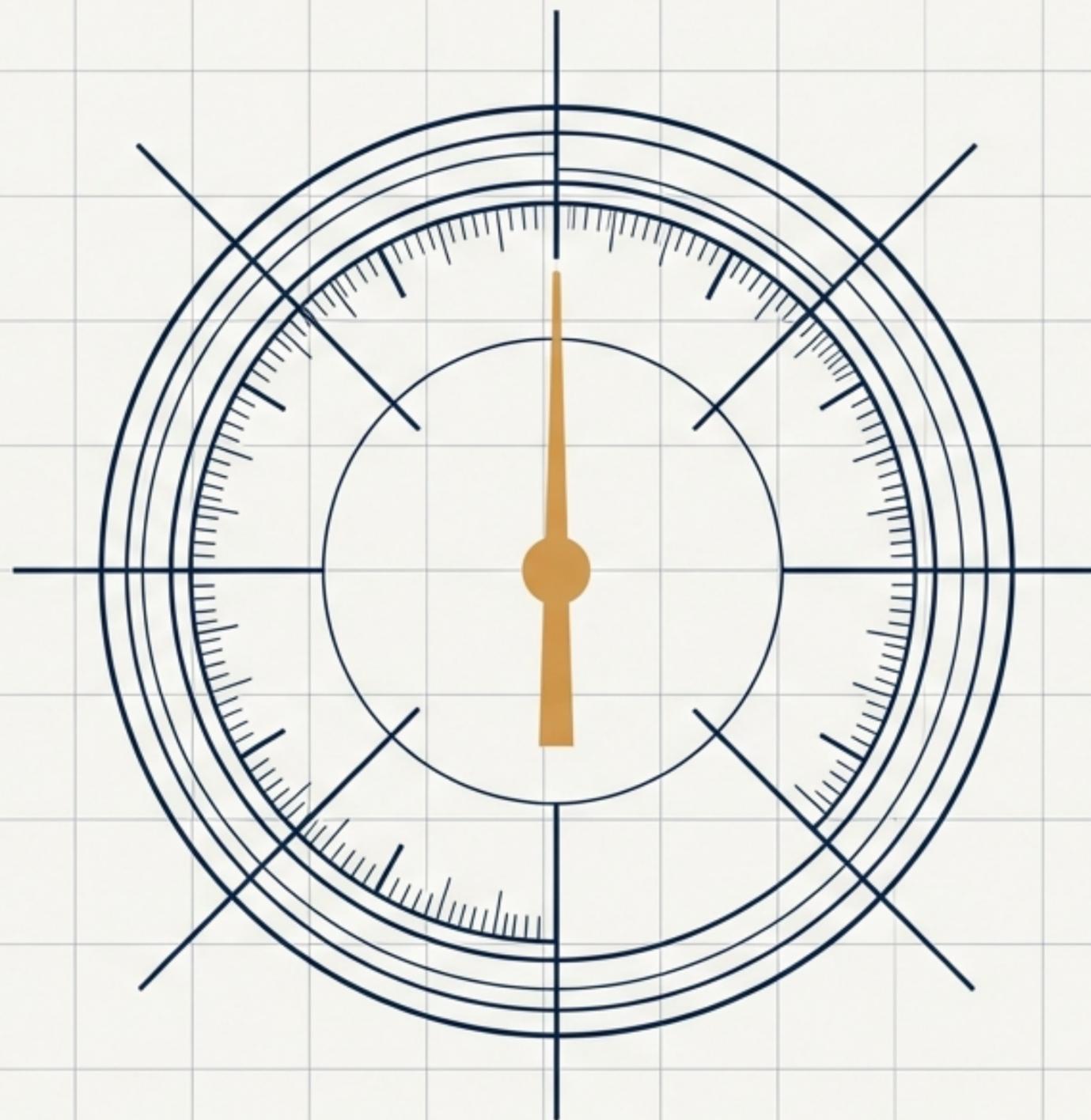


The Calibrated Instrument

Resolving False Positives and
Negatives in Human Care Licensing



The Inefficiency of Human Assessment



The Provider Burden: False Positives

Citing compliant facilities for low-risk violations disproportionately harms service providers, driving up unfair liability insurance costs and straining operations.

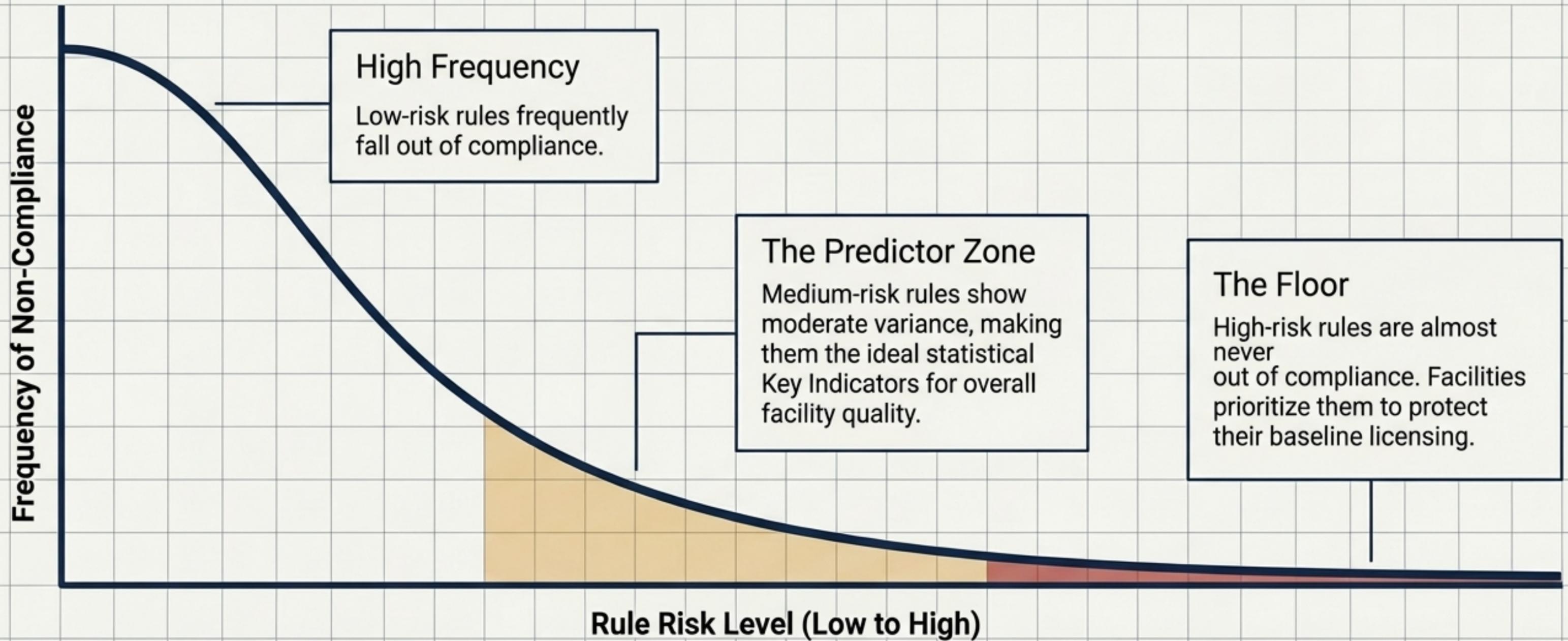


The Client Danger: False Negatives

Failing to cite actual non-compliance in low-performing facilities puts clients in physically unsafe conditions, causing undetected injuries and catastrophic risks for the insurance industry.

Takeaway: Human assessors naturally drift toward one of these two errors. The system requires mathematical calibration.

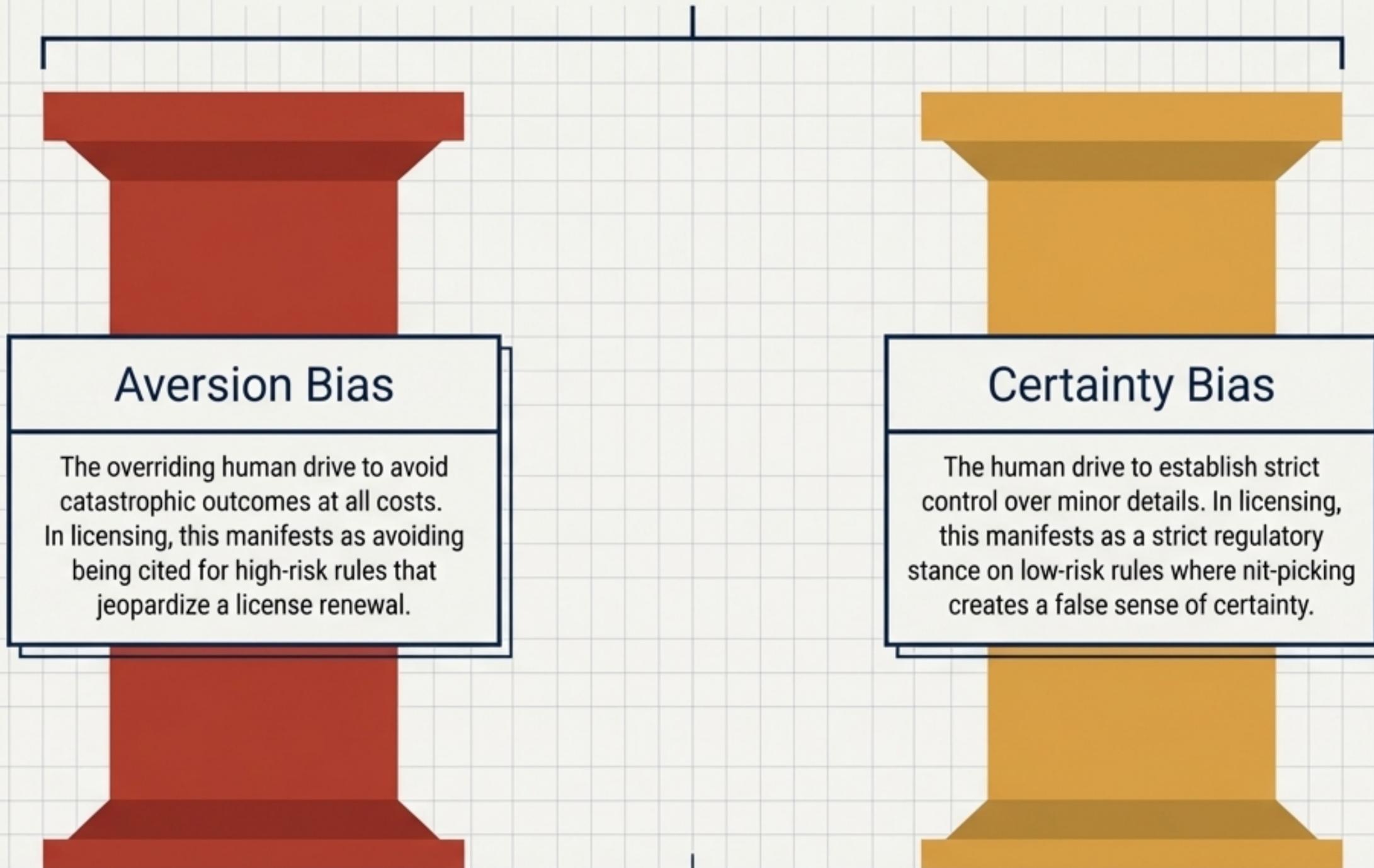
The Regulatory Compliance Gravity Curve



"High risk rules being out of compliance is generally not the case; but with low-risk rules this is where a higher rate of non-compliance will be found." (Fiene, 2024)

The Psychology of Compliance

Prospect Theory: The root cause of regulatory variance



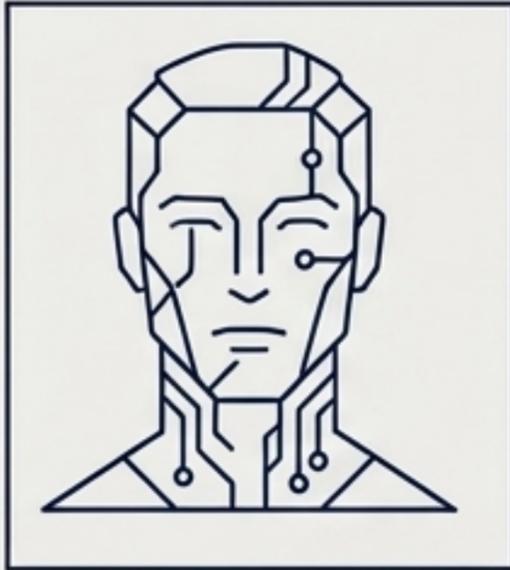
Aversion Bias

The overriding human drive to avoid catastrophic outcomes at all costs. In licensing, this manifests as avoiding being cited for high-risk rules that jeopardize a license renewal.

Certainty Bias

The human drive to establish strict control over minor details. In licensing, this manifests as a strict regulatory stance on low-risk rules where nit-picking creates a false sense of certainty.

Two Profiles of Assessor Drift

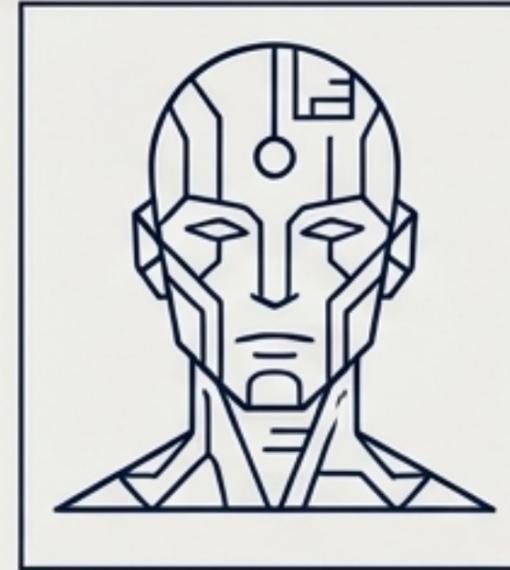


Profile 1: The Lenient Assessor

Psychological Driver: Aversion.

Behavior: They hesitate to cite major rule violations because the consequences for the facility are severe. This psychological hesitation creates undetected, critical dangers.

System Output: False Negatives.



Profile 2: The Stringent Assessor

Psychological Driver: Certainty.

Behavior: They over-focus on minor rule violations to prove diligence and maintain strict control. This psychological overcompensation creates unnecessary regulatory burden.

System Output: False Positives.

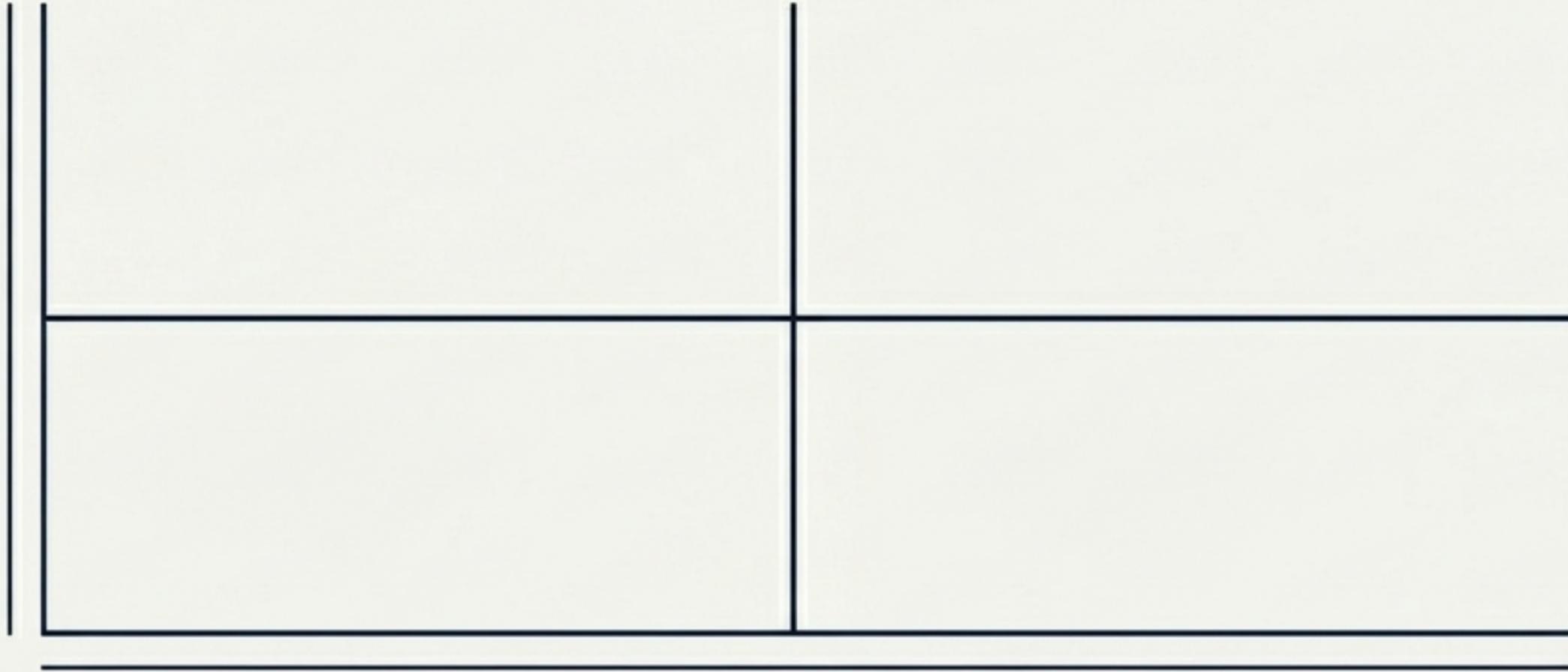
Diagnostic Matrix: Bias and Systemic Impact

	The False Positive	The False Negative
Assessor Bias	Certainty (Seeking control)	Aversion (Avoiding conflict)
Assessor Behavior	Stringent / Nit-picking	Lenient / Hesitant
Target Rules	Low-Risk Regulations	High-Risk Regulations
Harmed Stakeholder	Providers and Facilities	Clients and Insurance Carriers
Real-World Consequence	Unfair Liability Insurance Costs	Unsafe Conditions and Physical Injuries

Designing a Diagnostic Instrument

Vertical Axis: Actual Overall Reality

The Ground Truth: Is the facility actually in a High compliant state or Low compliant state?



Horizontal Axis: Individual Observation

The Assessor's View: Did the assessor mark the individual rule In or Out of compliance?

Takeaway: Every regulatory action exists at the intersection of human observation (the horizontal) and objective reality (the vertical).

Mapping System Alignment

Vertical Axis: Actual Overall Reality

The Ground Truth: Is the facility actually in a High compliant state or Low compliant state?

True Positive Assessor observes the rule is IN compliance. Reality: The facility is HIGHLY compliant.	
	True Negative Assessor observes the rule is OUT of compliance. Reality: The facility is in a LOW compliant state.

Horizontal Axis: Individual Observation

The Assessor's View: Did the assessor mark the individual rule In or Out of compliance?

Context Note: When the system operates in these quadrants, licensing decisions are accurate. The goal of the algorithm is to maximize these outcomes.

Defining the Friction Zones

Vertical Axis: Actual Overall Reality.
The Ground Truth: Is the facility actually in a
actually in a High compliant state or Low compliant state?

		False Positive Observation: OUT. Reality: HIGH Compliance. (The Stringent Assessor nit-picking compliant facilities).
False Negative Observation: IN. Reality: LOW Compliance. (The Lenient Assessor missing violations in dangerous facilities. The most disturbing outcome.)		

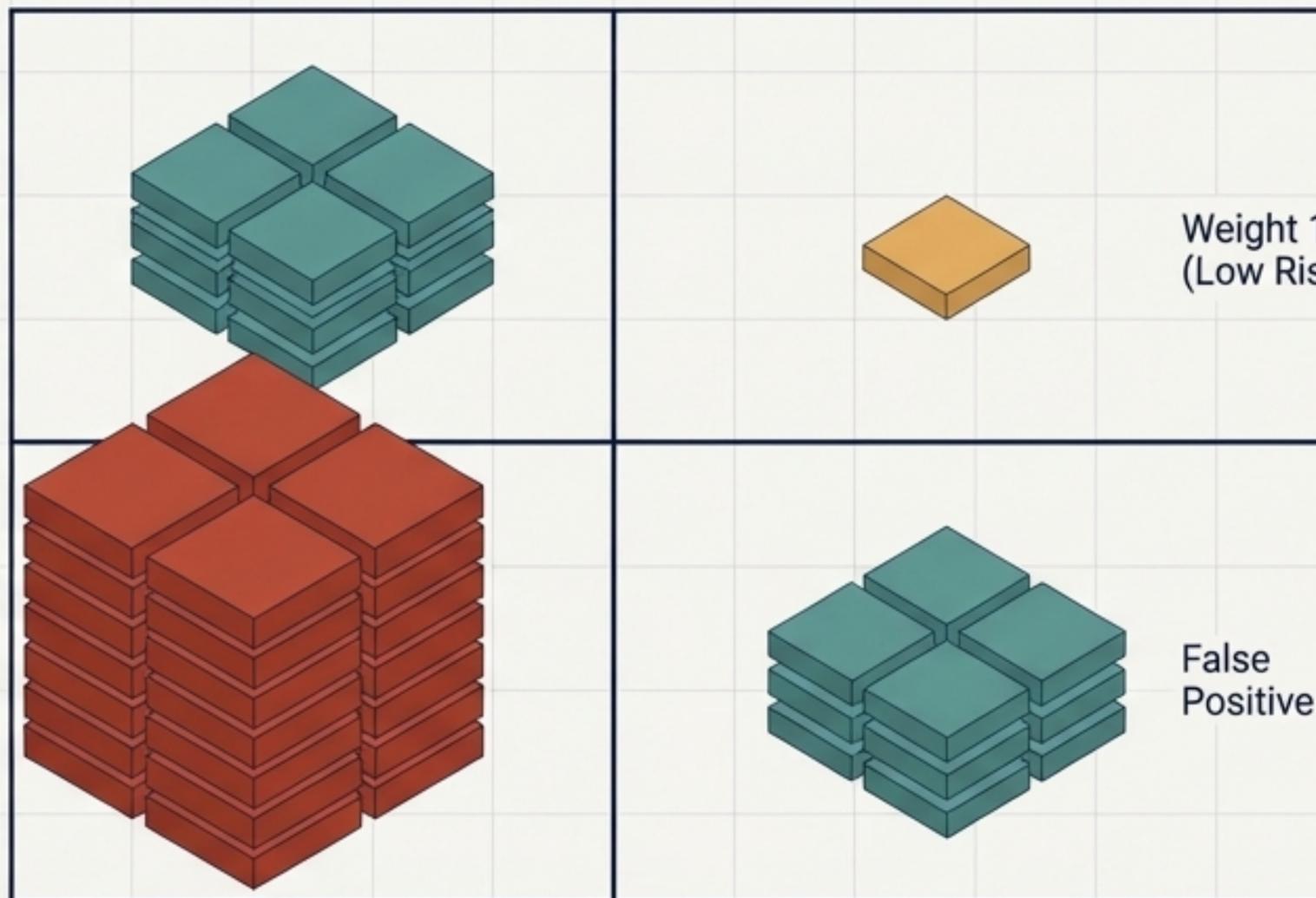
Horizontal Axis: Individual Observation.
The Assessor's View: Did the assessor mark the individual rule In or Out of compliance?

Assigning Mathematical Gravity

The Ground Truth:
Is the facility actually in
a High compliant state
or Low compliant state?

Weight 8
(High Risk /
Catastrophic)

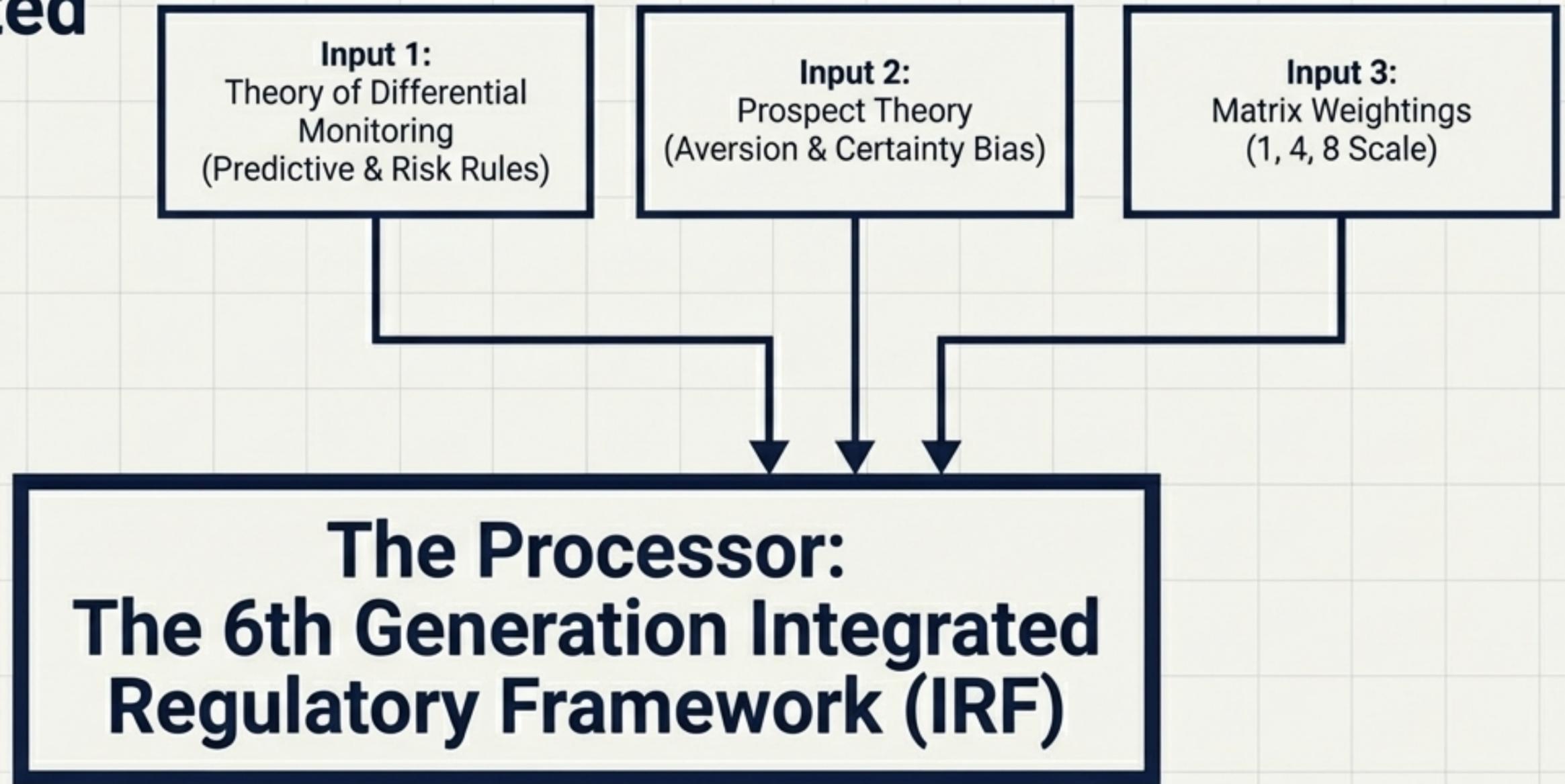
Vertical Axis: Actual Overall Reality.
The Ground Truth: Is state or Low compliant state?



Horizontal Axis: Individual Observation.
The Assessor's View: Did the assessor mark the individual rule
In or Out of compliance?

Takeaway: False negatives are weighted at 8x the gravity of false positives because failing to detect an unsafe reality directly results in physical injury.

The Integrated Regulatory Engine



Takeaway: The algorithm is not just math; it is a customized antidote designed to neutralize the psychological and statistical biases flowing into the licensing system.

The IRF Algorithm Deconstructed

The Master Equation

$$\text{IRF} = (\text{FC} = .50+) + (\text{F-} = 0) + (\text{F+} = \text{wgt1} \times 3)$$



Dial 1: The Predictability Dial
(FC = .50+)

Maximizes specific rule predictability using the Fiene Coefficient.



Dial 2: The Safety Dial
(F- = 0)

Eliminates catastrophic human safety errors.



Dial 3: The Fairness Dial
(F+ = wgt1 x 3)

Decreases unfair provider penalization to a manageable number.

Maximizing Predictability, Mandating Safety

The Fiene Coefficient

$$FC \geq .50$$

Formula:

$$\frac{(\text{true+})(\text{true-}) - (\text{false+})(\text{false-})}{\text{sqrt}(\text{sums of true and false})}$$

Meaning: Only rules that mathematically predict overall facility quality are utilized as primary indicators.

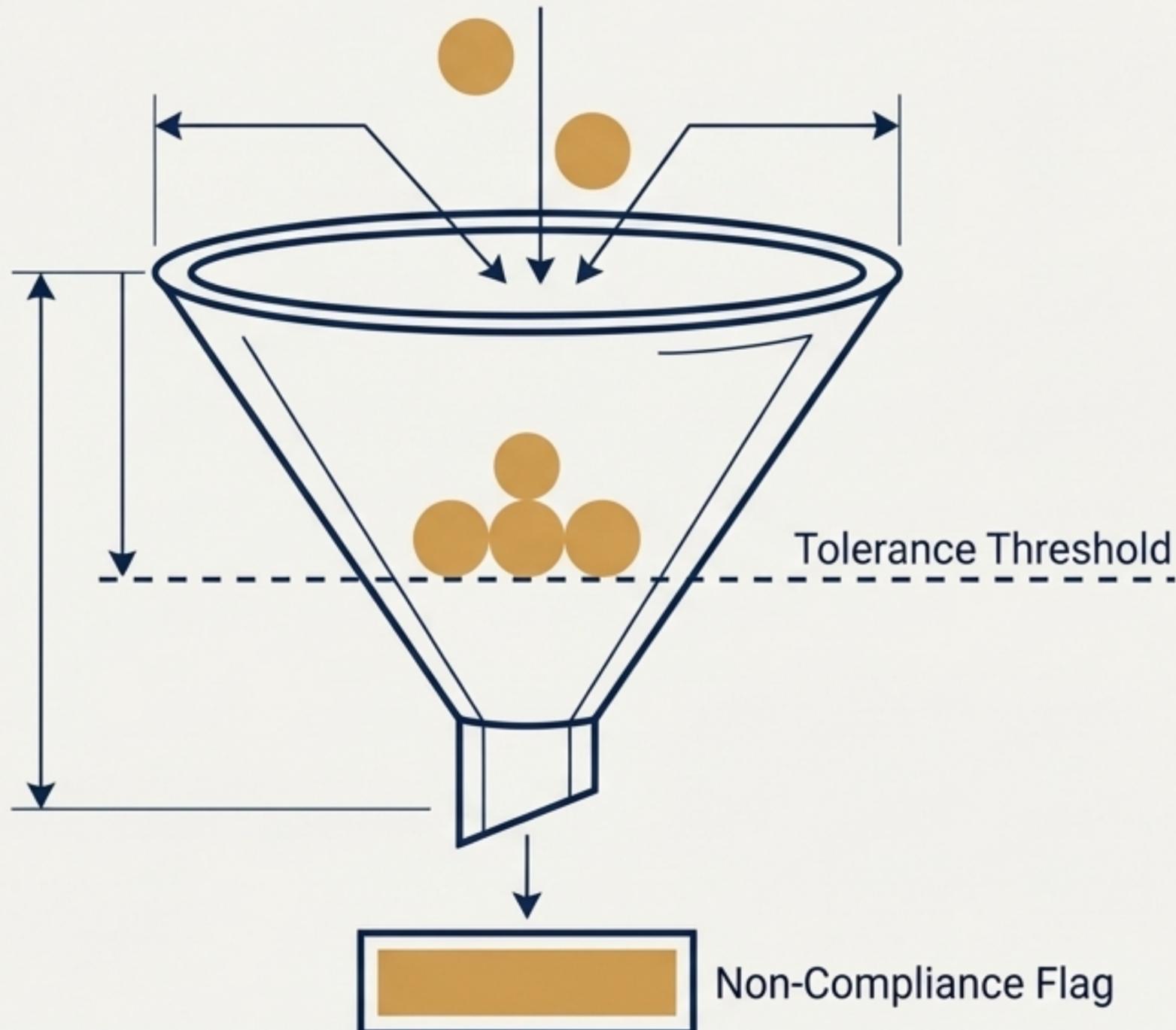
Zero False Negatives



$$F^- = 0$$

Meaning: The system demands absolute zero occurrences of false negatives. Given their catastrophic Weight 8 risk, a single false negative invalidates the safety profile.

The Mitigation Filter for False Positives



The Variable:

($F+ = \text{wgt1} \times 3$)

How It Works:

Low-risk rules (Weight 1) are highly susceptible to Assessor Certainty bias (nit-picking). To mitigate this unfair burden on facilities, the algorithm groups these violations.

The Threshold:

It takes three separate Weight 1 violations to trigger a meaningful negative impact on the facility's overall assessment. The algorithm absorbs minor human errors without penalizing the provider's liability.

The 6th Generation of Regulatory Science

The Lineage

The IRF represents the 6th-generation evolution of the Early Childhood Program Quality Improvement and Indicator Model (ECPQIM).

The Outcome

By integrating risk assessment, psychological bias profiling, and statistical prediction, the IRF transforms compliance from a subjective human judgment into a calibrated scientific measurement.

The Next Phase

Ready for rigorous field testing to validate the elimination of false negatives and the stabilization of provider liability. (Fiene, 2026).

Field Testing