpretive act by which an agent assigns meaning and significance to feeling. The model applies the five-part Constructivist Semiotic Sign to emotion and adds four operations: interpretation, meaning, significance, and commitment. I describe the comparative trade study through which the model preserves contributions from appraisal theory, the Component Process Model, affective neuroscience, and the theory of constructed emotion; a thirteen-stage architecture in which prediction, perception, allostasis, and metaperception prepare emotional meaning without constituting it; and five executable specifications that check the model's internal consistency. I close with the objections the book anticipates and with what the model shares with its neighbors and adds.

Keywords: Constructivist Semiotic Model of Emotions; affect; feeling; emotion; metaperception; interpretation; commitment; semiotic availability; theory of constructed emotion; appraisal theory; Component Process Model; affective neuroscience; reappraisal; executable specification

Relation to the book. This paper restates, in new prose, the argument of Chapter 9 and Appendices G to J of *How to Design an Emotion: The Deconstruction and Computation of Emotional Meaning from First Principles* (Cézjah 2026, chap. 9, apps. G–J). The book's tables are summarized, not reproduced; a selection of its figures, excerpts of its C# programs, and their console input and output appear in the appendix to this paper. The computational implementation

is the subject of working paper 4. Every source cited here is cited in the book, with the same locators.

1. Introduction: The Missing Bridge

Walk alone at night and hear footsteps quicken behind you. Arousal climbs, and attention narrows. You feel tension and urgency, and you construct fear. Then you recognize a friend, and you construct relief. Your body barely changes between the two moments. Your meaning changes completely. Any theory of emotion has to say what changed.

The difficulty, as I see it, is architectural rather than empirical (Cézjah 2026, chap. 9). Many theories collapse affect, feeling, and emotion into stages of one continuum. Jaak Panksepp (1943–2017) treats affective systems as evolved causal substrates (Panksepp 2005); Antonio Damasio (b. 1944) traces feelings to their bodily and neural origins (Damasio and Carvalho 2013); Lisa Feldman Barrett models the whole episode as a constructive process of prediction and categorization (Barrett 2017); and appraisal theories derive emotion from the evaluation of an encounter (Lazarus 1991; Scherer 2009). Each contributes something indispensable. None marks the transition from physiological affect, to phenomenological feeling, to cognitive-semiotic emotion as a crossing between distinct kinds of state.

Two costs follow. The first is explanatory: if feeling already is emotion, the footsteps case is a puzzle, because one feeling has two meanings. The second is normative. If emotional meaning is the output of appraisal, prediction, or biology, nothing remains by which to judge an emotion correct or mistaken. The theory describes a process but cannot say when the process went wrong. I call this the loss of interpretive governance.

The book states four propositions that fix the problem in place: sensation is not feeling; feeling is not meaning; semiotic availability is not semantic achievement; and appraisal is not interpretation. Each marks an identity condition for a distinct kind of state. From them follow three objectives, which organize this paper: to fix the identity conditions that separate affect, feeling, and emotion (Section 3); to specify the bridge between availability and meaning (Section 4); and to restore interpretive governance by locating emotional meaning in an act an agent performs (Section 5). Section 2 describes how the model selects what it preserves. Sections 6 and 7 present the formal architecture and the executable checks. Sections 8 to 11 answer objections, state what is shared and new, mark the scope, and conclude.

2. Selecting What to Preserve: The Trade Study

The book does not choose a favorite theory. It runs a comparative trade study that evaluates candidates against one architectural standard and decides which contributions to keep (Cézjah 2026, chap. 9, apps. G–J). Eleven candidates enter: appraisal theories; the Component Process

Model (CPM); Conceptual Act Theory, now the theory of constructed emotion (TCE); psychological constructionism; affective neuroscience; predictive processing and active inference; functionalist and evolutionary theories; regulatory models; Basic Emotion Theory; dimensional models; and behaviorist and associative accounts (Cézjah 2026, app. G). Inclusion reflects architectural relevance, not endorsement.

One family of views stays outside the study by design. The phenomenological approaches of Edmund Husserl (1859–1938), Jean-Paul Sartre (1905–1980), and Maurice Merleau-Ponty (1908–1961) do not themselves propose computational or cognitive architectures of emotion, so they are not candidates (Føllesdal 1969; Sartre 1948; Dreyfus 2002). They still inform three distinctions the CSME keeps: the first-person givenness of experience, the structure of felt experience, and the difference between awareness before interpretation and meaning that interpretation constitutes (Zahavi 2002; Goldie 2002). Husserl's analyses of intentional consciousness, Sartre's account of emotion as lived experience, and Merleau-Ponty's phenomenology of embodiment each illuminate a part of emotional life that the model places inside its broader architecture. The exclusion is a matter of kind, not of merit: the study compares architectures, and these works are not offered as architectures.

The evaluation runs in a fixed order across four domains: definitional adequacy, analytic coherence, cognitive-semiotic adequacy, and computational adequacy (Cézjah 2026, app. H). The order is one of dependence. A theory that does not fix what emotion is offers no stable concept whose propositions can be judged; a theory without coherent propositions cannot be judged on how an agent constructs meaning; and a theory that does not explain construction has no architecture to execute. The definitional domain is therefore a gate, and failure there removes a candidate. Weights of 30, 20, 25, and 25 percent follow from that dependence and from the inquiry's focus on emotional meaning (Cézjah 2026, app. I). Seven candidates fail the gate (Cézjah 2026, app. J). Psychological constructionism comes closest, because it recognizes variability and rejects natural-kind realism, but it does not say which constituent fixes the identity of emotion. Basic Emotion Theory relies on biological classification, which cannot separate substrate, feeling, and emotion. Behaviorist accounts remove interpretation altogether.

Four candidates survive and receive weighted scores: affective neuroscience, scored for its feeling layer only, at 72.04; the CPM at 69.28; appraisal theories at 67.22; and the TCE, scored conditionally, at 54.04 (Cézjah 2026, chap. 9, table 9-1). The book states the limits plainly. One rater, the author, set the criteria, the weights, and the scores; no second rater has scored the candidates, so no reliability figure exists, and the book invites one. The study measures fit to the book's architectural criteria, not truth, and the CSME itself is not scored, because the criteria come from it. Under equal weights and under nine of twelve ten-point shifts between domains, the order holds; in the other three, each of which raises the cognitive-semiotic weight, the CPM moves

ahead of affective neuroscience. The TCE ranks last under every weighting. The study's practical use, deciding what to preserve, does not depend on the order at the top.

What each survivor contributes, and where each stops, is the substance of the study. From Barrett, the model keeps the central insight that agents construct emotional meaning rather than discover intrinsic emotional kinds (Barrett 2006; Barrett 2014). The TCE, however, assigns affect, feeling, categorization, prediction, and meaning to a single constructive process, so it cannot say which of them constructs the meaning. From appraisal theory, in the work of Richard S. Lazarus (1922–2002) and Ira J. Roseman (b. 1953), the model keeps the evaluation of personal significance, relevance, coping potential, and goal relations (Lazarus 1991; Roseman, Antoniou, and Jose 1996). Appraisal theory, however, treats appraisal itself as the process that produces emotion (Moors et al. 2013), without separating appraisal from interpretation. From Klaus R. Scherer (b. 1943), the model keeps the phase separation of appraisal, physiological change, expression, action readiness, and feeling (Scherer 2009; Scherer 2005). The CPM, however, distributes emotion across the sequence without fixing what the emotion is. From Panksepp, the model keeps the strongest account of the biological substrate (Panksepp 2005; Panksepp 2011), which does not, however, separate affect from feeling and from emotion.

3. Three Non-Substitutable Constructs

On that basis, the book fixes the identity conditions of its three constructs (Cézjah 2026, chap. 9).

Affect is the physiological and regulatory substrate that generates the conditions of feeling without itself being feeling or emotion. It comprises objective processes, including valence, arousal, and motivational intensity, that prepare the organism for adaptive action before awareness arises. The definition departs from Panksepp's usage, for whom affects are already experienced (Panksepp 2010). It gains partial support from the higher-order theory of Joseph E. LeDoux (b. 1949) and Richard Brown (b. 1971), which proposes conserved defensive survival circuits that are not directly responsible for subjective experiences of fear (LeDoux and Brown 2017), though those authors do not call the circuits affective.

Feeling is the conscious metaperceptual awareness of a semiotically available affective experience with a distinctive affective character. Feeling makes affect available to the agent as first-person experience. It neither generates affect nor assigns it meaning. The book preserves here the phenomenological insight that conscious experience has an irreducible first-person character (Zahavi 2002), and the separation that some theorists draw between nonconscious processes and their conscious experience (Lambie and Marcel 2002).

Emotion is a goal-governed, context-sensitive semiotic interpretive act by which an agent assigns meaning and significance to feeling. Emotion neither generates affect nor constitutes feeling; it

interprets feeling by organizing it under symbolic and contextual constraints. It therefore occupies a layer of its own.

The three constructs are non-substitutable: no account of emotional meaning is complete if one of them collapses into another. A broken hand illustrates the layering. The fracture produces tissue damage and two kinds of signal: an interoceptive signal that feeds affect, including the unpleasantness of pain, and a sensory signal that feeds a somatic state, classifying the body's condition as injury by location and intensity. Feeling joins the two and makes the condition consciously available. At that point I perceive my injured hand, but I have constructed no emotional meaning. Only when I consider what the injury means for my goals, a missed deadline or a canceled match, do I construct frustration, worry, or resignation.

An older puzzle yields to the same distinction. If a tree falls in a forest with no one around, does it make a sound? The question trades on an ambiguity: sound names both the pressure waves, which occur whether or not anyone is present, and the conscious experience of hearing, which requires a hearer. Pressure waves belong to the physical world, neural encoding to the nervous system, and hearing to awareness. Affect, feeling, and emotion divide in the same way, between the body, conscious awareness, and interpretation.

4. The Bridge: Availability Without Meaning

Feeling marks the threshold between physiology and interpretation (Cézjah 2026, chap. 9). It makes affect consciously available, and that availability is real, but availability does not amount to meaning. An agent can have the same or highly similar feelings and assign them different meanings under different goals, contexts, and interpretive constraints. Feeling supplies the object of interpretation without fixing what it means. The book names the two conditions: semiotic availability and semantic achievement. A feeling becomes eligible for meaning without becoming meaningful by default. It functions as sign-material, situated in context, that does not yet signify.

The footsteps case now has an answer. Affect raises arousal and narrows attention; feeling makes those changes available as tension and urgency; emotional meaning remains open. One agent interprets the feeling as fear, because an unknown person appears to threaten. Another, or the same agent a moment later, recognizes a trusted friend and interprets substantially the same feeling as relief. Affect and feeling barely change. The meaning differs. Feeling supplies availability; interpretation proposes meaning; commitment authorizes one interpretation as binding.

5. Governance: Intentionality, Interpretation, and Commitment

The bridge does not yet say why one interpretation, rather than another, becomes authoritative. The book answers by separating three notions (Cézjah 2026, chap. 9).

Contemporary philosophy commonly treats emotions as intentional states, directed at objects, situations, or states of affairs (Crane 1998; Goldie 2002). Intentionality explains what an emotion is about. It does not explain why one interpretation becomes binding.

Charles Sanders Peirce (1839–1914) located meaning within interpretation; on his account, "a word represents a thing to the conception in the mind of the hearer" (Peirce 1868, §9). Interpretation explains how an agent assigns meaning to feeling. By itself, however, interpretation leaves open several candidate meanings compatible with the same feeling.

Robert Brandom (b. 1950) explains how commitment confers normative authority within discursive practice (Brandom 2007). The CSME carries that insight into the affective domain. An agent first authorizes one interpretation of a feeling as emotionally binding, and only then does the interpretation become available for reasoning, communication, revision, or action. Emotional commitment, on this view, precedes public assertion.

The three notions divide the work. Intentionality explains the object of emotion; interpretation explains its construction; commitment explains its authority. Because commitment answers to goals and to the identity conditions of emotion concepts, an emotion can succeed or fail, be justified or mistaken, and be revised.

6. The Formal Architecture

6.1 The Sign and Its Operations

The CSME is a formal cognitive-semiotic architecture that specifies the constituents, relations, and constraints through which an agent constructs emotional meaning (Cézjah 2026, chap. 9). It applies the Constructivist Semiotic Sign (CSS) of working paper 2 to emotion (Cézjah 2026, chap. 7). The CSME specifies the abstract architecture; a CSS instantiates it in a particular episode. The constituents stay fixed while their values change.

The five constituents are these. The **interpreter** is the conscious, goal-directed agent who sets the governing goal, interprets, commits, and bears responsibility. The **identifier** is the detachable symbolic designation that marks which concept the interpreter has committed to. The **concept** is the intensional constraint structure that specifies the identity conditions of an admissible emotional construct. The **construct** is the realization of that concept in one episode. The **referent** is the situated object of interpretation: the affect and feeling the interpreter experiences in a particular context.

The constituents alone produce nothing. Meaning arises through four operations the interpreter performs. **Interpretation** construes the referent under conceptual, contextual, and goal-relative constraints and proposes candidate meanings. **Meaning** is the content that interpretation assigns to feeling. **Significance** is the goal-relative importance the interpreter assigns to that meaning:

meaning answers what the feeling means, and significance answers why it matters now. **Commitment** authorizes one interpretation as binding, which is what admits correctness, error, justification, and revision.

The book illustrates the split between concept and construct with love (Cézjah 2026, chap. 9, table 9-8). Taking Love as the governing concept, it traces how a candlelit dinner, a charged encounter, and a family scene with a child and a dog yield three constructs, Romance, Lust, and Attachment, as the agent interprets a felt state under different contextual and purposive constraints. The biochemical profiles in the illustration follow a well-known division of love into lust, attraction, and attachment (Cézjah 2026, chap. 9, n. 69). Biochemistry and context each constrain the emotion; neither determines it.

6.2 Thirteen Stages

The book integrates the constraints into one phase-ordered architecture of thirteen stages (Cézjah 2026, chap. 9, fig. 9-38). An external situation (1) is causally effective but semantically inert. Predictive simulation (2) anticipates outcomes and narrows the plausible interpretations (Friston 2010; Clark 2013), drawing on cached sign structures (3) from memory. Exteroceptive perception (4) organizes sensory input into a situational representation, which appraisal evaluates for its significance to the agent's goals; appraisal's output constrains interpretation without settling the emotion. Interoceptive signaling (5) reports the body's condition (Craig 2002), and allostatic activation (6) adjusts bodily resources in anticipation of demand (Sterling 2012). Through metaperception, these become feeling (7), the experiential referent of interpretation, though no emotion yet exists.

Stages 8 and 9 are one act decomposed for clarity. In the goal-governed interpretive act (8), the agent binds the felt state to an emotion concept under governing goals and contextual constraints; in interpretive evaluation (9), the agent judges which concept fits. The architecture then makes room for intervention. Interpretive delay (10) lets the agent pause before finalizing an interpretation (Gross 1998). Psychological reappraisal (11) revises contextual assumptions, or reinterprets the feeling by revising its conceptual framing or the governing goal. Reinterpretation (12) stabilizes the same bodily state under a different concept, as fear becomes relief. An updated external situation (13) feeds reappraisal and updates the parameters that shape future interpretations; it does not alter earlier ones retroactively. This is the architecture's learning mechanism.

The division of labor is exact. Computation constrains and prepares. Prediction biases salience, allostasis shapes readiness, and simulation retrieves prior structures. None of these decides what a feeling signifies. Meaning enters only when an agent interprets a semiotically available feeling relative to a governing goal. The cognitive system performs regulation, prediction, and perception; interpretation belongs to the agent.

7. Five Executable Specifications

The book states the architecture in Unified Modeling Language (UML) diagrams and checks it with five C# programs (Cézjah 2026, chap. 9). Each isolates one requirement and fails if its distinction is removed.

1. **Identity.** A simplified Fear concept stipulates two admissibility conditions: the context must be danger, and arousal must reach at least 6. The number is an illustration, not a psychological threshold. The program computes validity as the result of a test: an instance in danger at arousal 7 passes, and one in safety at arousal 3 fails. Identity depends on constraint satisfaction, not resemblance.
2. **Availability.** A feeling state, defined by context and arousal, can stop at semiotic availability or proceed to semantic achievement. Between the two runs nothing in the feeling changes; only the mode that stands in for interpretation differs.
3. **Governance.** A performer waits backstage at arousal 8. Under the goal of performing well, the stipulated rule supports excitement; under the goal of avoiding failure, it supports anxiety. A third run judges a candidate the goal does not support, and it fails. The program models the agent's judgment without performing it; on the book's view, a rational judgment is deterministic given the same goal and inputs, which is why a program can model it, but the judgment belongs to the agent.
4. **Phase separation.** A pipeline converts an external situation, footsteps behind, into a feeling state on a dark street at arousal 7, and then interprets that feeling under a goal: stay safe yields fear, and meet a friend yields relief. The event does not contain the meaning.
5. **Revisability.** Feeling and goal stay fixed while contextual knowledge changes. When the agent treats the other person as unknown, the interpretation is fear; when the agent recognizes a friend, it becomes relief. Because an agent constructs meaning, the agent can revise it when context warrants (compare Jamieson et al. 2018).

The book is explicit about what the programs can and cannot do. They encode the model's distinctions by design, so they check internal consistency, not truth, and they do not test the model against data. Their value is that each forces a distinction the architecture requires. Remove one, and the code can no longer state the claim that depends on it: identity dissolves into grouping, availability collapses into meaning, the body is mistaken for the interpreter, sequence collapses into simultaneity, or revision becomes impossible.

8. Objections and Replies

The book takes up the claims most open to dispute first (Cézjah 2026, chap. 9).

Objection 1: Phase separation splits what the theory of constructed emotion keeps whole on purpose. A reader who follows Barrett will object that the TCE models emotion as one brain-body event; it "proposes that emotions should be modeled holistically, as whole brain-body phenomena in context," and it proposes that even reappraisal works through prediction (Barrett 2017). I grant that prediction shapes what I feel and which meanings come to mind first. I keep the phases apart because they answer to different standards. A prediction succeeds when it reduces error about the body and the world. An interpretation succeeds when its construct meets the identity conditions of its concept under the goal the agent has adopted. An architecture that merges the phases can apply only one of those standards.

Objection 2: Primary-process affects already are emotional feelings. Panksepp holds that "Emotional feelings (affects) are intrinsic values that inform animals how they are faring in the quest to survive" (Panksepp 2010). LeDoux and Brown come closest from the other side: they move emotion out of subcortical circuits and into cognitive interpretation, yet they still identify the emotion with the conscious feeling, defining fear as "the conscious feeling one has when in danger" (LeDoux and Brown 2017). The reply to both is the footsteps case. Substantially the same feeling supports fear in one agent and relief in another, so the difference lies in what each agent makes of the feeling, not in the feeling.

Objection 3: Appraisal already checks events against goals, and reappraisal is already a regulation strategy. Both points are right. But in appraisal theory, appraisal values determine the emotion; on one proposal, "appraisal values are integrated in a pattern, which determines the emotion" (Moors et al. 2013, 122), and the goal is a variable against which the event is checked. In the CSME, the goal is also the standard to which the interpretation answers, and the agent's commitment makes one interpretation binding. Reappraisal revises one result. A rational agent can also redesign the interpretive architecture that produces such results, which is the practical program of working paper 6.

Objection 4: The scores reflect the author's own criteria. They do, and the book says so (Section 2). The trade study selects contributions to preserve; it does not rank theories by truth, and its practical use survives every weighting the book tested.

None of these departures is a rejection; each is a repair. From Barrett, the model keeps construction, concepts, prediction, and allostasis, which occupy Stages 2, 3, and 6. From Panksepp, Damasio, and LeDoux, it keeps the bodily substrate and the line between bodily processes and conscious feeling. From Lazarus and Scherer, it keeps the evaluation of goal relevance and the ordered phases of an episode. From work on emotion regulation, it keeps reappraisal, for which Stages 10 and 11 make room (Gross 1998).

9. What Is Shared and What Is New

The book places the CSME among construction theories (Cézjah 2026, chap. 9). Social constructionism holds that culture, language, and social relations shape emotions (Averill 2012; Harré 2009). Psychological construction, in the work of James A. Russell (b. 1947) and Barrett, holds that emotions are built from core affect and conceptual knowledge, with no dedicated circuit for each (Russell 2003; Barrett 2013), and a sociodynamic model adds that emotions unfold in interaction (Mesquita and Boiger 2014). The CSME shares those ingredients. It differs in holding affect, feeling, and emotion apart as distinct layers, in giving emotion concepts conditions a case can meet or fail, and in making the agent, who can revise and redesign, central.

The book's closing statement of novelty for the CSME is a single sentence: "I know of no other framework that separates physiological affect, feeling, and emotion as non-substitutable constructs; keeps prediction, perception, allostasis, and metaperception as the preparation of emotional meaning rather than its constitution; locates that meaning in an agent's interpretation and commitment under a goal adopted for the act, so that the same feeling can be reinterpreted as a different emotion and the agent can redesign the architecture that produces it; gives emotion concepts identity conditions that a construct can satisfy or fail; and states all of this in one architecture whose distinctions survive execution" (Cézjah 2026, chap. 9). Condensed into the book's usual form, the claim reads as follows.

What is shared: emotional meaning is constructed, not triggered, from bodily affect, prediction, appraisal, concepts, and context. What is new: affect, feeling, and emotion as non-substitutable constructs, with prediction, perception, allostasis, and metaperception preparing emotional meaning rather than constituting it, and that meaning located in an agent's interpretation and commitment under an adopted goal, governed by identity conditions a construct can meet or fail, in one architecture whose distinctions survive execution.

10. Scope and Limits

The CSME is an architecture of emotional meaning, not a neuroscientific model and not a measurement instrument. It specifies what an emotion must be to count as meaning and where meaning enters an episode; it leaves the neural and physiological detail of affect to the sciences that study it. Its trade study measures fit to the book's own criteria, with a single rater and no reliability figure. Its programs check internal consistency, not truth, and the thresholds and goal pairings they use are stipulated illustrations. Its stages are a logical order, not a claim about timing; in experience, the operations often occur rapidly and appear unified.

The paper also leaves three topics to companion papers. The executable implementation, the Constructivist Computational Model of Emotions, is the subject of working paper 4 (Cézjah 2026, app. K). The line between appraisal and interpretation, which this paper uses but does not draw in

detail, is the subject of working paper 5 (Cézjah 2026, app. L). And the symbolic conditions on which every identifier depends, and the question of which creatures meet them, are the subject of working paper 7 (Cézjah 2026, chaps. 10–12).

11. Conclusion

A racing heart before a hard conversation is real, and it is not yet an emotion. I argued that affect, feeling, and emotion are non-substitutable constructs: affect belongs to the body as a causal substrate, feeling belongs to consciousness as metaperceived awareness, and emotion belongs to interpretation as meaning achieved under constraint. Feeling makes affect available without giving it meaning. Interpretation proposes; commitment authorizes; and because commitment answers to goals and to identity conditions, an emotion can be correct, mistaken, or revised. The CSME states this as a sign with five constituents and four operations, a thirteen-stage architecture in which prediction and regulation prepare meaning without constituting it, and five programs whose distinctions fail if any is removed. Affect remains causal. Feeling remains experiential. Emotion remains interpretive. The agent remains responsible. The full argument appears in Chapter 9 and Appendices G to J of *How to Design an Emotion* (Cézjah 2026, chap. 9, apps. G–J).

Appendix: Code, UML Diagrams, and Input/Output

The figures below are the book's own diagrams in the Unified Modeling Language (UML), reproduced unchanged. The listings are excerpts from the book's C# companion projects, and the input/output blocks were captured by running those projects with the .NET 8 software development kit; I keep only the lines that bear on the argument. The full programs and the complete transcripts sit beside this paper in `code-samples/`. As in the book, the code checks the consistency of the architecture, not the truth of the theory. The diagrams and programs come from Chapter 9 (Cézjah 2026, chap. 9); the trade study of Appendices G to J is tabular and has no code.

A.1 The Phase-Ordered Architecture

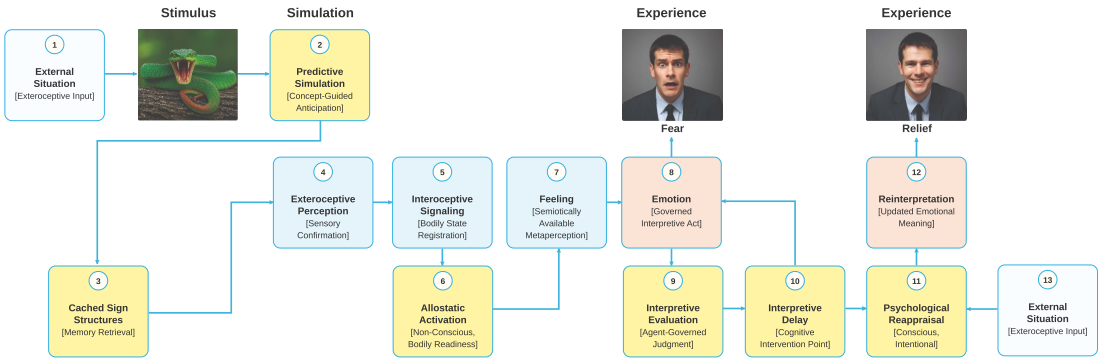


Figure 1. Metamorphosis of an emotion: simulation, bodily regulation, feeling, and interpretation in phase order (book Figure 9-38).

A.2 Availability Without Meaning (Project 2)

A feeling bound to a context is available for interpretation and still has no meaning (Section 4).

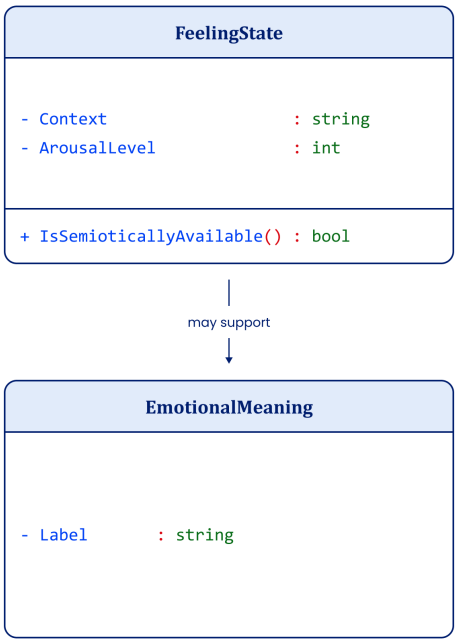


Figure 2. UML class diagram: a FeelingState that can support an EmotionalMeaning (book Figure 9-7).

Listing 1. Semiotic availability is a property of the feeling, not a meaning (code/chapter-09/project-2/Program.cs, lines 5–20)

```
public class FeelingState
{
    public string Context { get; }
    public int ArousalLevel { get; }

    public FeelingState(string context, int arousalLevel)
    {
        Context = context;
        ArousalLevel = arousalLevel;
    }

    public bool IsSemioticallyAvailable()
    {
        return !string.IsNullOrWhiteSpace(Context) && ArousalLevel > 0;
    }
}
```

Listing 2. Input/output: availability, then semantic achievement (code/chapter-09/project-2; captured with .NET 8)

```
$ dotnet run -- dark_garage 7 available
Feeling: Context=dark_garage, Arousal=7
Semiotic availability: true
Meaning: none
Result: Feeling is eligible for interpretation but not yet meaningful.

$ dotnet run -- dark_garage 7 fear
Feeling: Context=dark_garage, Arousal=7
Semiotic availability: true
Meaning: Fear
Result: Semantic achievement has occurred.
```

A.3 Goal-Governed Interpretation and Judgment (Project 3)

The same feeling in the same context yields different emotions under different goals, and the Interpreter judges an interpretation against its goal (Section 5).

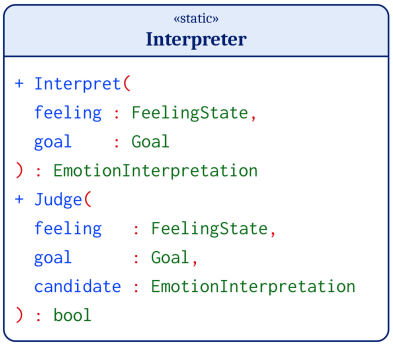


Figure 3. UML class diagram of the Interpreter, with Interpret and Judge (book Figure 9-14).

Listing 3. The goal is a prerequisite of interpretation (`code/chapter-09/project-3/Program.cs`, lines 56–73)

```
static string? Supported(FeelingState feeling, Goal goal)
{
    RequireGoal(goal);
    if (feeling.Context != RequiredContext || feeling.ArousalLevel < MinimumArousal)
        return null;

    return goal.Name switch
    {
        "perform_well" => "Excitement",
        "avoid_failure" => "Anxiety",
        _ => null
    };
}

public static EmotionInterpretation Interpret(FeelingState feeling, Goal goal)
{
    return new EmotionInterpretation(Supported(feeling, goal) ?? "Undetermined");
}
```

Listing 4. Input/output: one feeling, two goals (`code/chapter-09/project-3`; captured with .NET 8)

```
$ dotnet run -- backstage 8 perform_well
Feeling: Context=backstage, Arousal=8
Goal: perform_well
Emotion: Excitement
Result: SUCCESS - Excitement is the emotion the Goal perform_well supports.

$ dotnet run -- backstage 8 avoid_failure
Feeling: Context=backstage, Arousal=8
Goal: avoid_failure
Emotion: Anxiety
Result: SUCCESS - Anxiety is the emotion the Goal avoid_failure supports.
```

A.4 Phase Separation and Reinterpretation (Projects 4 and 5)

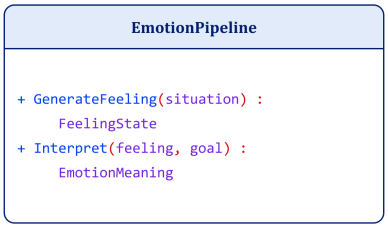


Figure 4. UML class diagram of the EmotionPipeline: feeling first, interpretation second (book Figure 9-24).

Listing 5. Input/output: situation, feeling, and emotion stay in separate phases (Project 4) (code/chapter-09/project-4**; captured with .NET 8)**

```
$ dotnet run -- footsteps_behind stay_safe
Situation: footsteps_behind
Feeling: Context=dark_street, Arousal=7
Goal: stay_safe
Emotion: Fear
Result: The execution flow preserves phase separation between situation, feeling, and
emotion.

$ dotnet run -- footsteps_behind meet_friend
Situation: footsteps_behind
Feeling: Context=dark_street, Arousal=7
Goal: meet_friend
Emotion: Relief
Result: The execution flow preserves phase separation between situation, feeling, and
emotion.
```

Listing 6. Input/output: the feeling holds constant while new knowledge revises the emotion (Project 5) (code/chapter-09/project-5**; captured with .NET 8)**

```
$ dotnet run -- dark_street 7 stay_safe unknown_person
Feeling: Context=dark_street, Arousal=7
Goal: stay_safe
Update: unknown_person
Emotion: Fear
Result: The same feeling is reinterpreted when contextual knowledge changes.

$ dotnet run -- dark_street 7 stay_safe recognized_friend
Feeling: Context=dark_street, Arousal=7
Goal: stay_safe
Update: recognized_friend
Emotion: Relief
Result: The same feeling is reinterpreted when contextual knowledge changes.
```

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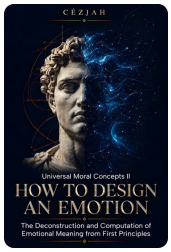
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KEYWORDS

Constructivist Semiotic Model of Emotions · affect · feeling · emotion · metaperception · interpretation · commitment · semiotic availability · theory of constructed emotion · appraisal theory · Component Process Model · affective neuroscience · reappraisal · executable specification



This paper restates, in new prose, the argument of Chapter 9 and Appendices G to J of *How to Design an Emotion* (Cézjah 2026, chap. 9, apps. G–J). The book is the full treatment.