AN ADULT FIELD GUIDE TO AUTOMATIC PROTECTION

THE FOUR GUARDIANS

Fight | Flight | Freeze | Fawn



THE ALARM CAN BE REAL
WITHOUT THE STORY BEING ACCURATE.

Recognition first. Choice second. Shame never.

PARTICIPANT WORKBOOK | SCIENCE EDITION

Read This First

This is a recognition workbook, not a diagnosis or a demand to control reflexes.

THE GOAL

You are not trying to prevent every automatic first reaction. You are learning to recognize when a protective state has taken the wheel before it makes a permanent decision during a temporary emergency.

THREE RULES OF SCIENTIFIC HONESTY

- Fight, flight, freezing, immobility, and collapse are studied defensive responses. They are not four personality types and do not occur in one fixed order.
- Fawn is useful everyday shorthand for appeasement, submission, compliance, or tending-and-befriending under perceived threat. It is not a DSM diagnosis and has no single known 'fawn circuit.'
- A reaction can be learned, automatic, and protective without proving that the current interpretation is accurate. The body event is real; the story still needs checking.

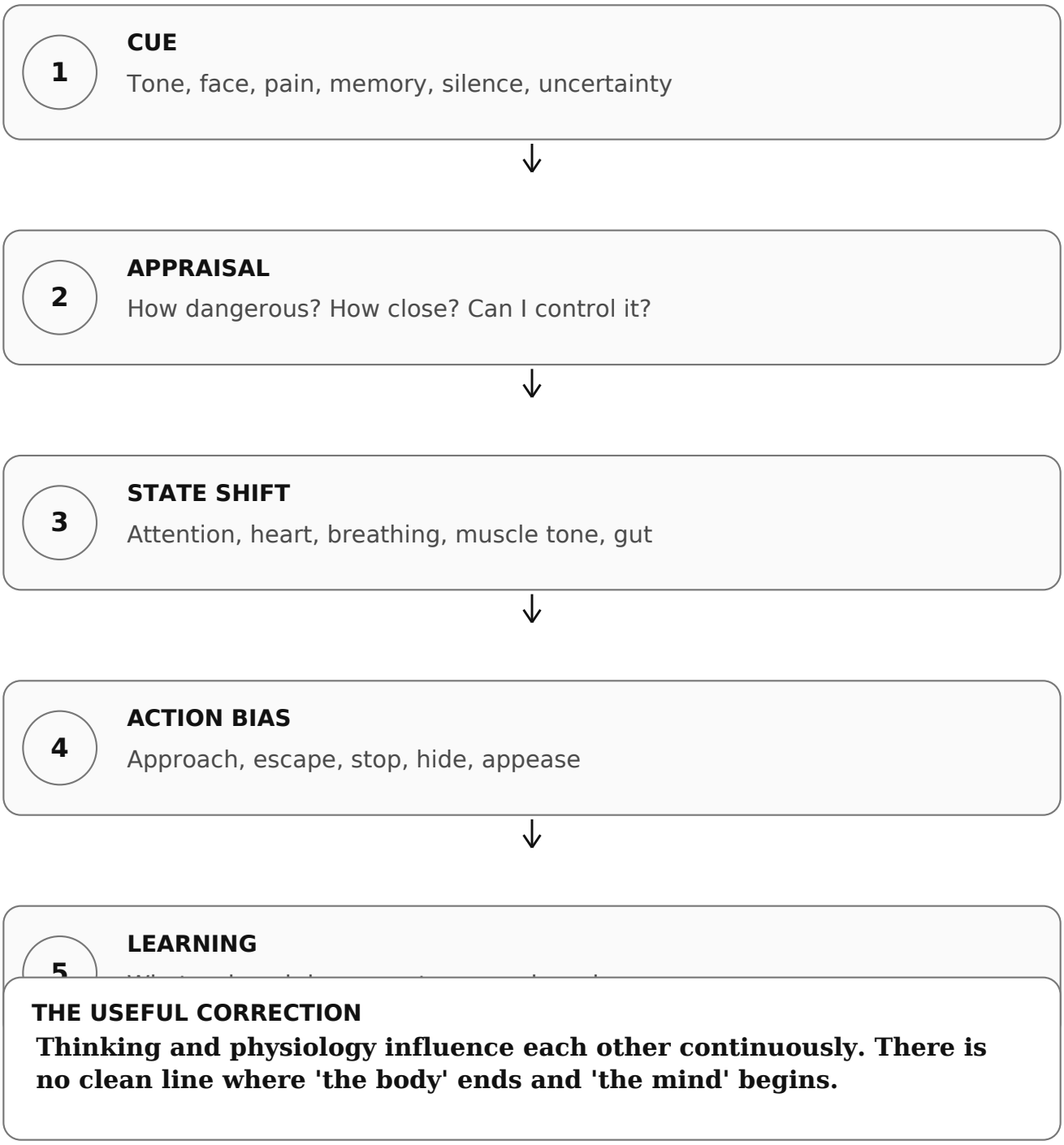
DO NOT USE THIS BOOK TO TALK YOURSELF OUT OF REAL DANGER

If someone threatens you, blocks your exit, follows you, controls resources, punishes boundaries, or repeatedly makes you feel unsafe, prioritize distance and outside support. Accuracy checking is for uncertainty - not for overriding evidence of danger.

Science base: Kozlowska et al. (2015); Roelofs (2017); Bailey et al. (2023). Full references: pp. 32-33.

What Happens Between Cue and Action

A response is a network event, not an amygdala hijacking cartoon.



THE USEFUL CORRECTION

Thinking and physiology influence each other continuously. There is no clean line where 'the body' ends and 'the mind' begins.

Sources [1], [3], [4], [5], [12].

The Brain Network Behind the Alarm

No single structure is the villain. These regions exchange information in milliseconds.

AMYGDALA

Tags biological relevance and learned threat; helps organize attention and defensive responses. It is not simply a 'fear button.'

PREFRONTAL CORTEX

Supports working memory, inhibition, flexible judgment, and future consequences. High uncontrollable stress can reduce its top-down effectiveness.

HIPPOCAMPUS

Adds context and memory: Is this here-and-now, or similar to something that happened before?

INSULA

Maps internal body signals and contributes to salience: What inside me needs attention right now?

HYPOTHALAMUS

Coordinates autonomic and endocrine responses, including the HPA axis.

PAG + BRAINSTEM

Help pattern defensive actions, pain modulation, arousal, stillness, and movement.

Better model: a shifting network that weighs threat, memory, body state, control, and available action - not a rational brain fighting a primitive brain.

Sources [3], [4], [5], [11].

The Autonomic Nervous System

Automatic body regulation changes the conditions under which choice must happen.

SYMPATHETIC PATHWAYS

Mobilize resources: heart output, blood pressure, sweating, pupil changes, glucose availability, and readiness for action. Norepinephrine is a common postganglionic messenger; the adrenal medulla releases epinephrine into blood.

PARASYMPATHETIC PATHWAYS

Support digestion, restoration, and organ regulation. Acetylcholine carries parasympathetic signals. Parasympathetic activity is not identical to safety, passivity, or calm.

WHY FREEZE CONFUSES PEOPLE

Freezing can combine high vigilance and sympathetic preparation with marked stillness and parasympathetic influence on heart rate. It may be 'ready stillness,' not relaxation. Tonic immobility, collapse, fainting, and dissociation are related but not interchangeable states and may appear later when escape or control feels unavailable.

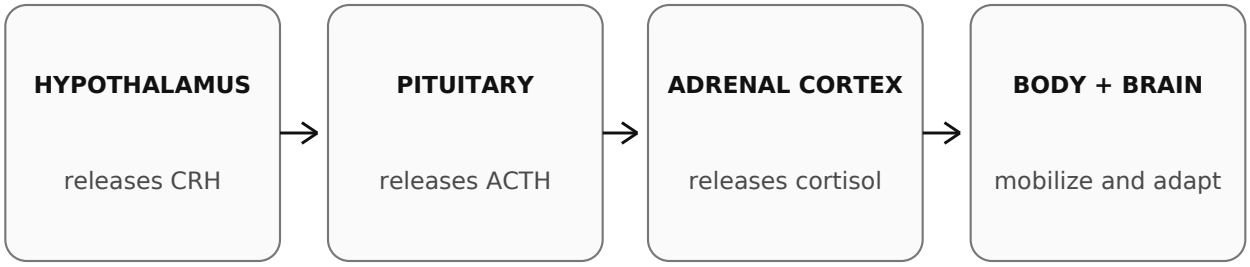
WHAT YOU MAY NOTICE

- Mobilization: heat, pulse, restless legs, jaw tension, scanning, urgent speech.
- Stillness: breath holding, reduced movement, fixed gaze, quiet voice, time distortion.
- Mixed state: internally racing while externally agreeable, blank, or motionless.

Sources [1], [2], [7].

The HPA Axis: The Slower Stress Wave

The endocrine response extends the alarm beyond the first burst of autonomic change.



CORTISOL IS NOT THE ENEMY

Cortisol helps make energy available, coordinates immune and cardiovascular changes, and supports adaptation. The issue is not 'having cortisol.' Timing, intensity, controllability, recovery, health, and repeated exposure all matter. Cortisol is not a reliable lie detector and one symptom cannot tell you your level.

WHY THE BODY CAN STAY ACTIVATED AFTER THE CONVERSATION

Fast sympathetic chemistry and slower endocrine feedback operate on different clocks. The interaction can leave shaking, fatigue, nausea, headache, pain amplification, brain fog, or delayed emotion after the social moment has ended. That aftermath does not prove the feared outcome was true; it shows that a biological response occurred.

Sources [4], [6], [10].

Chemical Messengers: The Fast Team

Neurotransmitter effects depend on receptor, location, dose, and timing.

NOREPINEPHRINE

Raises vigilance and signal-to-noise when well regulated. Under intense stress, excess release can weaken prefrontal working memory and flexible control.

EPINEPHRINE

Mostly acts as a circulating hormone from the adrenal medulla: mobilizes cardiovascular and metabolic resources for rapid action.

DOPAMINE

Supports salience, motivation, learning, and prefrontal working memory. Too little or too much prefrontal dopamine can impair performance.

ACETYLCHOLINE

Carries all autonomic preganglionic signals and most parasympathetic postganglionic signals. Also serves attention and learning inside the brain.

Sources [3], [6], [7], [9].

Chemical Messengers: Learning and Brakes

There is no single 'happy,' 'fear,' or 'calm' chemical.

GLUTAMATE

The brain's major excitatory transmitter. Essential to learning and plasticity, including the learning and updating of threat associations.

GABA

The brain's major inhibitory transmitter. Helps regulate circuit excitability; it is not one universal off switch and anxiety cannot be reduced to 'low GABA.'

SEROTONIN

Modulates mood, threat learning, behavioral inhibition, and many body functions through numerous receptor types. 'The happy chemical' is inaccurate.

CRH + ACTH + CORTISOL

A hormone signaling chain, not one neurotransmitter. It changes energy use and helps coordinate adaptation over a slower time course.

Sources [6], [8], [10], [13].

Why Logic Can Become Temporarily Unavailable

Stress does not erase intelligence; it changes access to cognitive resources.

THE PREFRONTAL PROBLEM

Acute uncontrollable stress can increase norepinephrine and dopamine in the prefrontal cortex beyond their most useful range. Working memory, inhibition, flexible thinking, and future-oriented judgment can become less reliable while faster habitual or emotionally learned responses gain influence.

WHAT THAT CAN FEEL LIKE

- I know this does not make sense, but I cannot stop trying to fix it.
- My mind went completely blank and I agreed before I understood the question.
- I can explain everyone else's feelings but cannot locate my own preference.
- The one urgent outcome becomes more visible than every later consequence.

THE PRACTICAL ANSWER

Do not demand better reasoning from the exact state that is reducing your access to reasoning. First interrupt the transaction. Create time, distance, written facts, and outside perspective. Then decide.

Sources [3], [9].

The Defense Cascade

Available action changes with threat distance, controllability, and prior learning.

1

ORIENT

What changed? Where is it?

2

FREEZE

Stop movement; gather information; prepare.

3

FLIGHT / FIGHT

Escape or actively remove the threat.

4

IMMOBILITY

When escape or resistance feels unavailable.

5

COLLAPSE / FAINT

A distinct late-stage pattern in some situations.

IMPORTANT
This is a model, not a mandatory staircase. People can skip, blend, repeat, or shift rapidly between responses. Appeasement may occur alongside any stage.

Sources [1], [2], [12].

The Four Guardians at a Glance

Name the action bias before arguing with the story.

FIGHT

ACTION BIAS

Move toward

COMMON MOVES

Control, confront, correct, overpower

MAY FEEL LIKE

Anger, heat, certainty

FLIGHT

ACTION BIAS

Move away

COMMON MOVES

Escape, hurry, avoid, overwork

MAY FEEL LIKE

Restlessness, urgency

FREEZE

ACTION BIAS

Stop / narrow

COMMON MOVES

Hold still, go blank, delay action

MAY FEEL LIKE

Numbness, fixed attention

FAWN

ACTION BIAS

Reduce social threat

COMMON MOVES

Agree, soothe, perform, surrender

MAY FEEL LIKE

False calm, lost preference

Your likely blend: FLIGHT changes the situation, FREEZE removes access to action, and FAWN changes you to make the other person safer.

Fight

The protector that tries to end danger through force, control, or confrontation.

WHAT IT IS

Fight mobilizes toward a perceived threat. It can defend a boundary, but under high activation it may treat disagreement, uncertainty, shame, or loss of control as something that must be defeated immediately.

BODY AND URGES

- Heat, jaw or fist tension, leaning forward
- Interrupting, correcting, pursuing
- Urgent certainty; reduced curiosity

THOUGHTS IT MAY PRODUCE

- They cannot be allowed to get away with this.
- If I explain harder, I can force resolution.
- I must act now.

AFTERWARD

- Adrenaline crash
- Regret about tone or escalation
- Continued argument rehearsal

BEST FIRST INTERRUPTION

STOP CONTACT. Release the motor charge safely: walk, push against a wall, shake out hands, then revisit facts after the urgency drops.

SCIENCE NOTE

Mobilization commonly recruits sympathetic, catecholamine, hypothalamic, and brainstem systems. It is not caused by one 'anger chemical.'

Sources [1], [3], [6].

Flight

The protector that tries to create safety by getting away or staying too busy to be caught.

WHAT IT IS

Flight biases movement away from danger. Obvious escape is only one version. Planning, overworking, compulsive problem-solving, scrolling, researching, or rapidly changing the subject can all function as distance.

BODY AND URGES

- Restless legs, pacing, shallow fast breath
- Scanning exits or next tasks
- Talking fast; sudden scheduling urgency

THOUGHTS IT MAY PRODUCE

- I need to leave or fix this immediately.
- If I keep moving, I will stay ahead of it.
- There is no time to slow down.

AFTERWARD

- Exhaustion and unfinished tasks
- Avoided message feels larger later
- Relief followed by dread

BEST FIRST INTERRUPTION

CREATE DELIBERATE DISTANCE. Move somewhere safe, then choose one contained next step instead of obeying every urgent task.

SCIENCE NOTE

Flight uses mobilization systems that increase readiness, circulation, attention, and energy availability. The response can occur before conscious fear is named.

Sources [1], [6], [7].

Freeze

The protector that pauses movement or access to action while the system evaluates threat.

WHAT IT IS

Freeze is not laziness or calm. It may be vigilant stillness, impaired speech, indecision, or a blank mind. Internally you may be highly activated while externally you look quiet, agreeable, or absent.

BODY AND URGES

- Fixed gaze, breath holding, cold or numb
- Voice disappears or becomes very small
- Cannot initiate the obvious next step

THOUGHTS IT MAY PRODUCE

- I do not know what to say.
- Maybe if I wait, this will pass.
- I cannot tell what is happening.

AFTERWARD

- Memory returns in pieces
- Delayed shaking, anger, or tears
- Self-blame for not acting

BEST FIRST INTERRUPTION

RESTORE ORIENTATION BEFORE LANGUAGE. Name five neutral facts, press feet or back into support, move eyes and head, then use a prepared sentence.

SCIENCE NOTE

Human freezing can combine stillness, enhanced environmental sampling, bradycardia, and preparation for action. Freeze, tonic immobility, collapse, and dissociation should not be treated as synonyms.

Sources [1], [2].

Fawn / Appeasement

The protector that reduces social threat by making the other person okay.

WHAT IT IS

Fawn describes appeasement under perceived threat: agree, soothe, praise, over-explain, take blame, perform closeness, or surrender a preference so anger, rejection, humiliation, or abandonment becomes less likely.

BODY AND URGES

- Automatic smile or soft voice
- Instant empathy for them; no access to you
- Nodding, explaining, offering more

THOUGHTS IT MAY PRODUCE

- Their distress is now my emergency.
- A no will make me cruel or unsafe.
- If they are okay, I can be okay.

AFTERWARD

- Resentment, depletion, confusion
- A yes that later feels unreal
- Replaying what you meant to say

BEST FIRST INTERRUPTION

NO DECISION. Use the delay script, end the live conversation, recover your preference privately, and answer later in writing.

SCIENCE NOTE

Appeasement and submission are discussed in trauma, coercion, and social-defense literature, but 'fawn' is not a formal diagnosis and there is no validated single fawn biomarker or circuit.

Sources [14], [15].

How Your Three Can Chain Together

Flight, freeze, and fawn may be one sequence rather than three separate problems.

FREEZE -> FAWN	Words disappear; agreement becomes the fastest available exit.
FAWN -> FLIGHT	You soothe first, then escape, avoid, overwork, or disappear.
FLIGHT -> FREEZE	Urgent action overloads the system; initiation then collapses.
FREEZE -> FLIGHT	Stillness breaks into sudden leaving, fixing, or frantic motion.
FAWN -> RESENTMENT	Compliance reduces immediate threat but creates a later boundary debt.

THE QUESTION THAT WORKS

Not 'Which one am I?' Ask: What happened first, what action became urgent, and what did that action make easier for the next sixty seconds?

Identify It in Real Time

Use four channels. Emotion alone is often too late or too vague.

1. BODY

What changed first? Heat, cold, gaze, voice, breath, gut, hands, movement, numbness.

2. ATTENTION

What disappeared? Options, time, context, consequences, your own needs, evidence against the fear.

3. URGE

What action promises immediate relief? Leave, fix, freeze, agree, explain, attack, hide.

4. PREFERENCE

Can you still feel what you want? If not, choice is currently compromised.

If I cannot feel my own preference, I am not ready to decide.

My Earliest Signals

Do not wait for a full override. Find the first five-percent change.

MY VOICE CHANGES BY...

MY EYES / ATTENTION CHANGE BY...

MY HANDS, JAW, CHEST, OR STOMACH CHANGE BY...

THE FIRST URGENT THOUGHT IS USUALLY...

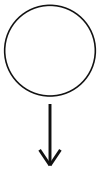
THE BEHAVIOR THAT CREATES INSTANT RELIEF IS...

THE CLUE I ONLY NOTICE AFTERWARD IS...

Recognition after the event still counts. That is how the brain builds the pattern map that eventually becomes recognition during the event.

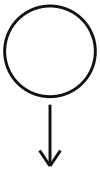
The Fawn Override

Why appeasement can overrule logic even when the feared story is inflated.



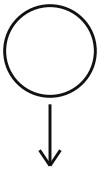
CUE

Disappointment, tension, silence, authority, anger, need



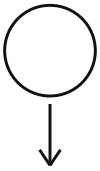
PREDICTION

No will cause danger, rejection, punishment, or unbearable guilt



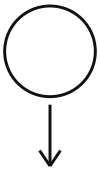
OVERRIDE

Their state becomes more important than your evidence or preference



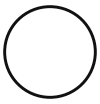
APPEASE

Agree, soothe, explain, take blame, offer resources, perform closeness



RELIEF

Immediate social pressure drops



AFTERMATH

Resentment, shame, exhaustion, confusion, boundary debt

The relief reinforces the strategy. That does not mean you chose it freely; it explains why the pathway becomes fast.

Sources [3], [5], [14], [15].

Fawn Is Not Kindness

The outside behavior can look identical. The internal freedom is different.

CHOSEN CARE

- I can feel both their needs and mine.
- No remains available without catastrophe.
- I have time to consider cost and capacity.
- My yes still feels true after distance and sleep.
- Care does not require self-erasure.

PROTECTIVE APPEASEMENT

- Their emotion becomes my emergency.
- No feels dangerous, cruel, or impossible.
- I rush before I can calculate the cost.
- Relief arrives immediately; resentment comes later.
- I perform agreement while my preference disappears.

THE CONSENT TEST

Would I still choose this if the other person were calm, unable to punish me, and not watching my face? Would I choose it tomorrow, in writing, after checking my resources?

Compliance can stop pressure. That does not automatically make it free agreement.

Trauma, Harm, Conflict, or Self-Abandonment?

You do not need a courtroom verdict to respond wisely, but the distinctions protect you from both denial and over-assignment.

POTENTIALLY TRAUMATIC THREAT

Actual or threatened death, serious injury, or sexual violence fits the core DSM-5 PTSD exposure definition. Coercive control and repeated danger also deserve specialized safety assessment even when you are unsure what label applies.

HARM OR BOUNDARY VIOLATION

Pressure, humiliation, retaliation, manipulation, repeated disregard, or unwanted contact may be harmful without you needing to prove a PTSD-level trauma.

ORDINARY CONFLICT / DISAPPOINTMENT

Another person can dislike your boundary, misunderstand you, or have needs that conflict with yours without either person being abusive.

SELF-ABANDONMENT

Your spoken yes contradicts your internal no, even though the other person did not pressure, threaten, manipulate, or reasonably know. The injury is real; repair begins by correcting the answer rather than silently building a case against them.

The word trauma is not the only permission slip for taking pain, pressure, or lost choice seriously.

Sources [16], [17], [18].

What Kind of Yes Was It?

Look at freedom, pressure, available options, and what happened when you corrected course.

CHOSEN YES Preference intact; enough time; no meaningful penalty for no; remains true later.	**Follow through or renegotiate honestly.**
FAWN YES / SAFE RECIPIENT You felt trapped internally, but they did not pressure and could reasonably believe your words.	**Correct the yes; own the mismatch. Watch whether they respect the correction.**
PRESSURED YES Repeated asking, guilt, sulking, anger, urgency, punishment, authority, or resource leverage narrowed choice.	**Name the pressure; increase distance; do not carry all responsibility for the outcome.**
COERCED / UNSAFE YES Threats, intimidation, blocked exit, stalking, forced contact, control, or credible fear of harm.	**Prioritize safety and outside help. Compliance under coercion is not free agreement.**
MIXED Your fawn pattern was active and the other person also behaved poorly or exploitatively.	**Hold both truths. Your pattern does not excuse their conduct; their conduct does not erase your work.**

Delayed anger is data: a boundary may have been crossed, abandoned, or both. It is not yet a verdict about intent.

Sources [14], [16], [17].

Responsibility Without Self-Prosecution

Two nervous systems can contribute to one painful interaction. Responsibility is behavioral, not all-or-nothing.

YOUR RESPONSIBILITY

- Notice when preference disappears.
- Delay answers you cannot freely make.
- Correct a false yes as soon as you can.
- Communicate the actual boundary.
- Repair concrete impact where appropriate.
- Do not make silent resentment do the job of a spoken correction.

THEIR RESPONSIBILITY

- Accept no and changed answers.
- Avoid punishment, pressure, and leverage.
- Notice obvious freezing, withdrawal, or distress.
- Clarify when agreement seems uncertain.
- Respect pauses and physical distance.
- Repair coercive, controlling, or boundary-violating behavior.

THE SENTENCE IN THE MIDDLE

You may have reasonably understood my yes as agreement. I answered automatically and did not communicate my actual limit. I am correcting it now. I can own the mismatch without agreeing to continue.

Accountability is not: 'Everything is my fault because I said yes.' It is: 'I will make my words more accurate, and I will judge the relationship by how correction is received.'

Repairing a Fawn Yes

The goal is accurate communication, not earning permission to change your mind.

CORRECT IT

I answered too quickly. My actual answer is no.

CHANGE A COMMITMENT

I agreed, but I cannot sustain this. I need to change the plan to _____.

OWN THE MISMATCH

My words said yes while my internal answer was no. You could not fully know that. I am making it clear now.

TEST FOR SAFETY

I need time before answering. Please do not ask me again today.

NAME PRESSURE

I have asked for time. Repeating the request is pressure. I am ending this conversation.

REPAIR IMPACT

My delayed correction affects you. I am willing to discuss that impact, but I am not reversing the boundary.

A safe person may be disappointed. The test is not whether they love the boundary; it is whether they respect your right to make it.

Accuracy Check

Run this only after immediate safety and enough state change to think.

1. WHAT OBSERVABLE FACT TRIGGERED THE ALARM?

2. WHAT MEANING DID MY NERVOUS SYSTEM ADD?

3. WHAT EVIDENCE SUPPORTS THAT MEANING? WHAT EVIDENCE DOES NOT?

4. WHAT AM I PREDICTING WILL HAPPEN IF I DO NOT APPEASE, ESCAPE, OR DISAPPEAR?

5. IS THIS PERSON DISTRESSED, DISAPPOINTED, UNSAFE, OR ACTUALLY DANGEROUS? THOSE ARE NOT THE SAME.

6. WHAT WOULD I ADVISE SOMEONE I CARE ABOUT IF THEY DESCRIBED THIS EXACT INTERACTION?

Accuracy checking is not a vote against your body. It is the evidence review your body could not perform at alarm speed.

Matched Ways Back

The goal is usable choice - not performing calm.

IF MOBILIZED

Walk with purpose; push hands into a wall; loosen jaw; use cool water; stop messaging; widen visual attention.

IF FROZEN

Name neutral facts; press into support; look left and right; make one small movement; read a prepared sentence.

IF FAWNING

Stop the transaction; break eye contact if helpful; use the delay script; leave; recover preference in private.

IF FLOATY / FAR AWAY

Use date, place, and time; textured object; temperature; food or water if appropriate; contact a safe person.

IF BREATH HELPS

Let the exhale lengthen gently. Do not force deep breathing if it increases dizziness,

A useful tool should increase orientation, agency, and available options. If a technique makes you feel trapped or worse, stop using it.

My Decision Firewall

Fawn may protect the room. It does not get to sign for your future.

WHEN I NOTICE APPEASEMENT, THE DECISION STOPS.

Safety first. Accuracy later. Decisions last.

NO LIVE YES TO

- Money, loans, purchases, gifts, or taking on someone else's obligation
- Staffing, scheduling, unpaid labor, or surrendering protected recovery time
- Blame, confessions, promises, or major relationship decisions
- Physical contact, sex, access to my body, home, children, records, or private information

DEFAULT SENTENCE

I am not able to make a clear decision in this conversation. I will think privately, review the facts, and respond in writing after _____.

If the pause is punished, that is information about the relationship - not proof that the pause was wrong.

The Boundary Ladder

A boundary is complete when your behavior protects it - not when the other person agrees.

1. NOTICE My preference vanished or my body said no.

2. DELAY I am not deciding this live.

3. DISTANCE End the call, leave the room, stop the messages.

4. RECOVER Find the preference that exists without their reaction.

5. STATE Say the boundary once, plainly.

6. WATCH Do they respect choice, or punish and pressure?

7. PROTECT Increase distance and support when the answer is pressure.

If someone repeatedly ignores a boundary, corners you, follows you, threatens you, or blocks your exit: stop explaining. Increase distance, involve outside support, and use a safety plan.

After-Action Map

Study the sequence without turning it into a prosecution of yourself.

THE FIRST OBSERVABLE CUE WAS...

MY FIRST BODY CHANGE WAS...

MY ACTION URGE WAS...

WHAT I DID FOR IMMEDIATE SAFETY OR RELIEF WAS...

WHAT THE RESPONSE PROTECTED ME FROM WAS...

THE LATER COST WAS...

THE EARLIEST INTERRUPTION AVAILABLE NEXT TIME IS

Measure earlier noticing, not perfect behavior. Five seconds sooner is nervous-system learning.

Fourteen Days of Recognition

One tiny observation per day. No forced exposure and no grading.

DAY 1	Notice one after-effect.	**DAY 8**	Notice a five-percent shift.
DAY 2	Name one body cue.	**DAY 9**	Create distance sooner.
DAY 3	Name the action urge.	**DAY 10**	Recover one private preference.
DAY 4	Spot preference loss.	**DAY 11**	Check fact versus prediction.
DAY 5	Name the predicted danger.	**DAY 12**	Give one written answer.
DAY 6	Use one delay sentence.	**DAY 13**	Protect one small boundary.
DAY 7	Review without blame.	**DAY 14**	Name what changed.

The progression is: noticed after -> noticed during -> paused before. All three are success.

When to Bring in More Support

Automatic protection is human. You deserve help when it repeatedly removes safety or choice.

CONSIDER A LICENSED TRAUMA-INFORMED CLINICIAN WHEN

- Dissociation, memory gaps, panic, collapse, or appeasement repeatedly disrupt work, parenting, health care, sleep, relationships, or physical safety.
- You cannot safely practice boundaries because another person retaliates, controls resources, monitors you, threatens you, or blocks your movement.
- Reflection causes prolonged flooding, self-harm urges, inability to function, or a level of distress you cannot bring down with ordinary support.
- You want treatment tailored to trauma history, ADHD, grief, chronic pain, medication, relationship conditions, and current health rather than a generic regulation script.

WHAT THIS WORKBOOK CANNOT DO

It cannot diagnose PTSD, panic disorder, dissociation, autonomic dysfunction, or any neurotransmitter imbalance. It cannot determine whether a relationship is safe. It cannot replace medical evaluation for fainting, chest pain, new neurologic symptoms, breathing difficulty, or other urgent physical symptoms.

IMMEDIATE HELP IN THE UNITED STATES

Call or text 988 for crisis support. For relationship abuse or coercive control, contact the National Domestic Violence Hotline: 800-799-SAFE or thehotline.org. Call 911 for immediate danger.

Scientific References I

Peer-reviewed reviews and U.S. government medical resources.

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Scientific References II

The language in this workbook is educational and deliberately avoids biomarker claims.

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Revision date: August 2026. Educational use only. No page in this workbook establishes a diagnosis or predicts individual neurochemistry.