

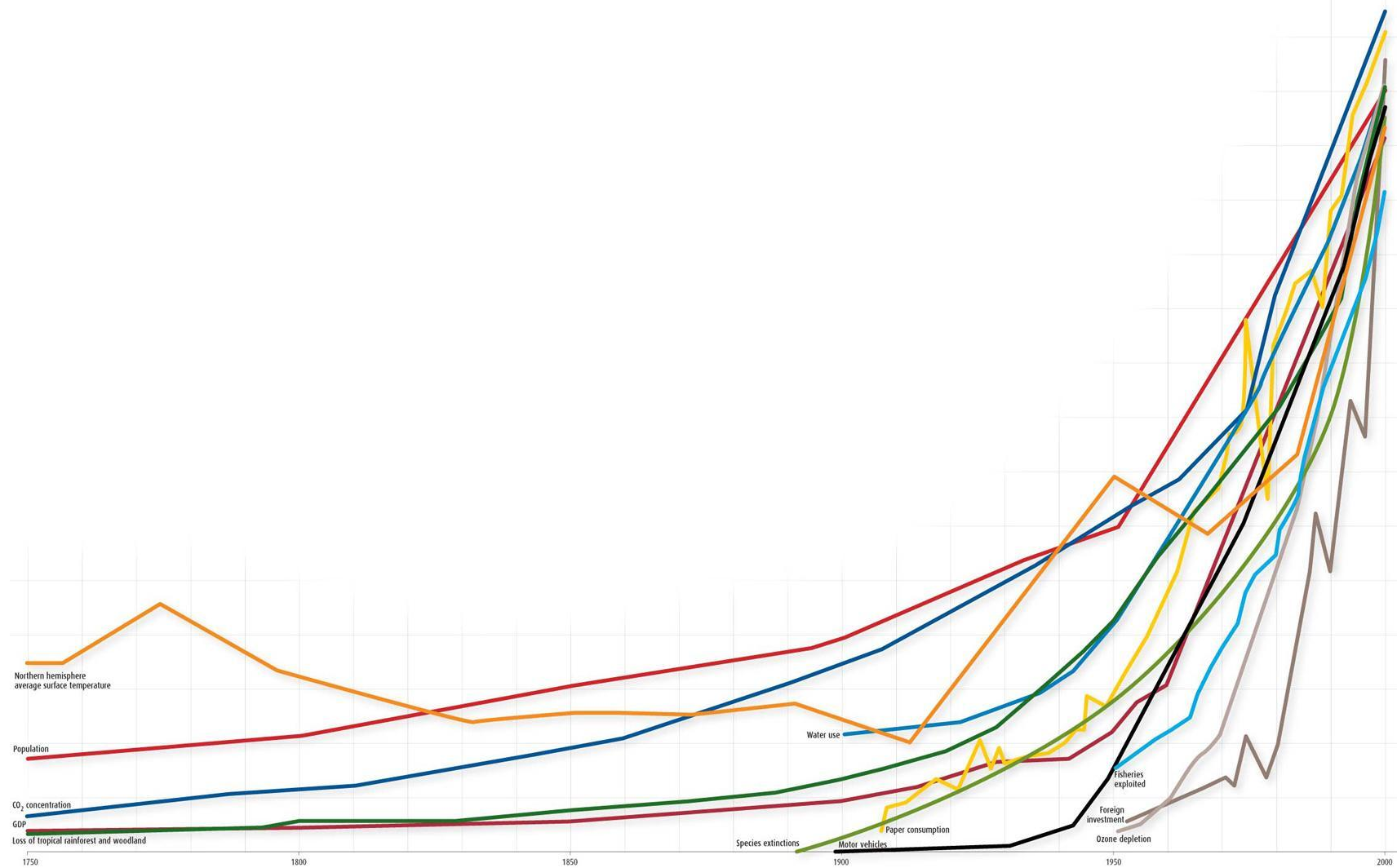
Emotional AI for Expanding Worlds

Stéphane Bura









Emotional AI for Expanding Worlds

Stéphane Bura



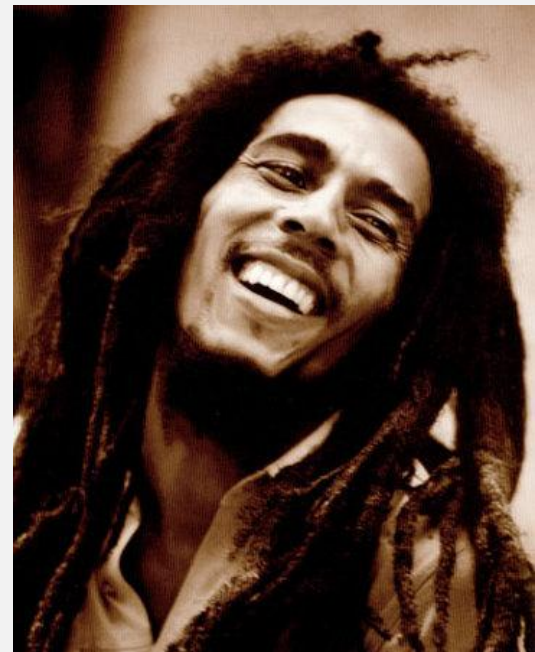
EXPRESSIVENESS

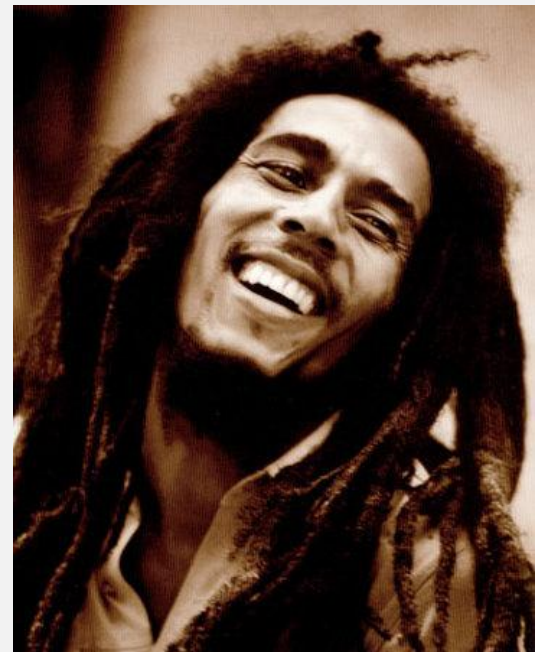


SCALABILITY



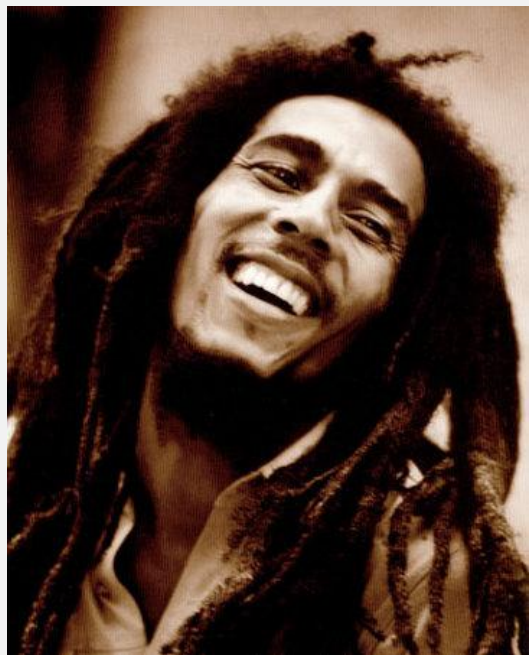
EXPRESSIVENESS



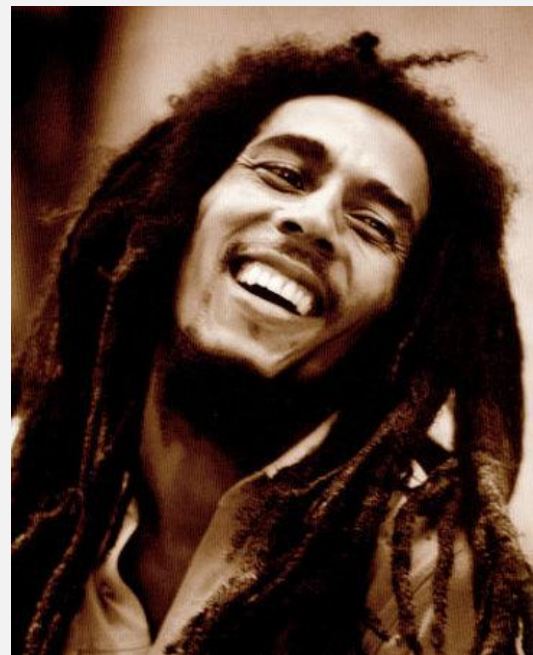
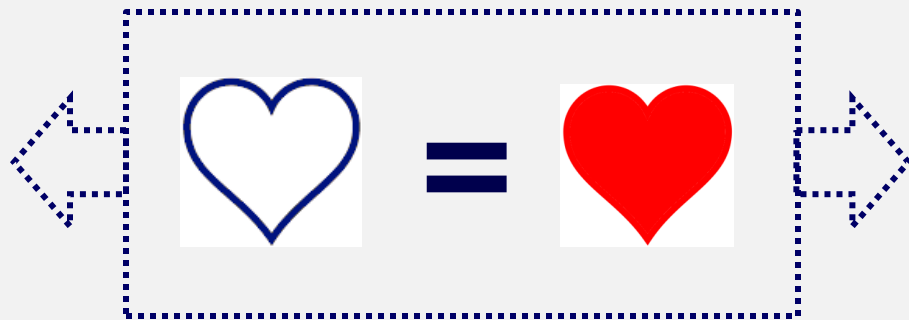


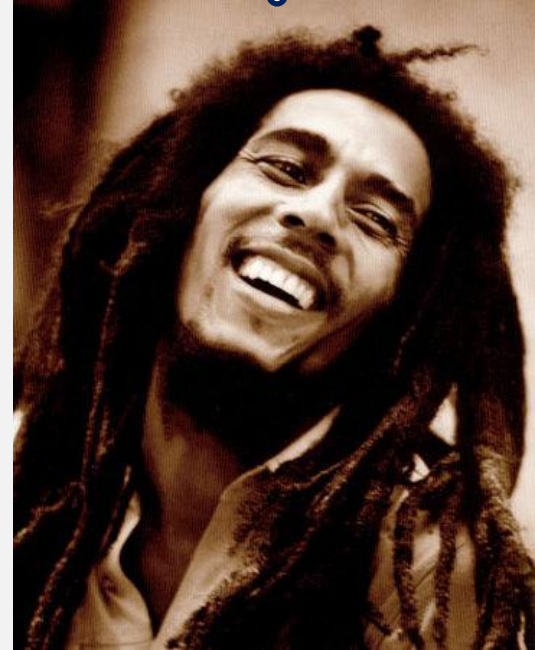
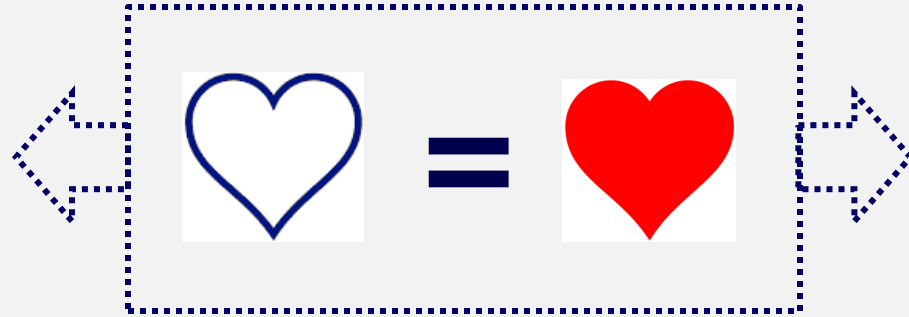
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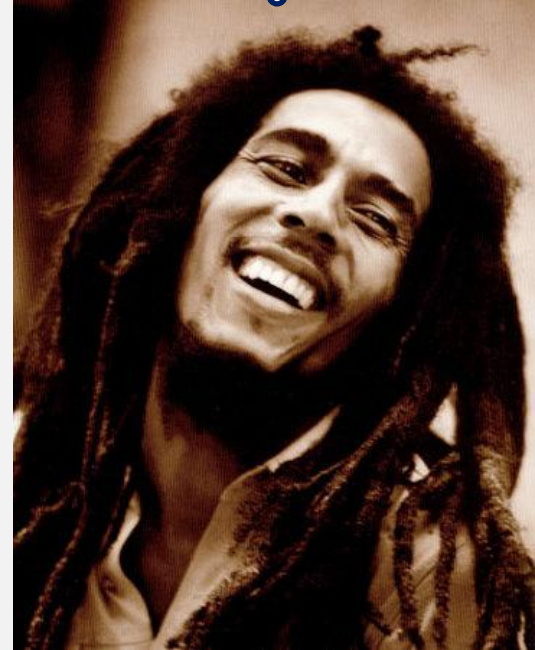
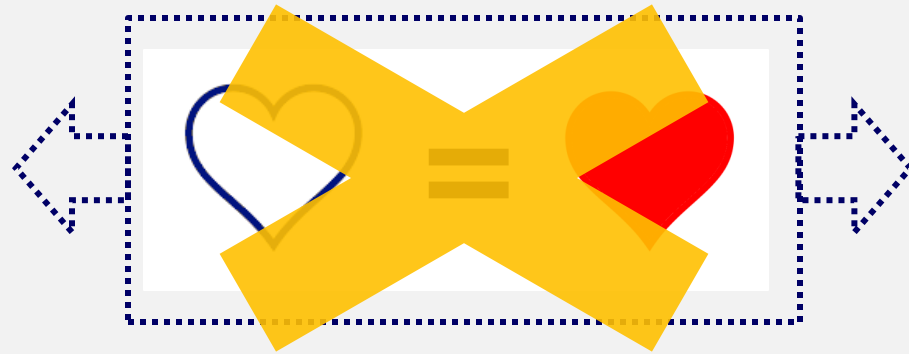
I ♥ U



I  **U**







ABSTRACTION



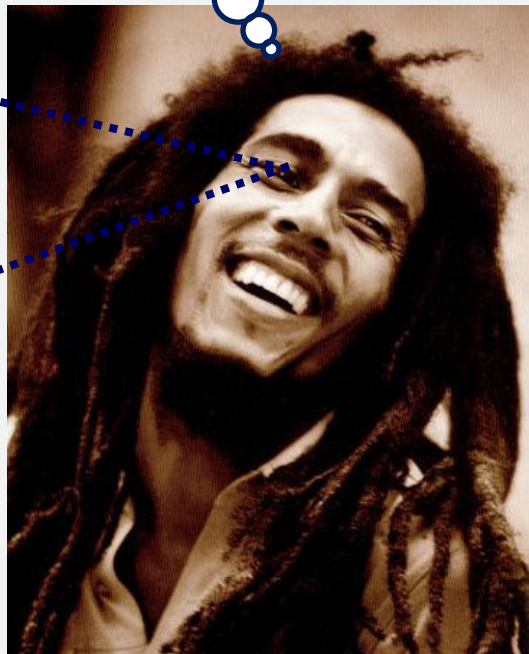
WE NEED TO GO DEEPER

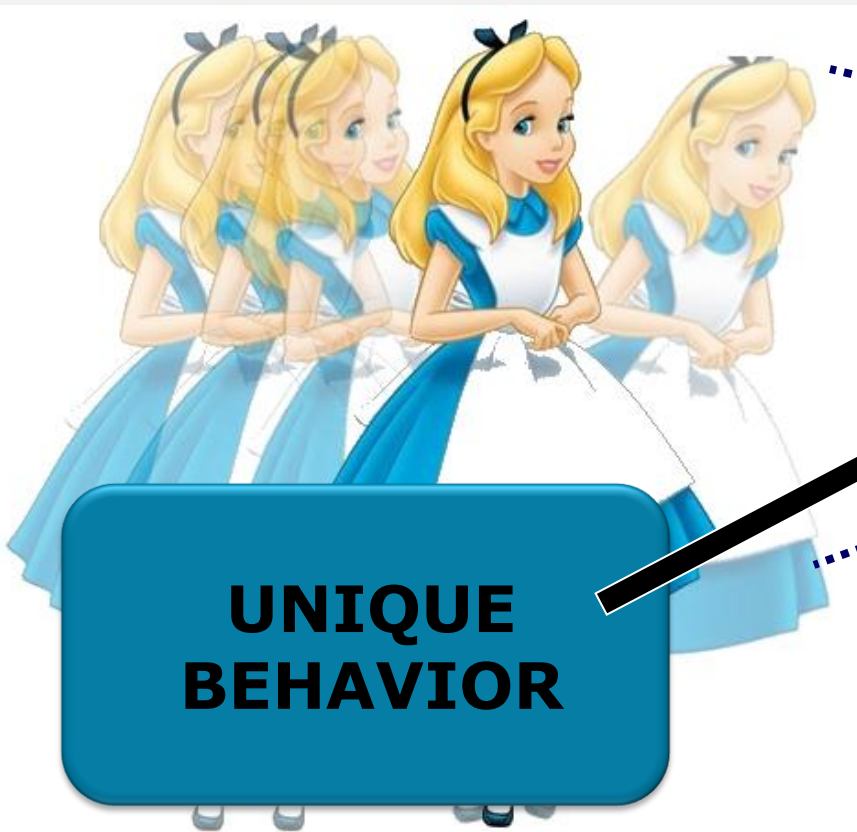
ACTION



E S

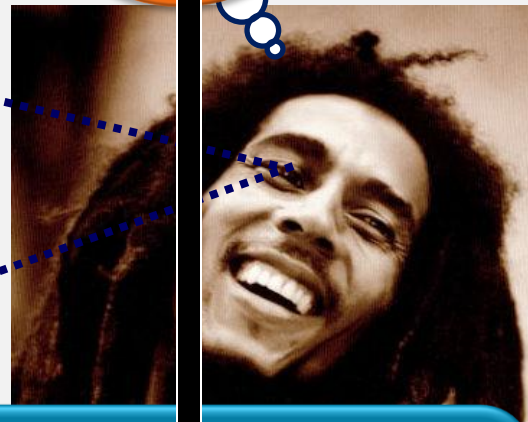
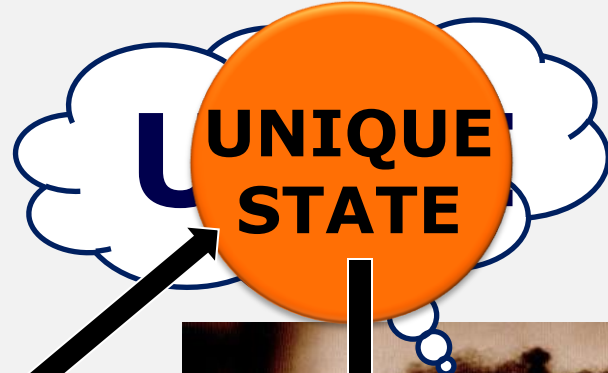







**UNIQUE
BEHAVIOR**

**UNIQUE
RULE**



**UNIQUE
BEHAVIOR**

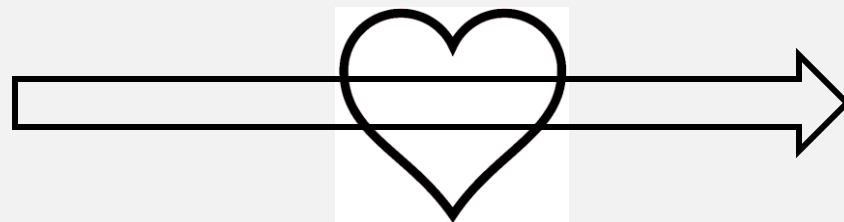
A close-up shot of Leonardo DiCaprio in a dark suit and tie, looking intently at another man whose back is partially to the camera. The scene is dimly lit with warm, golden light, suggesting an indoor setting like a bar or office at night. A glass is visible in the lower left corner.

WE NEED TO GO DEEPER

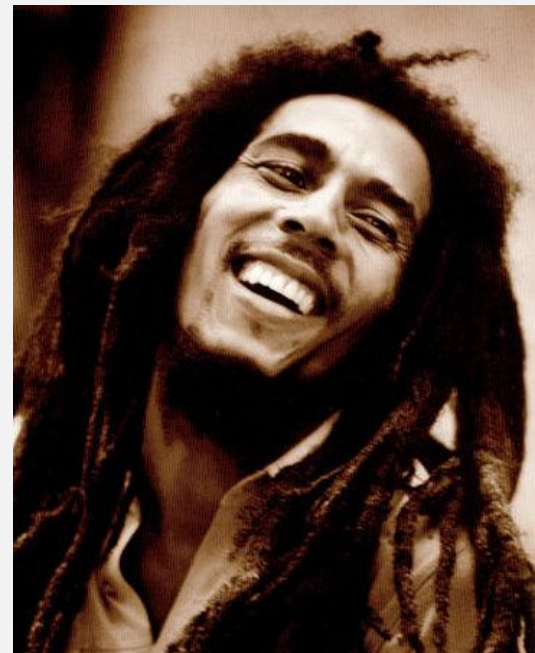
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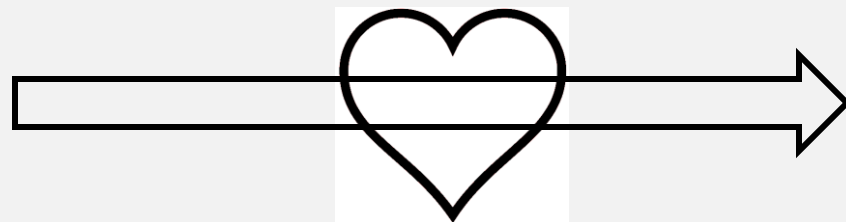
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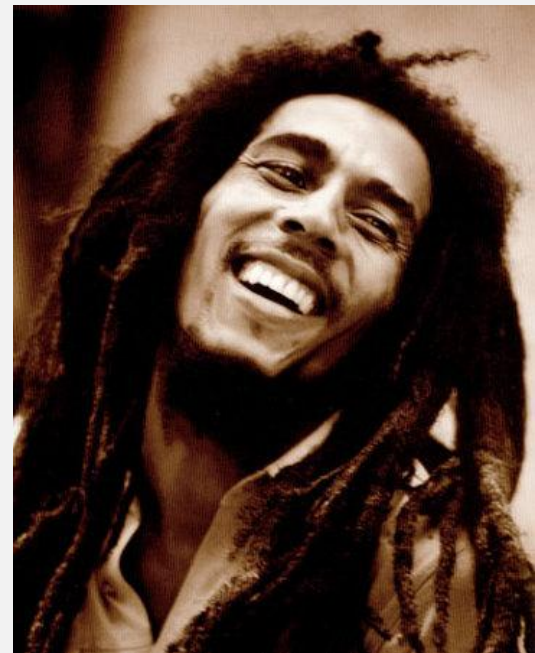


INTENTION



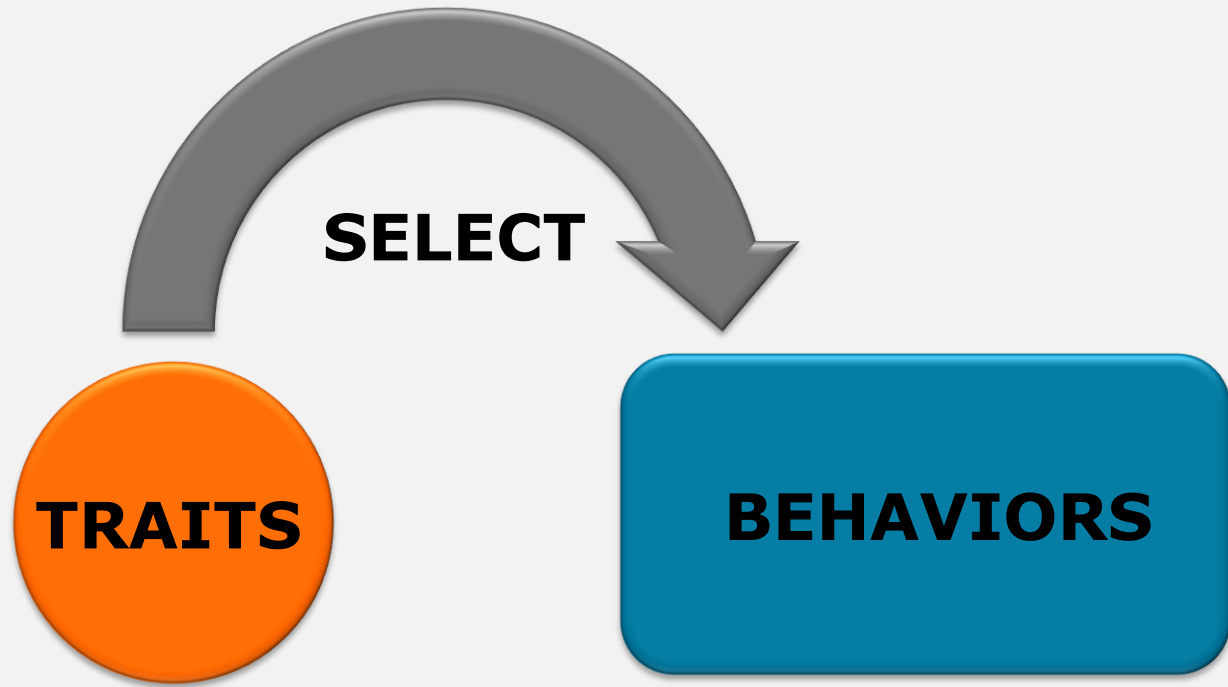


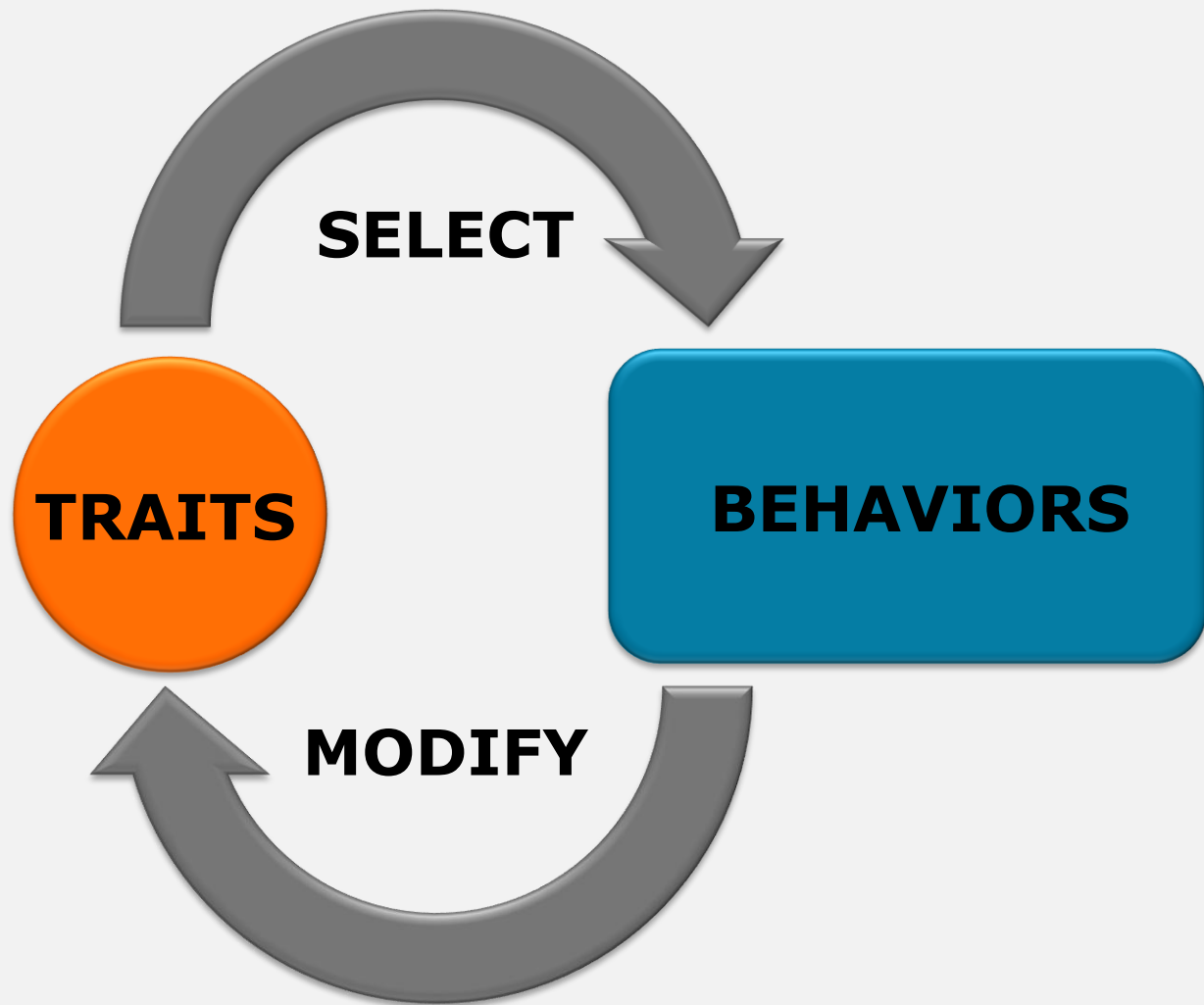
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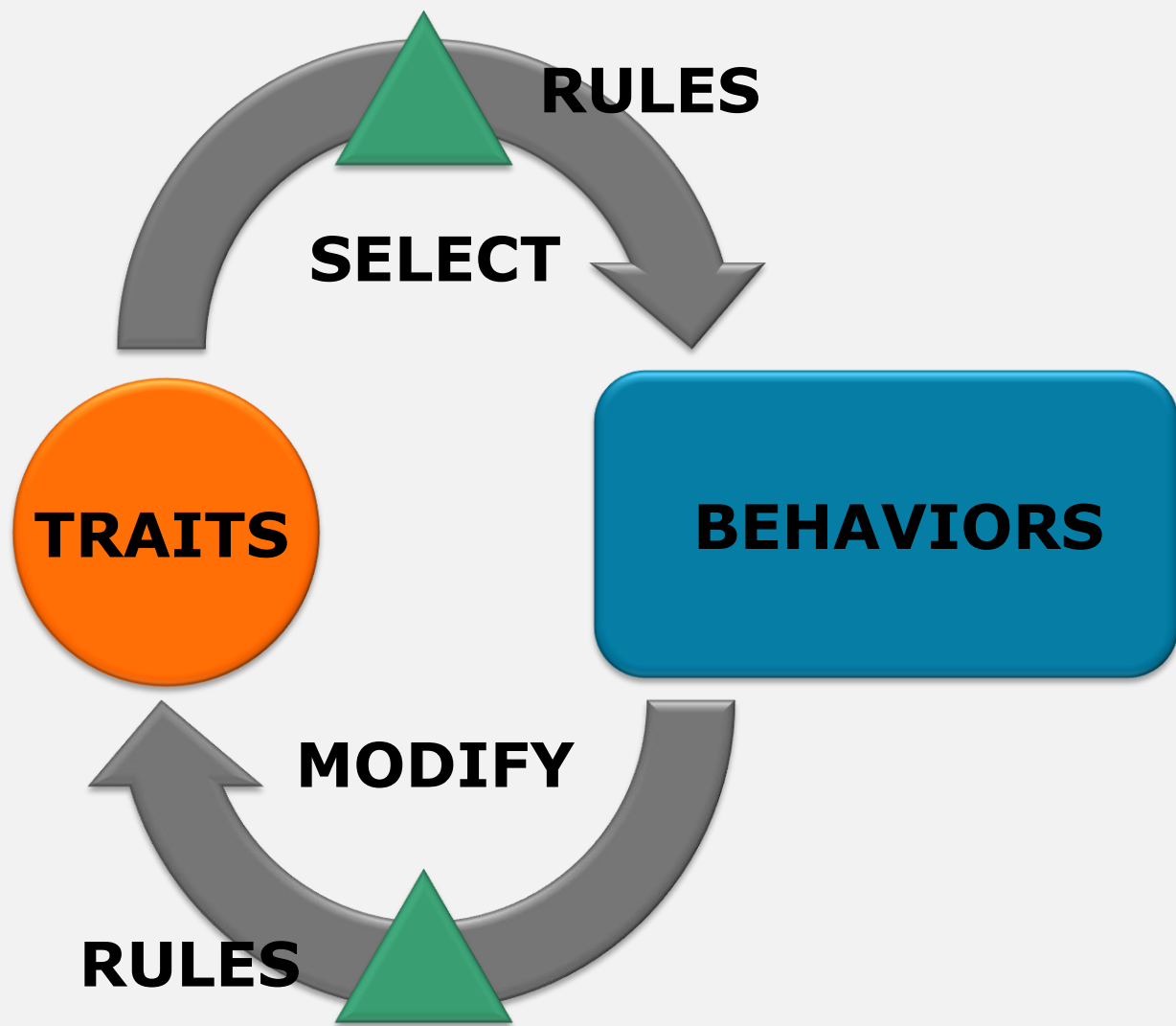


FOR THE OBSERVER

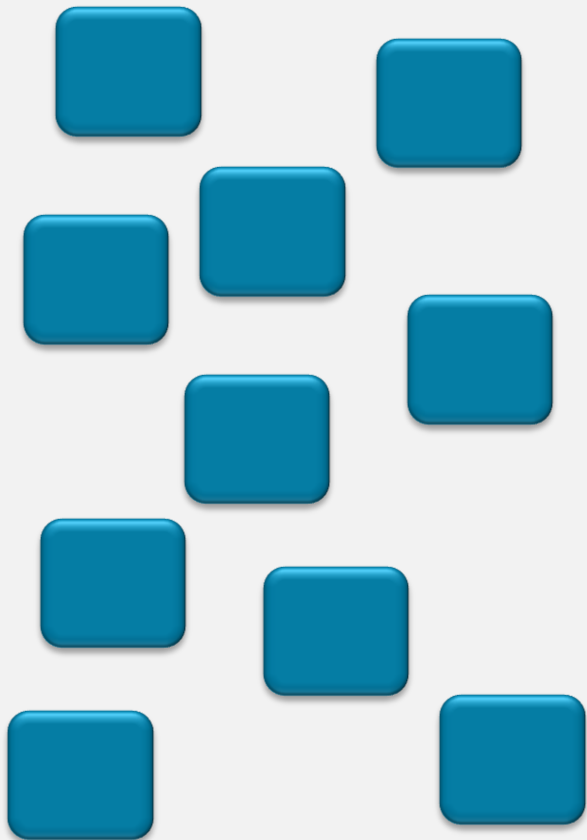




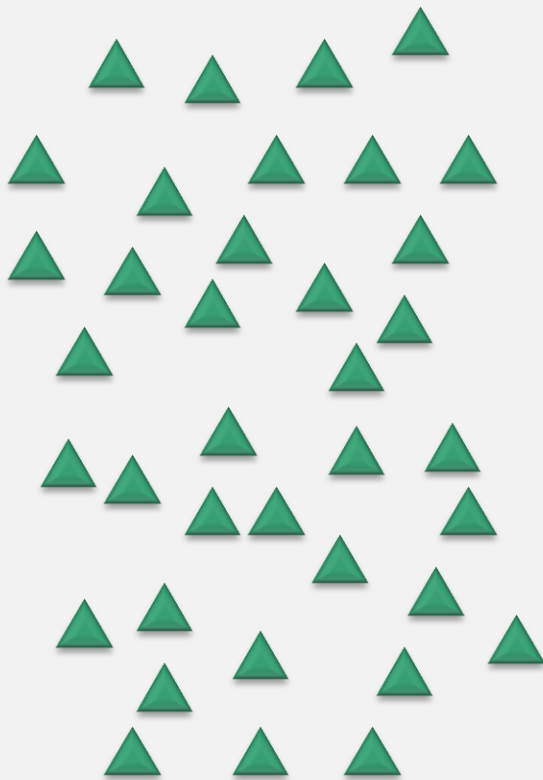




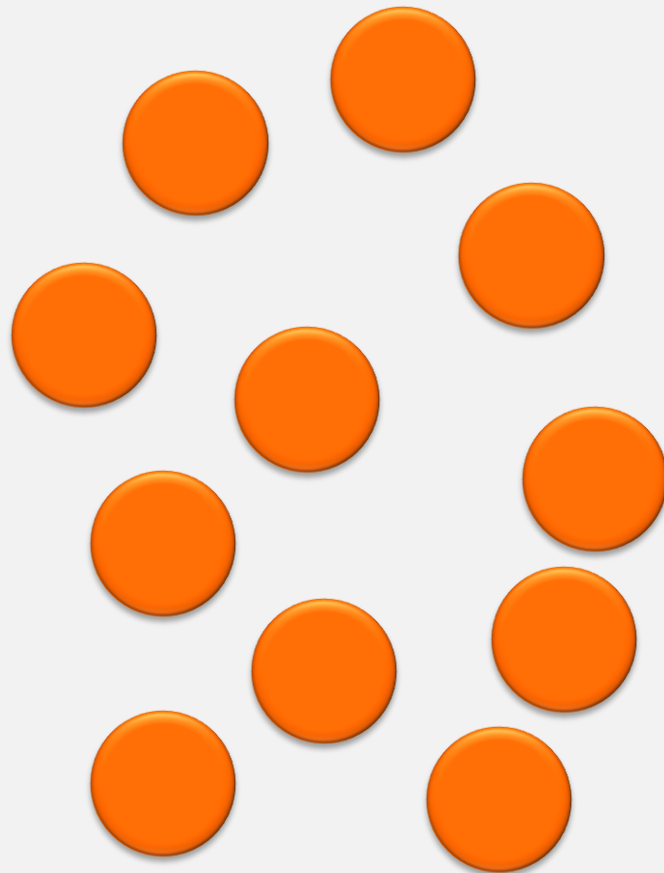
BEHAVIORS



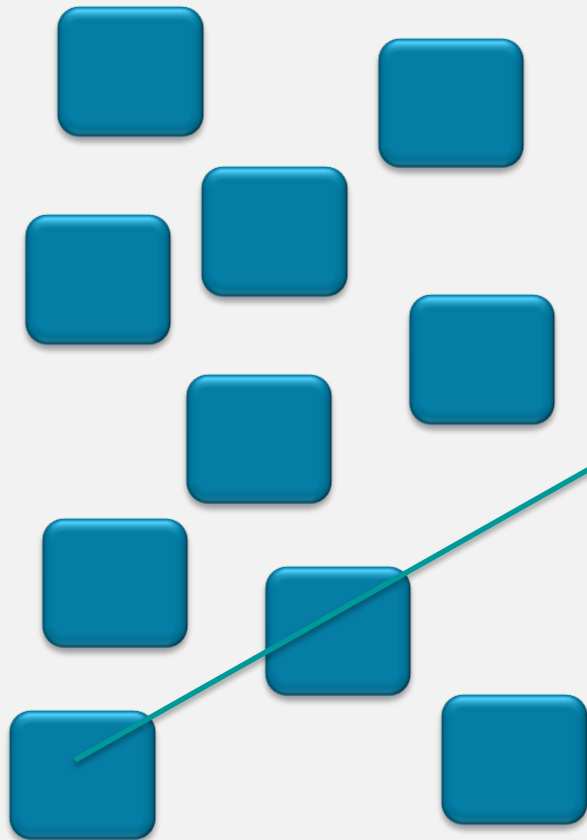
RULES



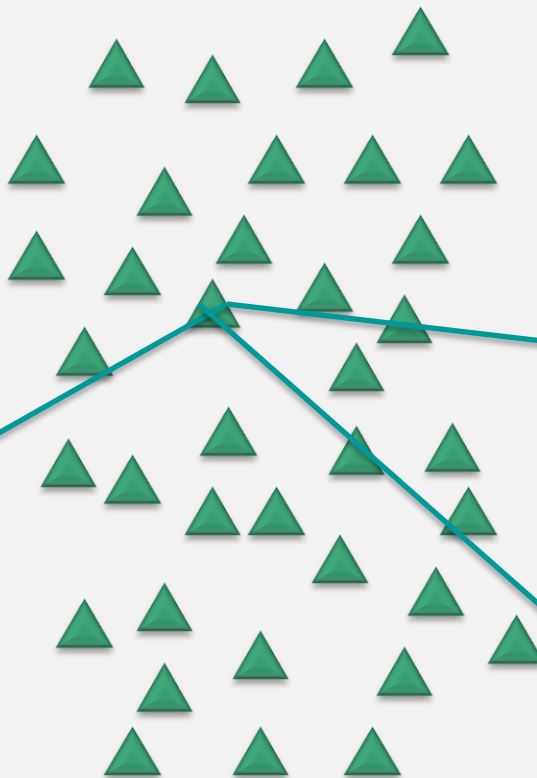
TRAITS



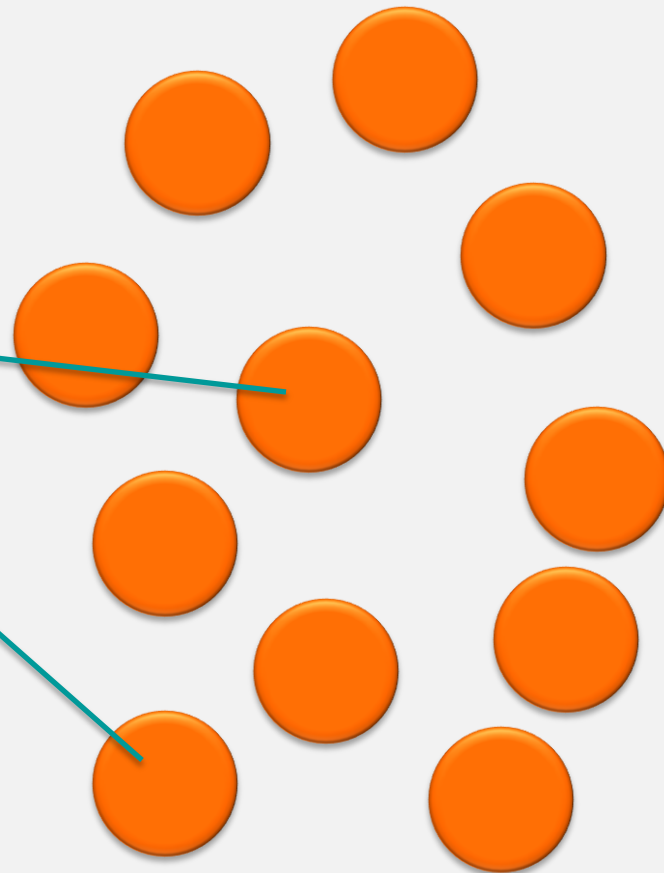
BEHAVIORS



RULES



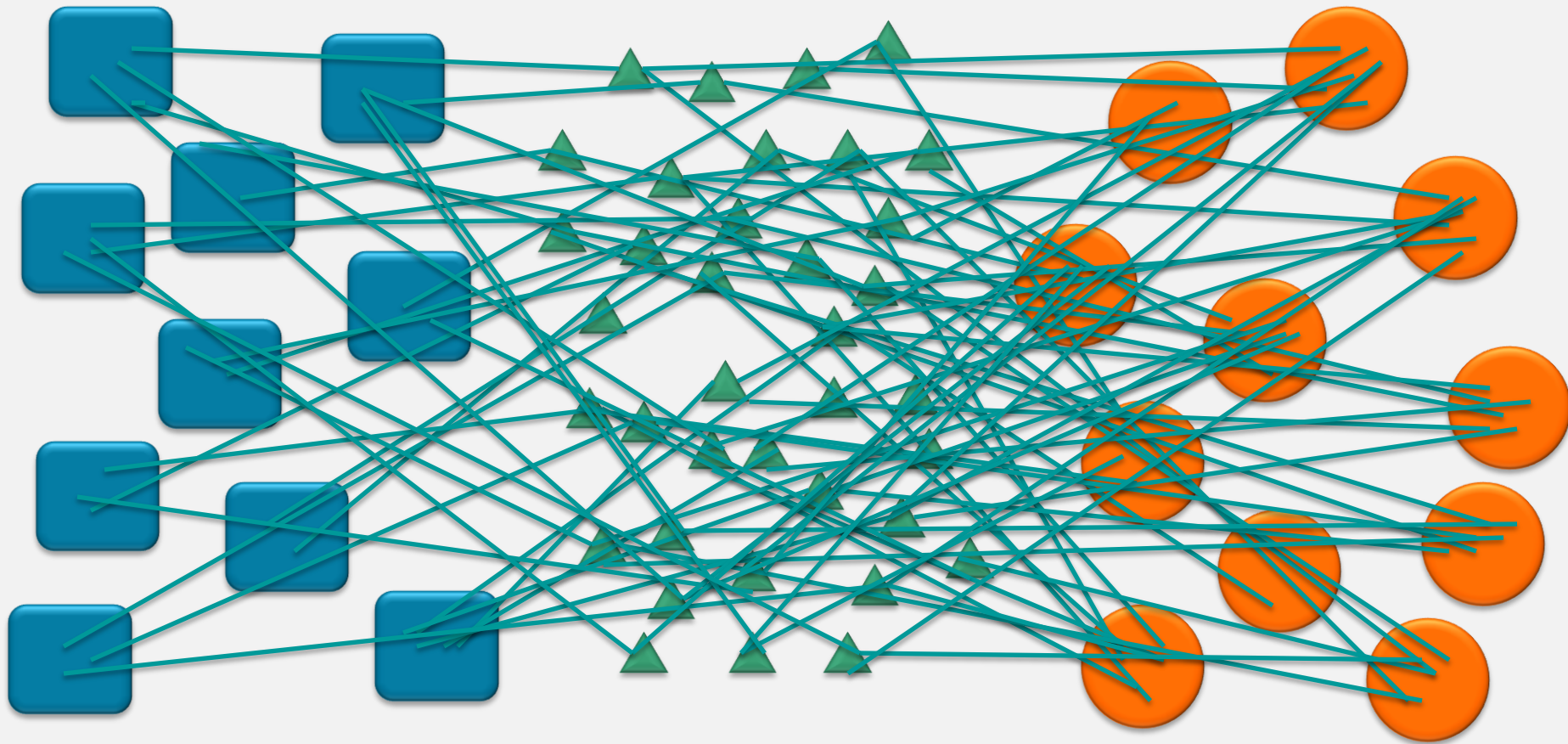
TRAITS



BEHAVIORS

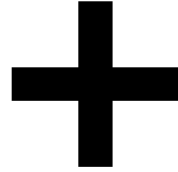
RULES

TRAITS

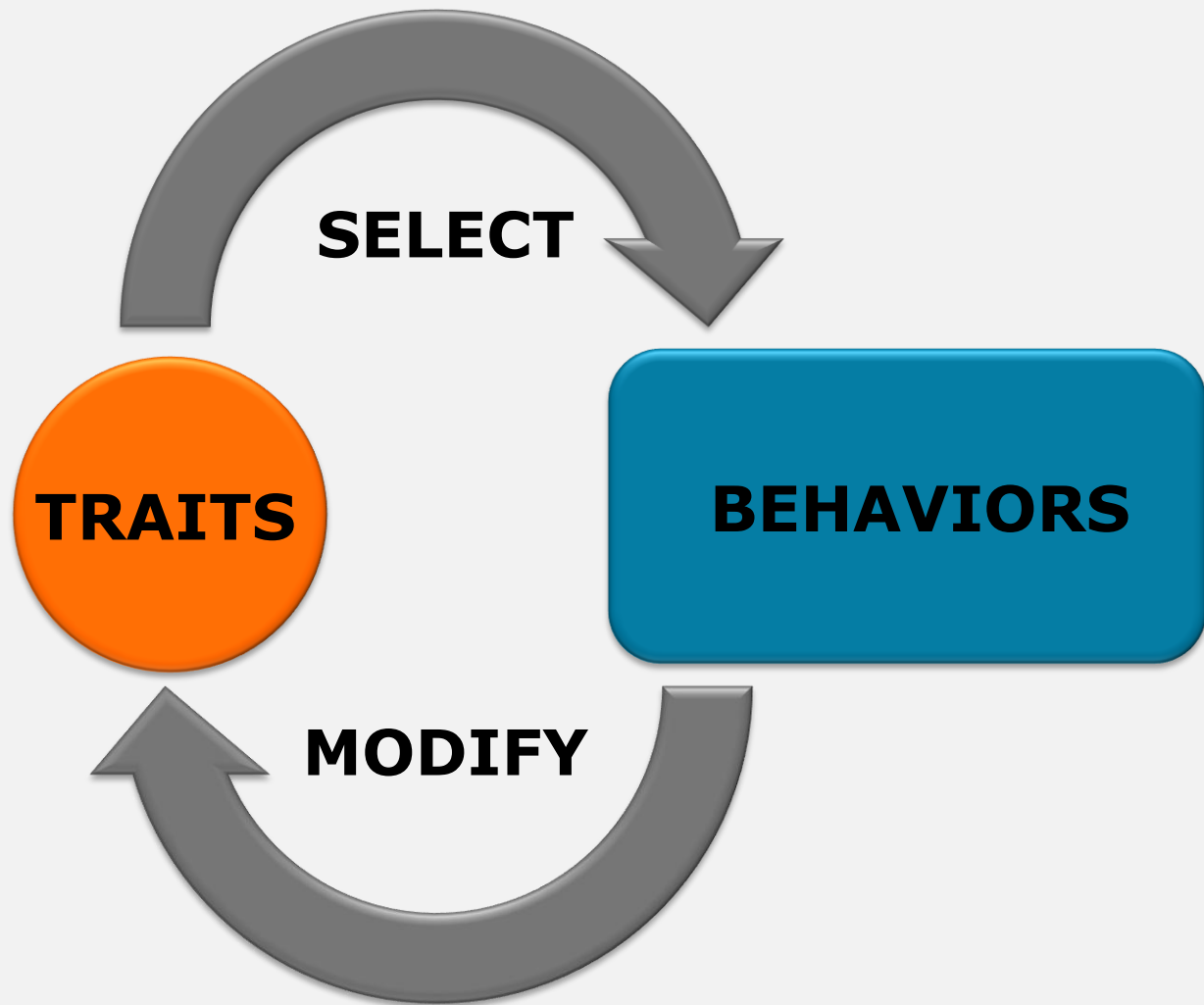


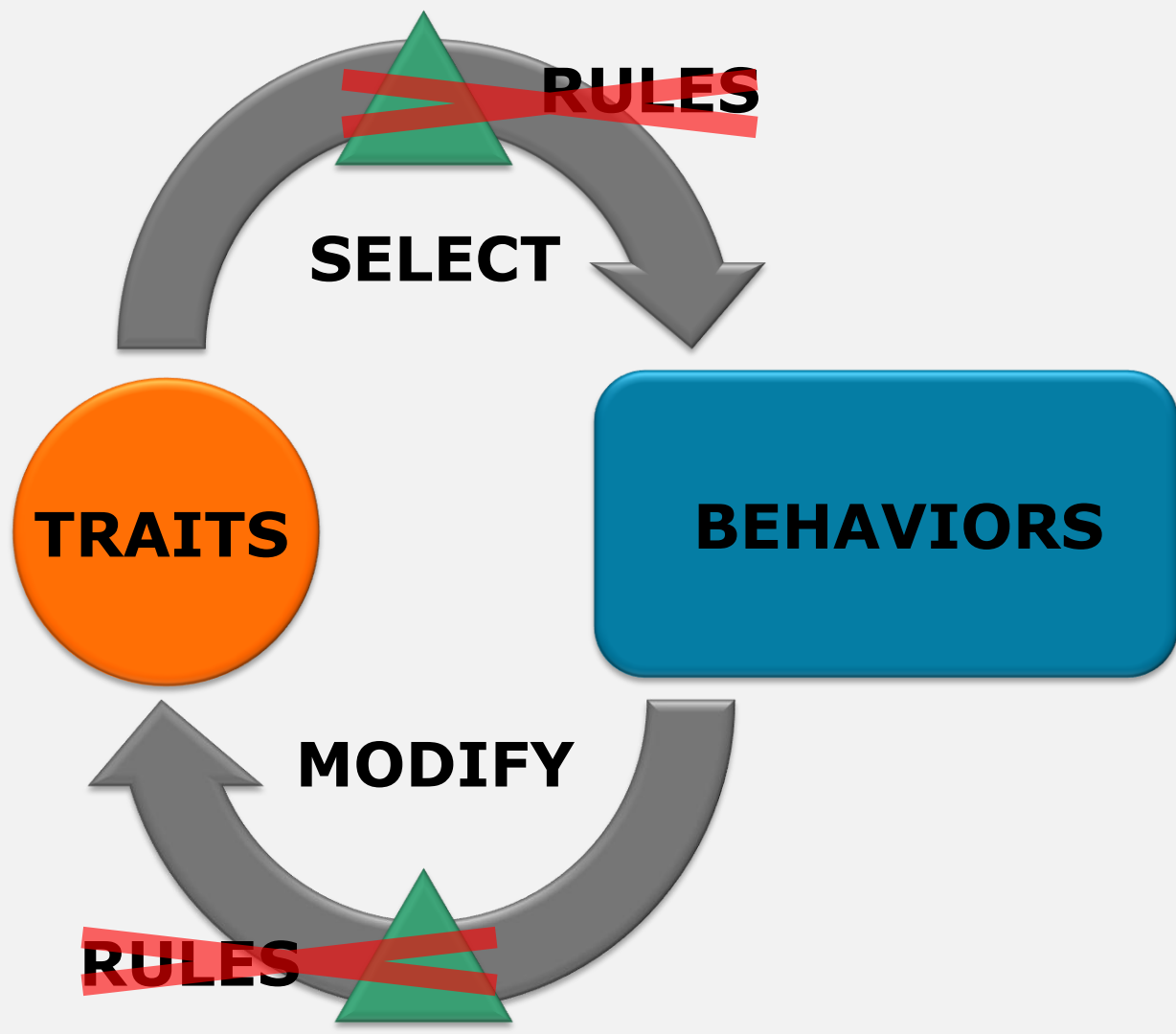



EXPRESSIVENESS



SCALABILITY





A close-up, low-angle shot of Leonardo DiCaprio in a dark suit and tie, looking slightly to his right with a serious expression. The lighting is warm and dramatic, highlighting his face. In the background, another person's head and shoulders are visible, also in a suit. The overall mood is intense and professional.

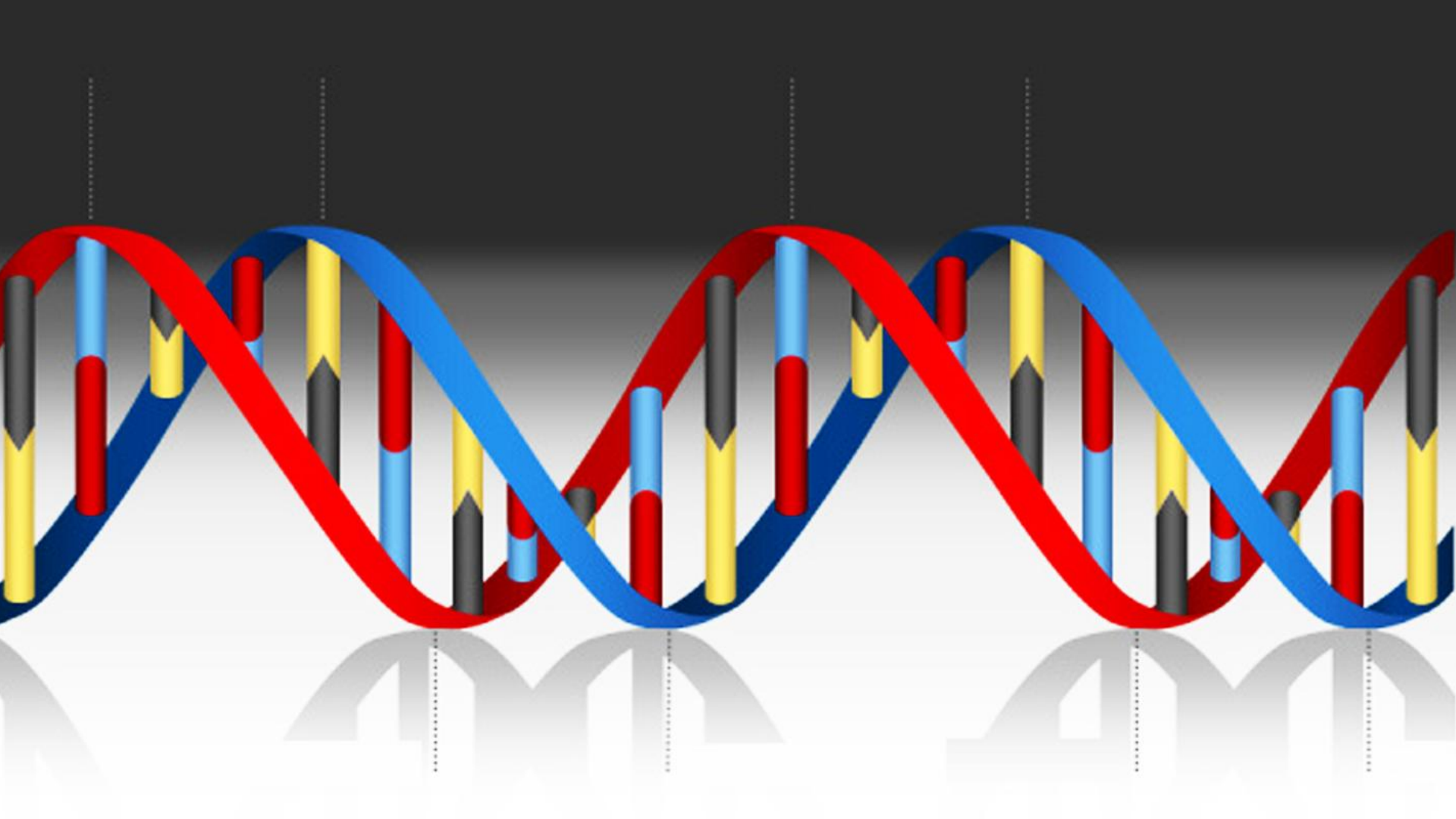
WE NEED TO GO DEEPER

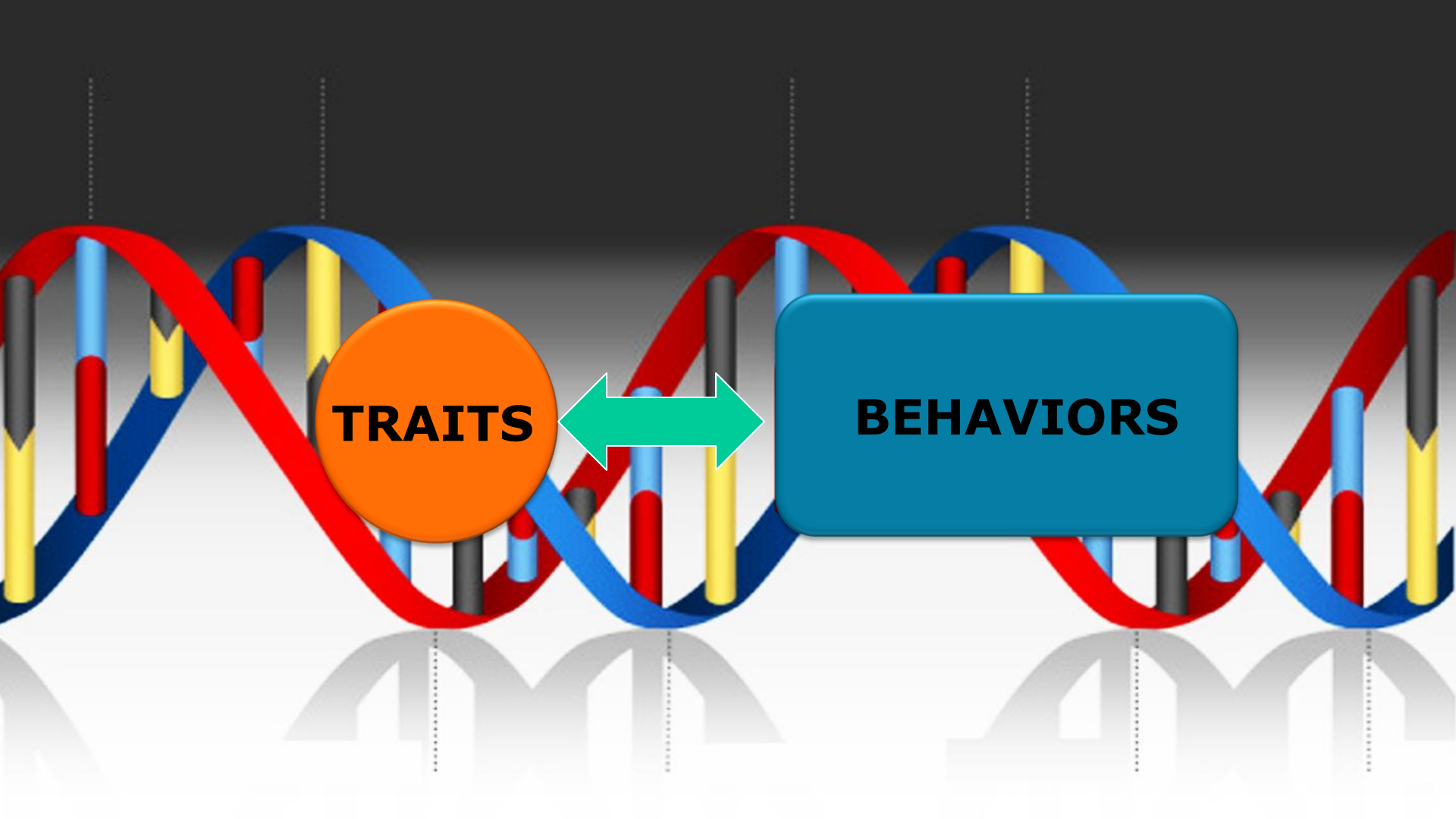
WE NEED TO GO DEEPER

WE NEED TO GO DEEPER



**UNIVERSAL
ARBITRARY
ABSTRACTION**





OCEAN MODEL

"THE BIG FIVE"

MOTIVATIONAL PSYCHOLOGY

NEUROTICISM

AGREEABLENESS

EXTRAVERSION

CONSCIENTIOUSNESS

OPENNESS

OCEAN MODEL
“THE BIG FIVE”

NEUROTICISM

ANXIETY
ANGER
DEPRESSION
SELF-CONSCIOUSNESS
IMMODERATION
VULNERABILITY

EXTRAVERSION

FRIENDLINESS
GREGARIOUSNESS
ASSERTIVENESS
ACTIVITY LEVEL
EXCITEMENT-SEEKING
CHEERFULNESS

OPENNESS

IMAGINATION
ARTISTIC INTERESTS
EMOTIONALITY
ADVENTUROUSNESS
INTELLECT
LIBERALISM

AGREEABLENESS

TRUST
MORALITY
ALTRUISM
COOPERATION
MODESTY
SYMPATHY

CONSCIENTIOUSNESS

SELF-EFFICACY
ORDERLINESS
DUTIFULNESS
ACHIEVEMENT-STRIVING
SELF-DISCIPLINE
CAUTIOUSNESS

OCEAN MODEL

“THE BIG FIVE”

The 5 Domains of Play: Applying Psychology's Big 5 Motivation Domains to Games

Game Design

The 5 Domains of Play: Applying Psychology's Big 5 Motivation Domains to Games



Tweet 0

+1

Like

SPEAKER/S: Jason VandenBerghe (Ubisoft)**DAY / TIME / LOCATION:** Thursday 11:30-12:30 Room 2002, West Hall, 2nd Fl**TRACK / DURATION / FORMAT / AUDIENCE LEVEL:** Game Design / 60-Minute / Lecture / All**GDC VAULT RECORDING:** Video Recorded

DESCRIPTION: Over the last 20 years an often unobserved modern motivational psychology has coalesced around a system called "The Big 5" or OCEAN. Why should we care? Because unlike its predecessors, this one has a titanic landslide of repeatable, scientific evidence behind it. But how does it apply to games?

The speaker has been collaborating with academics and industry colleagues to try and answer that problem - and we have found that we can, without difficulty, connect specific game elements directly to measurable Big 5 personality "facets". By doing this, we have uncovered a completely new way of looking at the motivations of play.

The potential of this connection is broad: it guides the speaker's our game design decision-making, it helps explain why particular games satisfy (or otherwise), it offers a statistical framework for playtest evaluation and shows us which audiences we have been missing out on.

TAKEAWAY: Attendees will gain an overview of the Big 5 (OCEAN) system of motivational psychology, and a detailed system of design analysis (the "5 domains of play") based on that system that will enable them to understand why their game is or is not satisfying their customers.

INTENDED AUDIENCE: This talk is intended for designers and producers who are engaged in understanding why their players are or are not satisfied with their game, or for anyone looking for a deeper insight into their player's mind. A basic understanding of how player motivation works will be helpful.

ELIGIBLE PASSES: All Access Pass, Main Conference Pass

Sessions

Sessions

Sessions

Sessions

Sessions

Sessions

NEUROTICISM

ANXIETY
ANGER
DEPRESSION
SELF-CONSCIOUSNESS
IMMODERATION
VULNERABILITY

EXTRAVERSION

FRIENDLINESS
GREGARIOUSNESS
ASSERTIVENESS
ACTIVITY LEVEL
EXCITEMENT-SEEKING
CHEERFULNESS

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IMAGINATION
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COOPERATION
MODESTY
SYMPATHY

CONSCIENTIOUSNESS

SELF-EFFICACY
ORDERLINESS
DUTIFULNESS
ACHIEVEMENT-STRIVING
SELF-DISCIPLINE
CAUTIOUSNESS

NEUROTICISM

- ANXIETY
- ANGER
- DEPRESSION
- SELF-CONSCIOUSNESS
- IMMODERATION
- VULNERABILITY

-1
+1

EXTRAVERSION

- FRIENDLINESS
- GREGARIOUSNESS
- ASSERTIVENESS
- ACTIVITY LEVEL
- EXCITEMENT-SEEKING
- CHEERFULNESS

+1

OPENNESS

- IMAGINATION
- ARTISTIC INTERESTS
- EMOTIONALITY
- ADVENTUROUSNESS
- INTELLECT
- LIBERALISM

+1

+2
+1

AGREEABLENESS

- TRUST
- MORALITY
- ALTRUISM
- COOPERATION
- MODESTY
- SYMPATHY

+1
+1
+1
+2

CONSCIENTIOUSNESS

- SELF-EFFICACY
- ORDERLINESS
- DUTIFULNESS
- ACHIEVEMENT-STRIVING
- SELF-DISCIPLINE
- CAUTIOUSNESS

-2
-1

LOVE

NEUROTICISM **-1**

- ANXIETY .
- ANGER .
- DEPRESSION .
- SELF-CONSCIOUSNESS .
- IMMODERATION +1
- VULNERABILITY .

EXTRAVERSION **+1**

- FRIENDLINESS +1
- GREGARIOUSNESS +2
- ASSERTIVENESS +1
- ACTIVITY LEVEL .
- EXCITEMENT-SEEKING +1
- CHEERFULNESS .

OPENNESS **+2**

- IMAGINATION .
- ARTISTIC INTERESTS .
- EMOTIONALITY +2
- ADVENTUROUSNESS +1
- INTELLECT .
- LIBERALISM .

AGREEABLENESS **+2**

- TRUST .
- MORALITY .
- ALTRUISM .
- COOPERATION .
- MODESTY -2
- SYMPATHY +1

CONSCIENTIOUSNESS

- SELF-EFFICACY .
- ORDERLINESS .
- DUTIFULNESS .
- ACHIEVEMENT-STRIVING +1
- SELF-DISCIPLINE +1
- CAUTIOUSNESS .

SEDUCE

NEUROTICISM			-1			AGREEABLENESS			+2	+1
ANXIETY						TRUST				+1
ANGER						MORALITY				
DEPRESSION						ALTRUISM				+1
SELF-CONSCIOUSNESS				-1		COOPERATION				
IMMODERATION	+1			+1		MODESTY			-2	
VULNERABILITY						SYMPATHY			+1	+2
EXTRAVERSION			+1	+1		CONSCIENTIOUSNESS				
FRIENDLINESS	+1					SELF-EFFICACY				
GREGARIOUSNESS	+2					ORDERLINESS				
ASSERTIVENESS	+1					DUTIFULNESS				
ACTIVITY LEVEL						ACHIEVEMENT-STRIVING			+1	
EXCITEMENT-SEEKING	+1					SELF-DISCIPLINE			+1	-2
CHEERFULNESS						CAUTIOUSNESS				-1
OPENNESS			+2	+1		SEDUCE LOVE				
IMAGINATION										
ARTISTIC INTERESTS										
EMOTIONALITY	+2			+2						
ADVENTUROUSNESS	+1			+1						
INTELLECT										
LIBERALISM										

NEUROTICISM

-1

ANXIETY
ANGER
DEPRESSION
SELF-CONSCIOUSNESS
IMMODERATION
VULNERABILITY

+1 -1
+1 +1

EXTRAVERSION

+1 +1

FRIENDLINESS
GREGARIOUSNESS
ASSERTIVENESS
ACTIVITY LEVEL
EXCITEMENT-SEEKING
CHEERFULNESS

+1

+2

+1

+1

OPENNESS

+2 +1

IMAGINATION
ARTISTIC INTERESTS
EMOTIONALITY
ADVENTUROUSNESS
INTELLECT
LIBERALISM

+2 +2

+1 +1

AGREEABLENESS

+2 +1

TRUST
MORALITY
ALTRUISM
COOPERATION
MODESTY
SYMPATHY

+1

+1

-2

+1 +2

CONSCIENTIOUSNESS

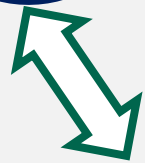
SELF-EFFICACY
ORDERLINESS
DUTIFULNESS
ACHIEVEMENT-STRIVING
SELF-DISCIPLINE
CAUTIOUSNESS

+1

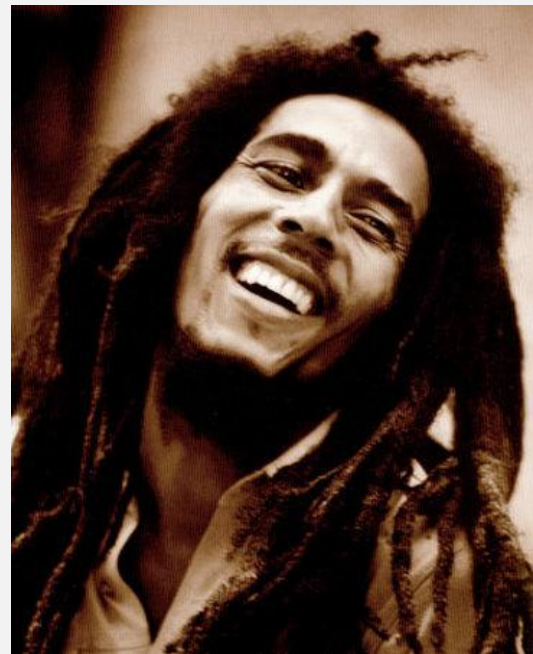
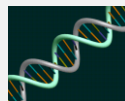
+1 -2

-1

SEDUCE LOVE



SEDUCE



NEUROTICISM

- ANXIETY
- ANGER
- DEPRESSION
- SELF-CONSCIOUSNESS
- IMMODERATION
- VULNERABILITY

EXTRAVERSION

- FRIENDLINESS
- GREGARIOUSNESS
- ASSERTIVENESS
- ACTIVITY LEVEL
- EXCITEMENT-SEEKING
- CHEERFULNESS

OPENNESS

- IMAGINATION
- ARTISTIC INTERESTS
- EMOTIONALITY
- ADVENTUROUSNESS
- INTELLECT
- LIBERALISM

+1

+1

+2

+1

-2

-2

-2

-1

-1

-2

-1

AGREEABLENESS

- TRUST
- MORALITY
- ALTRUISM
- COOPERATION
- MODESTY
- SYMPATHY

+2

CONSCIENTIOUSNESS

- SELF-EFFICACY
- ORDERLINESS
- DUTIFULNESS
- ACHIEVEMENT-STRIVING
- SELF-DISCIPLINE
- CAUTIOUSNESS

+2

+1

SHY

NEUROTICISM		-1	+1	AGREEABLENESS		+2	
ANXIETY			+1	TRUST			
ANGER				MORALITY			
DEPRESSION				ALTRUISM			
SELF-CONSCIOUSNESS			+2	COOPERATION			
IMMODERATION	+1			MODESTY		-2	+2
VULNERABILITY			+1	SYMPATHY		+1	
EXTRAVERSION		+1	-2	CONSCIENTIOUSNESS			
FRIENDLINESS	+1			SELF-EFFICACY			
GREGARIOUSNESS	+2		-2	ORDERLINESS			
ASSERTIVENESS	+1		-2	DUTIFULNESS			
ACTIVITY LEVEL			-1	ACHIEVEMENT-STRIVING	+1		
EXCITEMENT-SEEKING	+1		-1	SELF-DISCIPLINE	+1		+2
CHEERFULNESS				CAUTIOUSNESS			+1
OPENNESS		+2					
IMAGINATION							
ARTISTIC INTERESTS							
EMOTIONALITY	+2		-2				
ADVENTUROUSNESS	+1		-1				
INTELLECT							
LIBERALISM							
				SEDUCE			
				SHY			

NEUROTICISM

ANXIETY
ANGER
DEPRESSION
SELF-CONSCIOUSNESS
IMMODERATION
VULNERABILITY

-1 **+1**

+1

+2

+1

+1

EXTRAVERSION

FRIENDLINESS
GREGARIOUSNESS
ASSERTIVENESS
ACTIVITY LEVEL
EXCITEMENT-SEEKING
CHEERFULNESS

+1 **-2**

+1

+2

-2

+1

-2

-1

+1

-1

OPENNESS

IMAGINATION
ARTISTIC INTERESTS
EMOTIONALITY
ADVENTUROUSNESS
INTELLECT
LIBERALISM

+2

+2

-2

+1

-1

AGREEABLENESS

TRUST
MORALITY
ALTRUISM
COOPERATION
MODESTY
SYMPATHY

+2

-2 **+2**

+1

CONSCIENTIOUSNESS

SELF-EFFICACY
ORDERLINESS
DUTIFULNESS
ACHIEVEMENT-STRIVING
SELF-DISCIPLINE
CAUTIOUSNESS

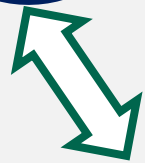
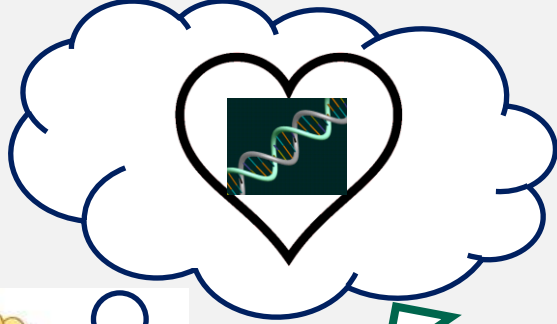
+1 **+2**

+1

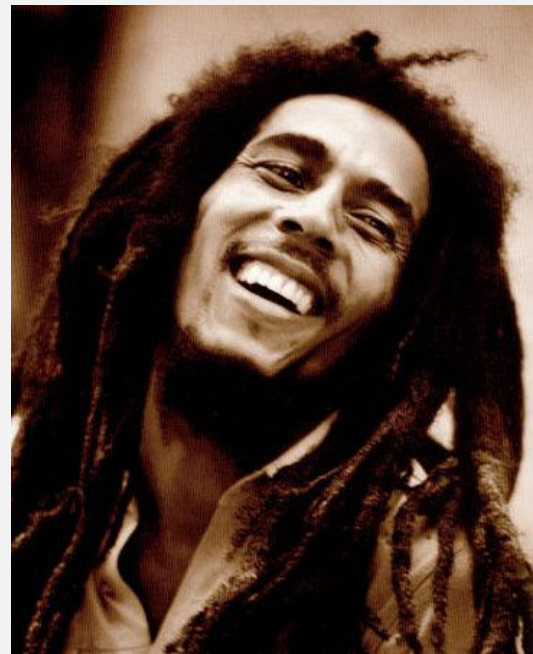
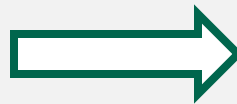
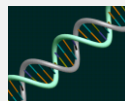
+2

+1

SEDUCE **SHY**

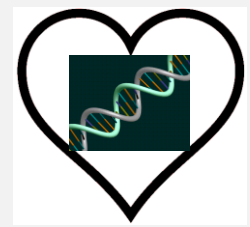


SEDUCE

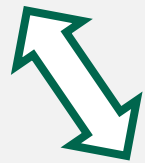




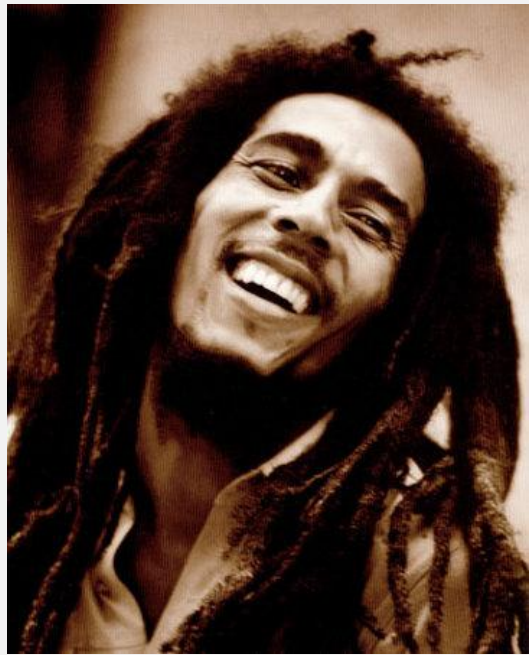
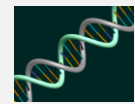
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SEDUCE



MULTI-ATTRIBUTE UTILITY

- **ATTRIBUTES ARE ALL COMPARABLE**
- **SHARED SCALES**





THE ILLUSION OF INNER LIFE

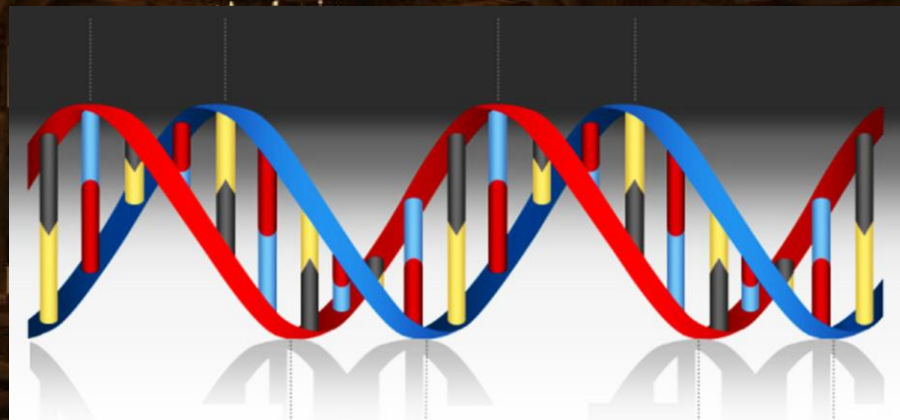
- **HEURISTICS**

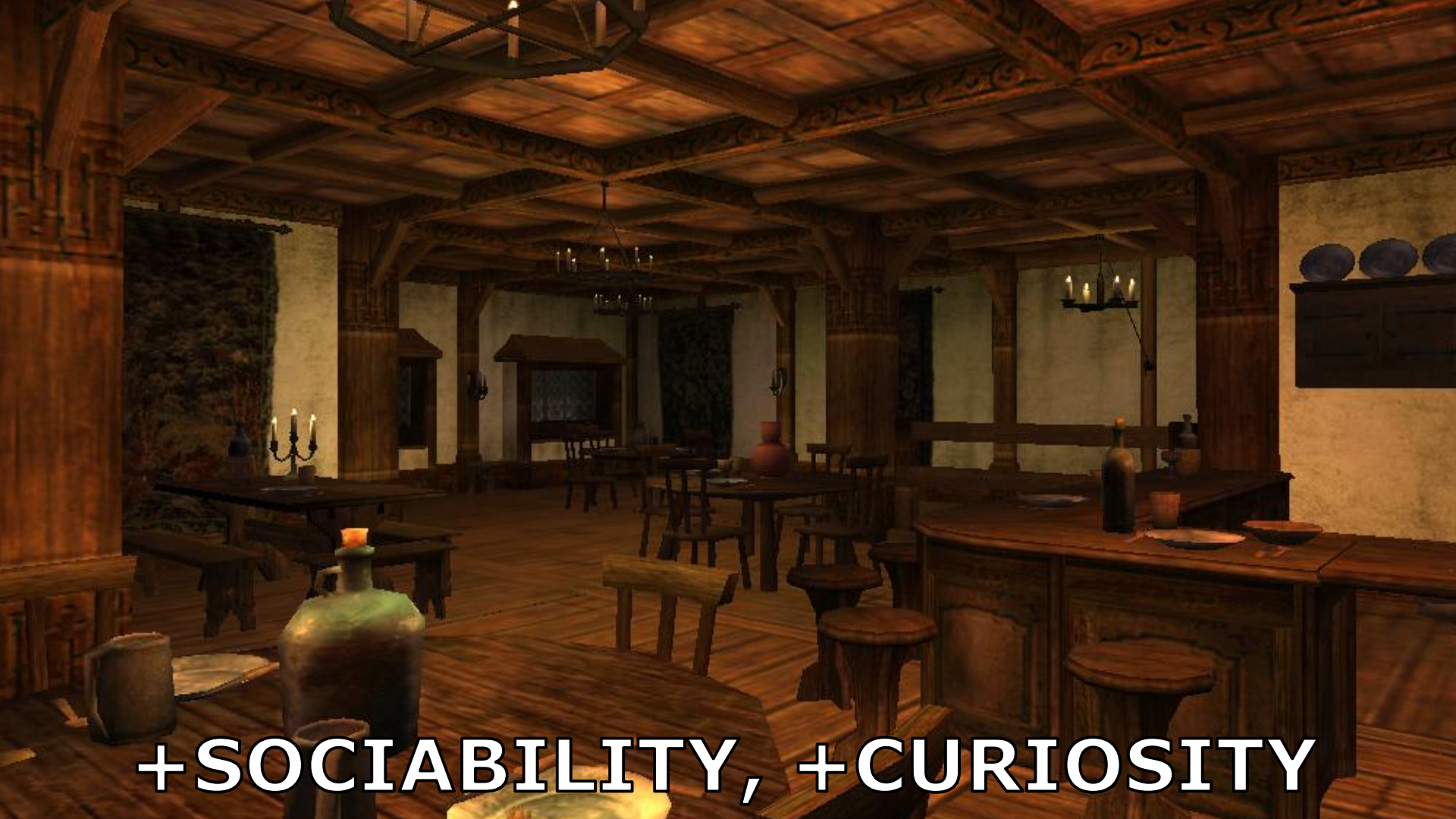
(e.g. CATEGORY PRIORITIES, LIKE IMMEDIATENESS)

- **DEEPER DNA COMPARISONS**

(e.g. TO COMPUTE WHAT A CHARACTER THINKS OF ANOTHER CHARACTER'S TRAITS)

- **COMPLEX BEHAVIORS THAT SIMULATE SOCIAL PROTOCOLS**
(SMART OBJECTS)





+SOCIABILITY, +CURIOSITY

The background image is a detailed, atmospheric rendering of a medieval-style tavern or inn. The interior is characterized by extensive woodwork, including a high, vaulted ceiling with exposed beams and decorative carvings. Several wooden tables and benches are arranged throughout the space, some with lit candles providing warm, ambient lighting. In the foreground, a wooden table holds a large, dark green ceramic jug and a small, round, light-colored object. To the right, a curved wooden bar is visible, with various bottles and a small bowl on the counter. The overall mood is rustic and historical.

NOTE: TRAITS, NOT COMPONENTS

Two large, white, 3D-style arrows originate from the bottom center of the text 'NOTE: TRAITS, NOT COMPONENTS'. One arrow points diagonally down and to the left, while the other points diagonally down and to the right. They converge towards the text '+SOCIABILITY, +CURIOSITY' at the bottom of the image.

+SOCIABILITY, +CURIOSITY



+FORMALITY, -TRUST

A photograph of a calm pond surrounded by dense green foliage. The water is still, reflecting the surrounding trees. The scene is framed by dark, leafy branches in the foreground, creating a sense of being hidden or secluded. In the background, a white fence is visible along the edge of the pond.

+LOVE, +SECRET



EXPRESSIVENESS







ANGER

+



JOY

=



CRUELTY



FEAR

+



SURPRISE

=



SPOOKED



ANGER

+



SADNESS

=



BETRAYAL



JOY

+



SADNESS

=



FAINT HOPE



ANGER

+



SURPRISE

=



"WHAT THE --?!"



JOY

+



SURPRISE

=



AMAZEMENT



DISGUST

+



FEAR

=



HORROR



SADNESS

+



SURPRISE

=



DISAPPOINTMENT



TRAIT COMPONENTS CAN QUALIFY:

- BEHAVIORS
- CHARACTER TRAITS
- CHARACTER MOODS
- RELATIONSHIPS
- CHARACTER GOALS AND NEEDS
- CHARACTER GROUPS / FACTIONS
- LOCATIONS / AMBIANCES
- ITEMS & GAME EFFECTS' PROPERTIES
- ...



BLADE OF COURAGE

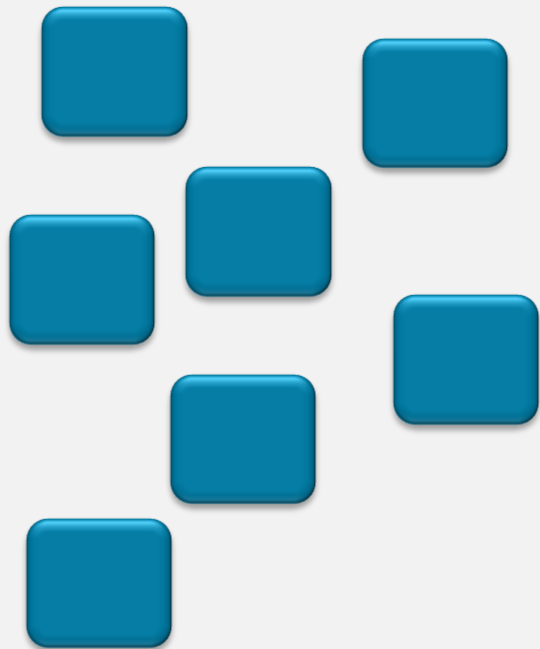


JUSTICE LEAGUE

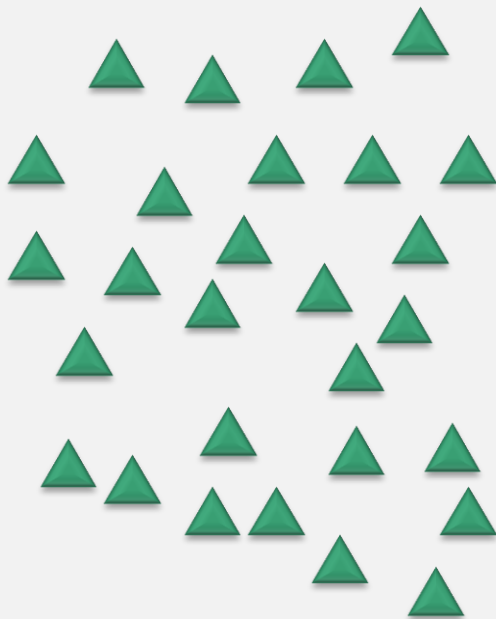


SCALABILITY

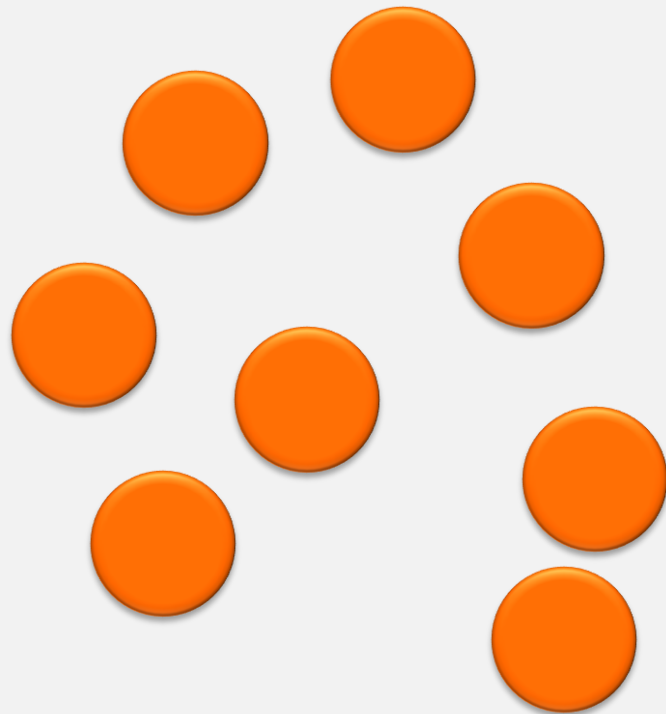
BEHAVIORS



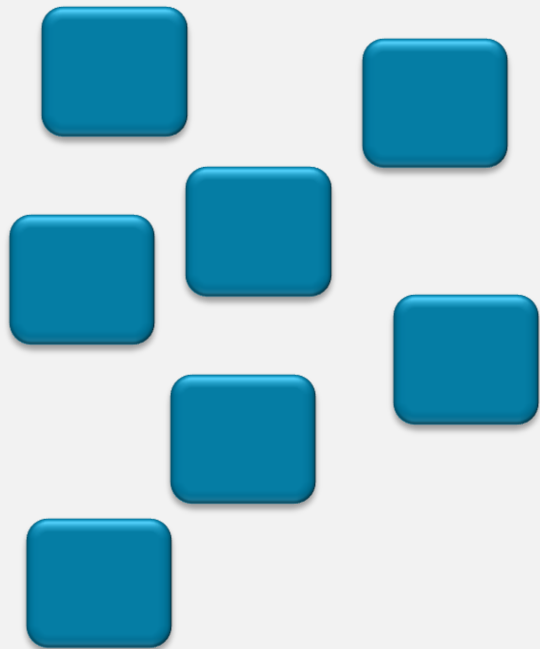
RULES



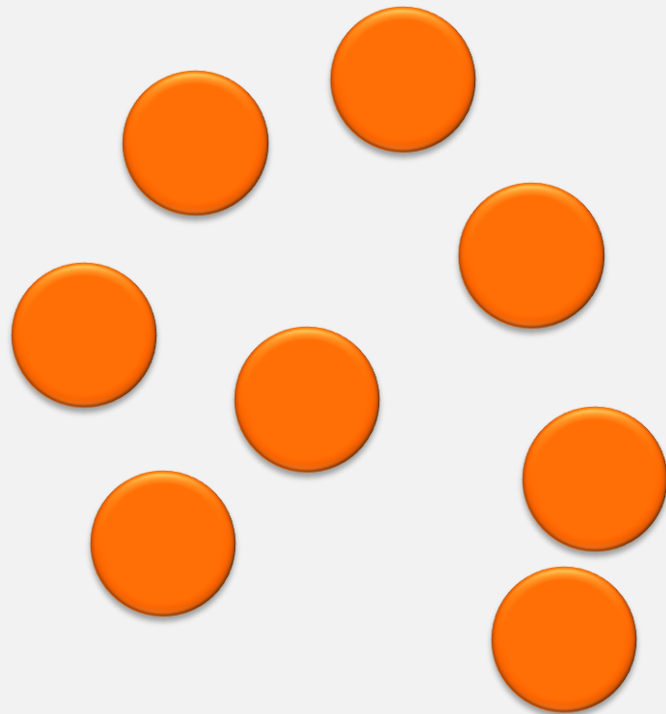
TRAITS



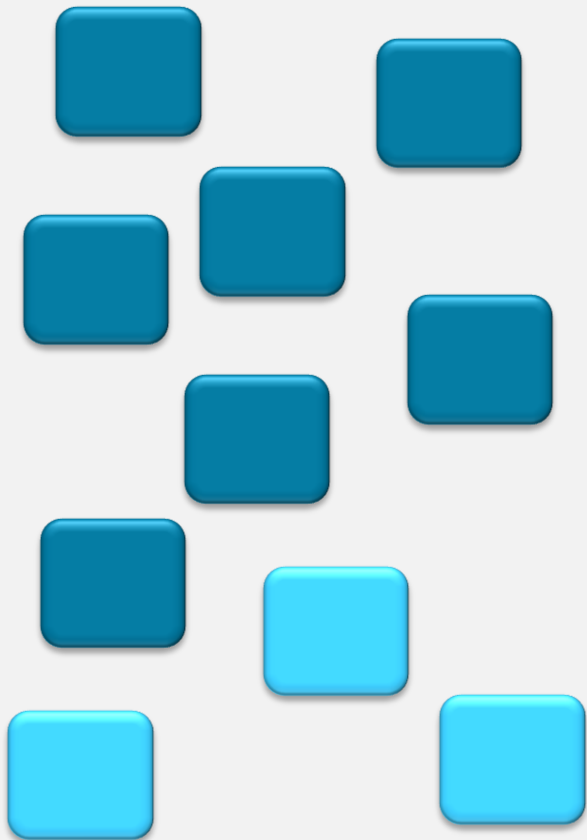
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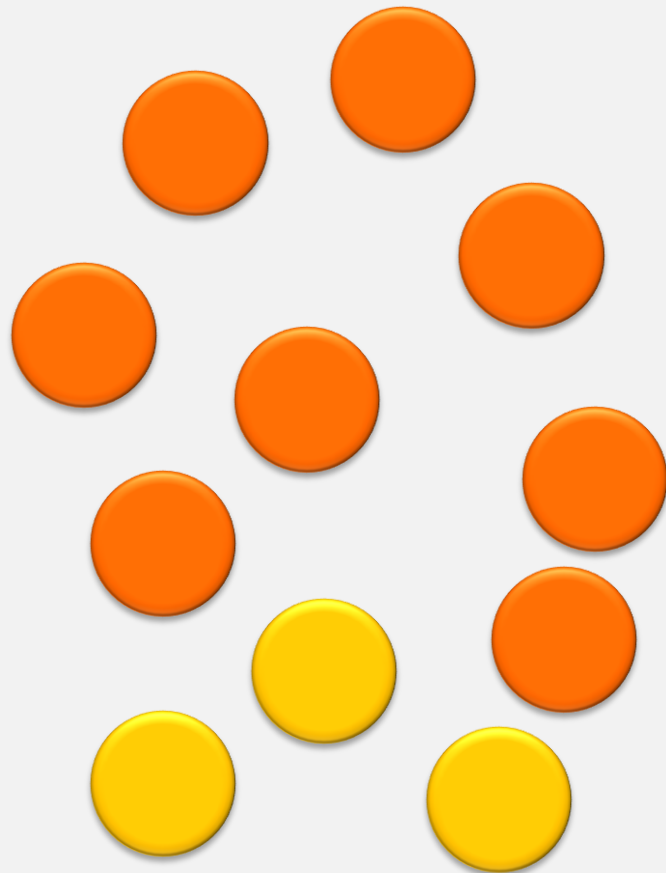
TRAITS



BEHAVIORS



TRAITS



NEXT STEPS:

- PLANNING
- NEGOTIATION

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THANK YOU