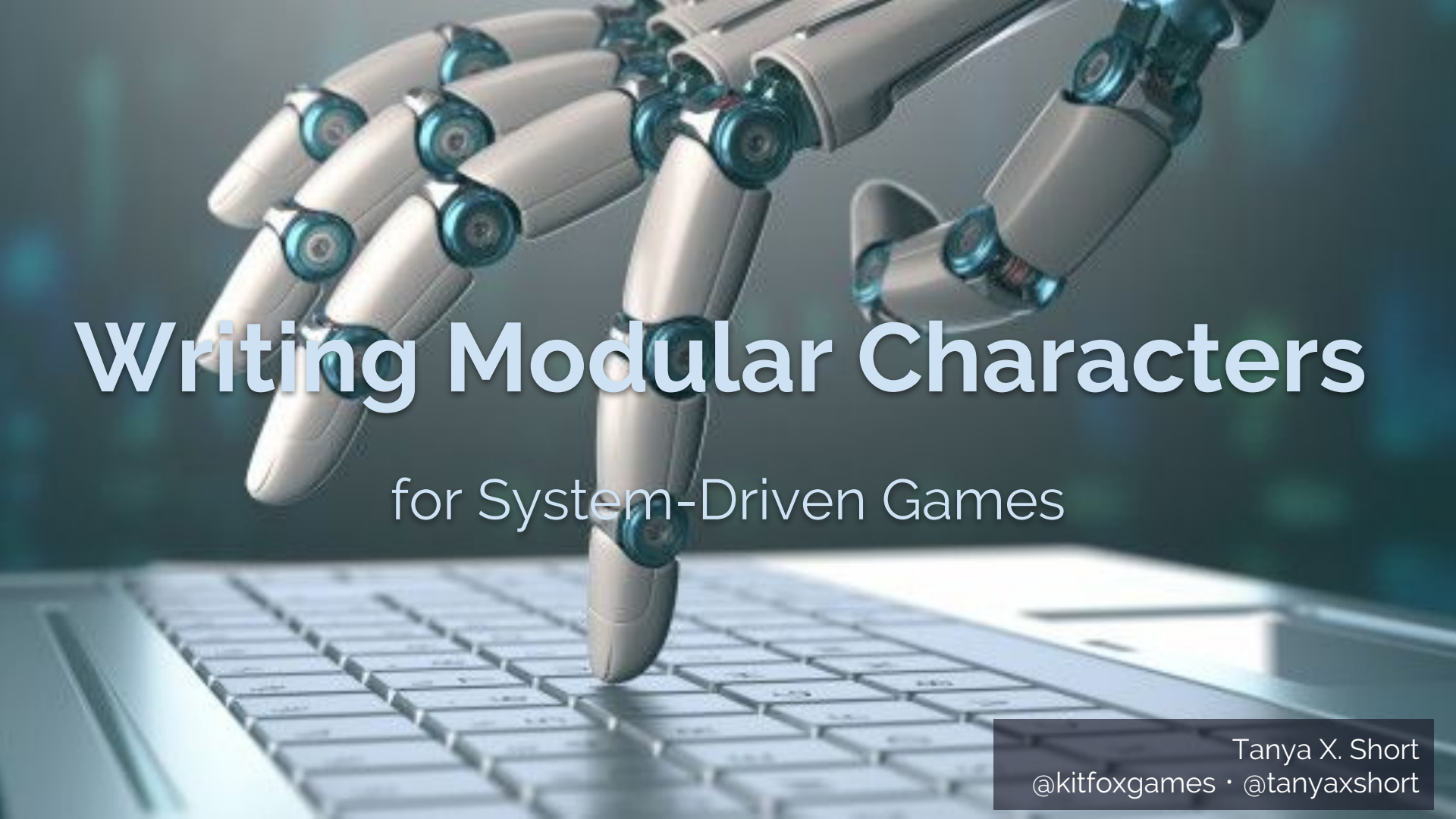
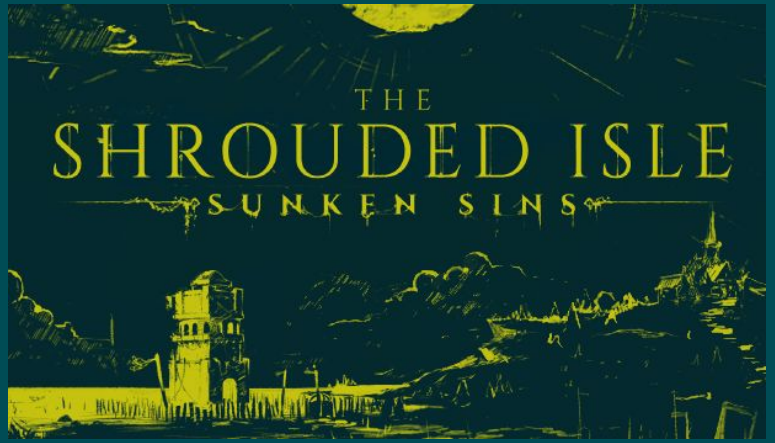
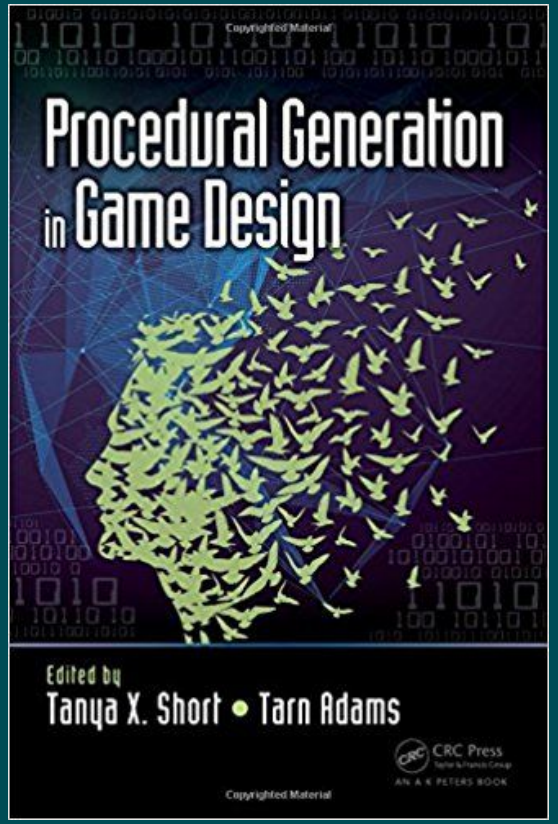


Writing Modular Characters

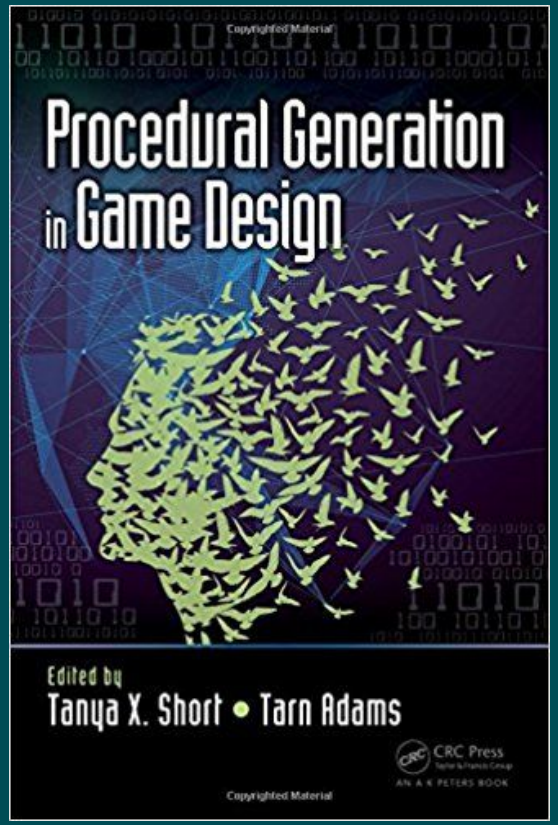
for System-Driven Games

Tanya X. Short
@kitfoxgames · @tanyaxshort





Tanya X. Short
@kitfoxgames • @tanyaxshort



Procedural Storytelling in Game Design (2019)

Tanya X. Short
@kitfoxgames • @tanyaxshort

Primary Sources

Emily Short (Spirit AI): @emshort

Jason Grinblat (Caves of Qud): @ptychomancer

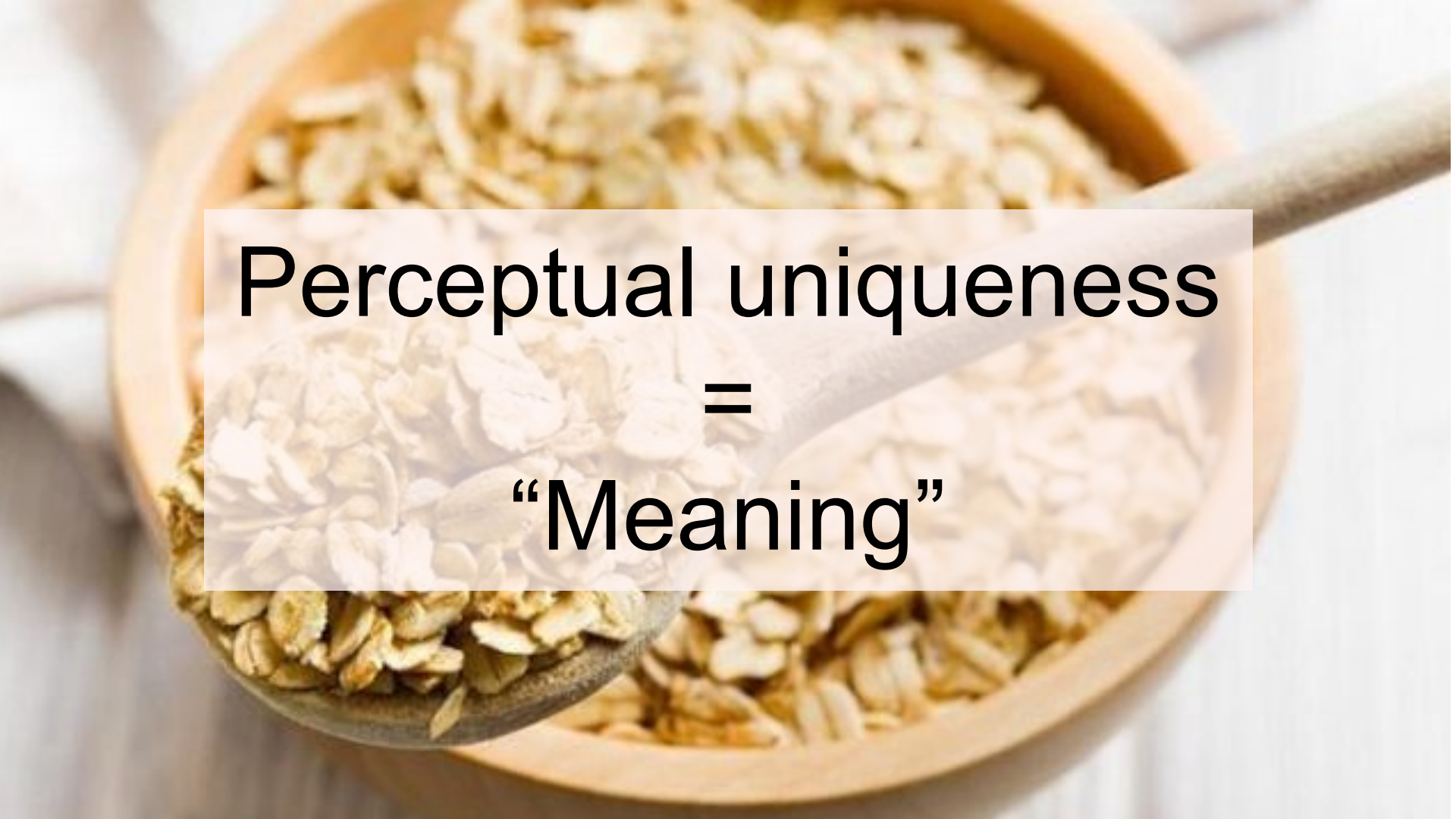
A + B + C = ????

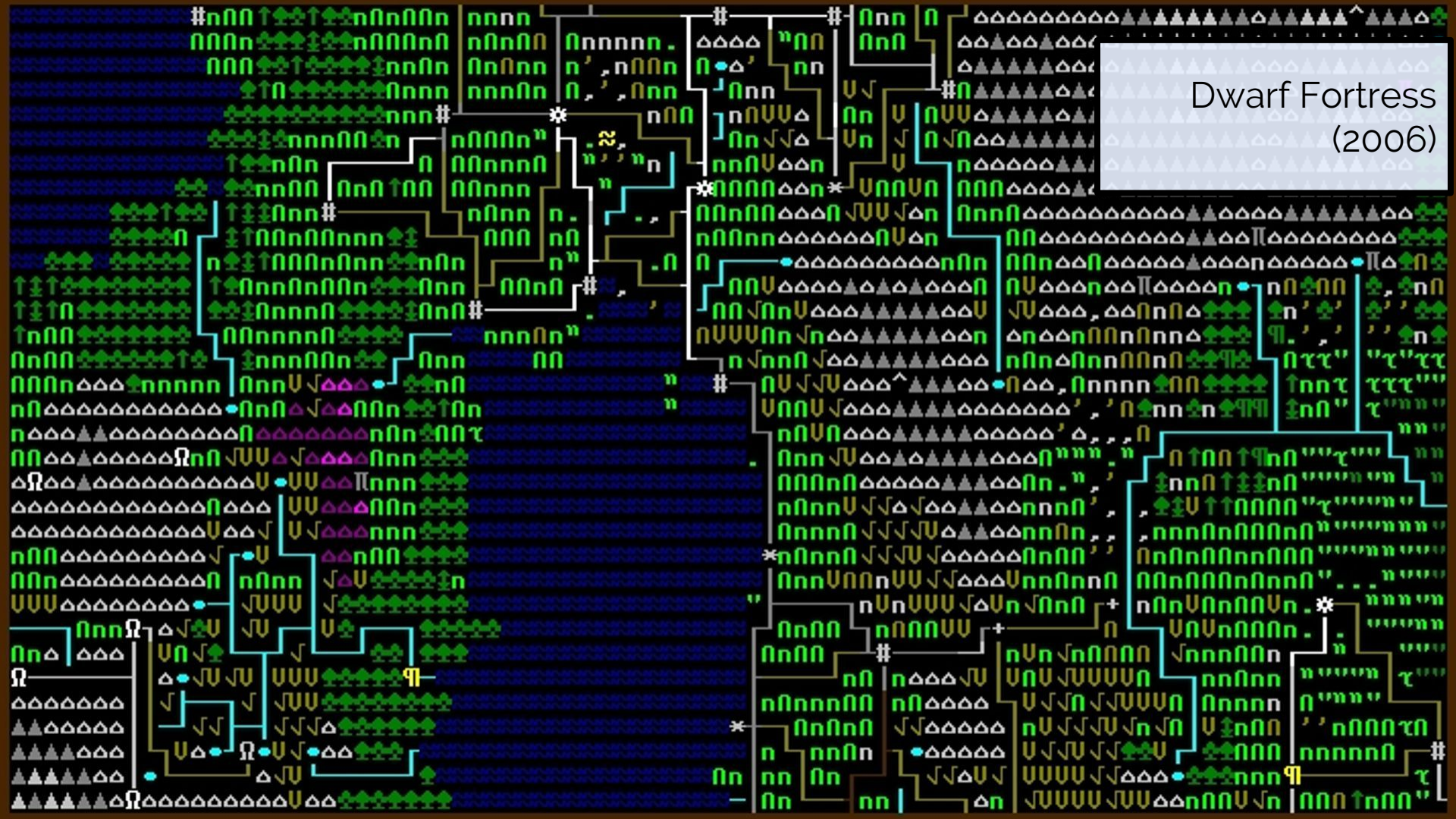
big + beautiful + smelly = ???

big + beautiful + smelly = NPC#4241?

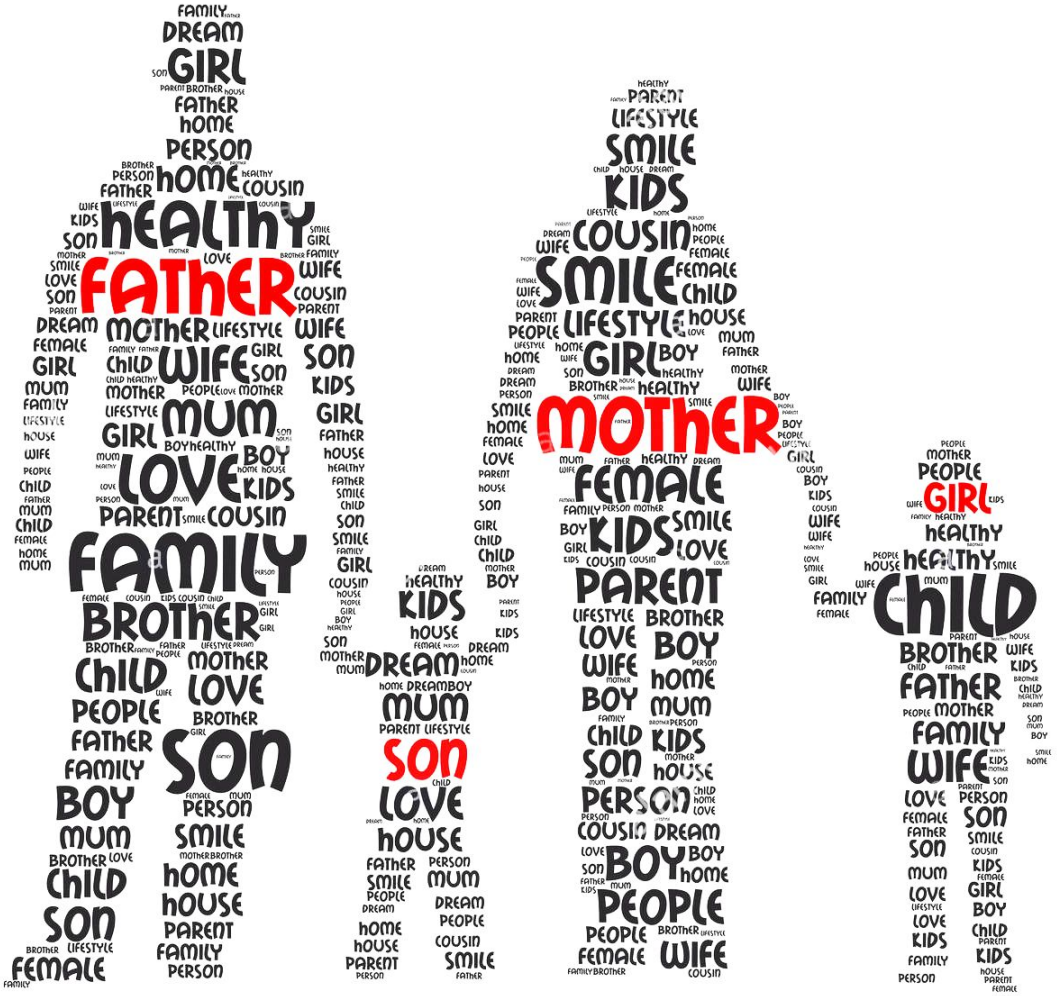
The 10,000 Bowls of Oatmeal Problem

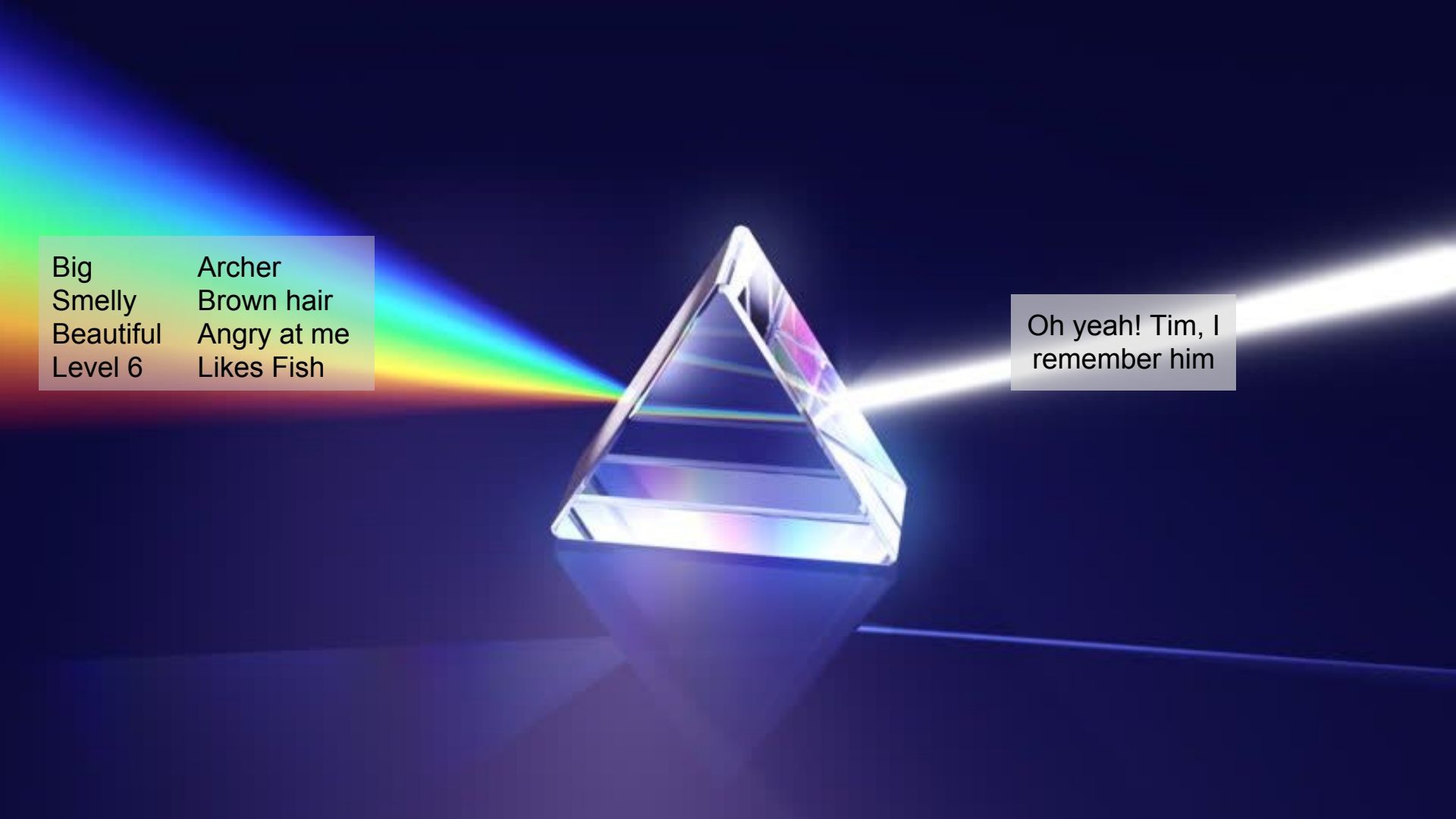
(Kate Compton)


Perceptual uniqueness
=
“Meaning”


Dwarf Fortress
(2006)

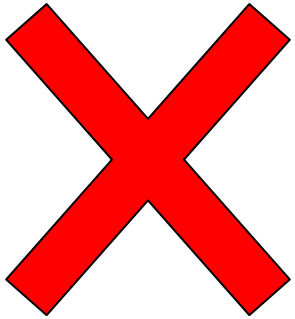
Unknown Peoples
@neighbour_civs
Following
The Neighbouring Band. They refer to courtship as the 'refined way.' They count 947 years since the return of the Master of Moss.
10:33 PM - 6 Feb 2018
4 Retweets 12 Likes
1
4
12
Tweet your reply
Brian Swift @harborpirate · 21h
Replying to @neighbour_civs
What wonder have they built or discovered?
1
Unknown Peoples @neighbour_civs · 21h
Great works of theater are exhibited at their Fearsome Temple.


FAMILY
DREAM
GIRL
FATHER
HOME
PERSON
HOME
HEALTHY
FATHER
MOTHER
WIFE
MUM
LOVE
FAMILY
BROTHER
CHILD
LOVE
PEOPLE
SON
BOY
MUM
CHILD
SON
FEMALE
SMILE
HOME
HOUSE
PARENT
FAMILY
PERSON
HEALTHY
KIDS
DREAM
MUM
SON
LOVE
HOUSE
PARENT
SMILE
PARENT
LIFESTYLE
SMILE
KIDS
COUSIN
SMILE
LIFESTYLE
GIRL
MOTHER
FEMALE
KIDS
PARENT
LIFESTYLE
BROTHER
LOVE
BOY
WIFE
HOME
BOY
MUM
CHILD
KIDS
SON
HOUSE
PERSON
COUSIN
DREAM
BOY
BOY
HOME
PEOPLE
PEOPLE
FEMALE
WIFE
PEOPLE
GIRL
HEALTHY
CHILD
BROTHER
FATHER
FAMILY
WIFE
LOVE
PERSON
SON
SMILE
KIDS
GIRL
BOY
CHILD
KIDS

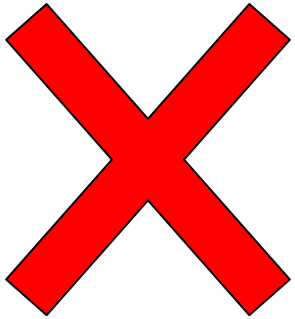

Big
Smelly
Beautiful
Level 6
Archer
Brown hair
Angry at me
Likes Fish
Oh yeah! Tim, I remember him

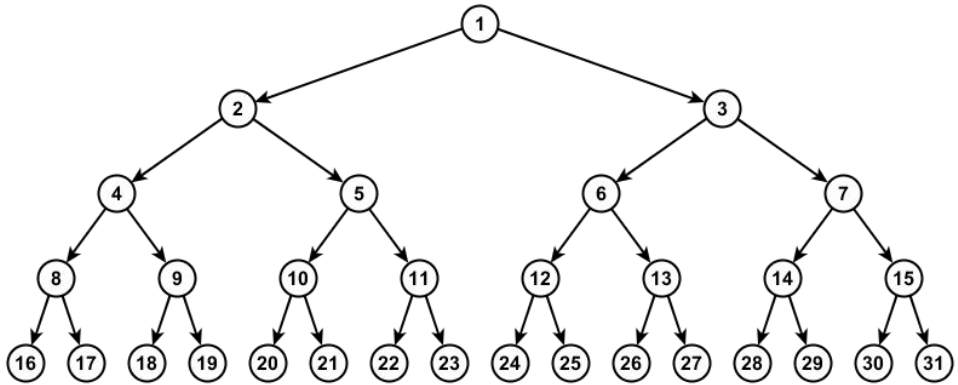
1. Build orthogonally
2. Create higher-order meaning
3. Surface meaning
4. Iterate with co-author(s)

Build Orthogonally

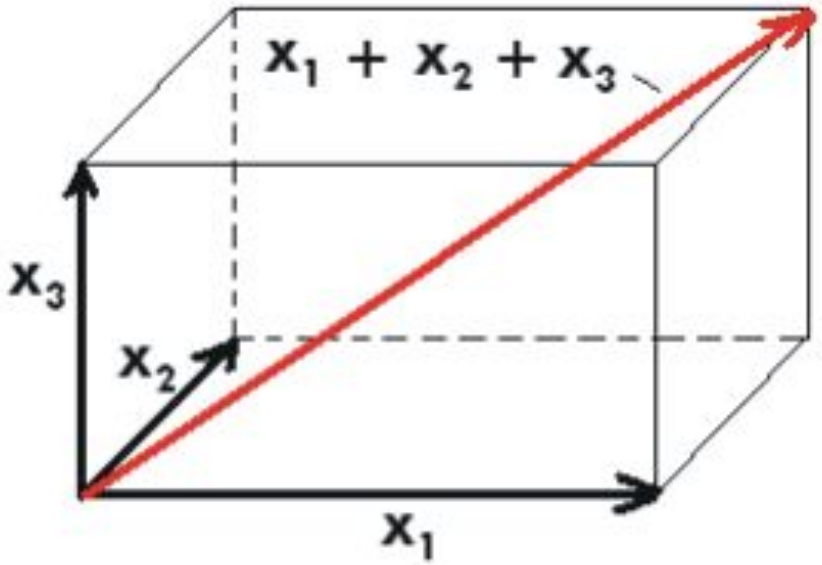


BUILD
ORTHOGONALLY

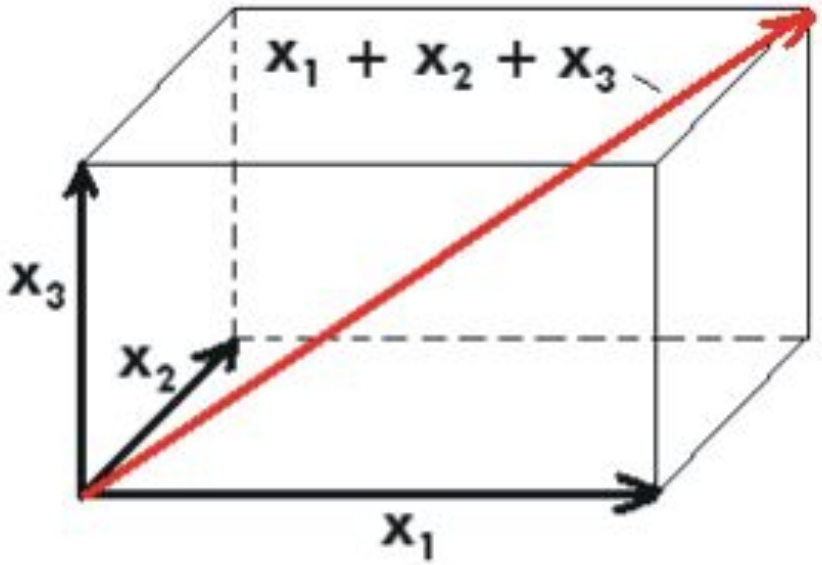




BUILD
ORTHOGONALLY



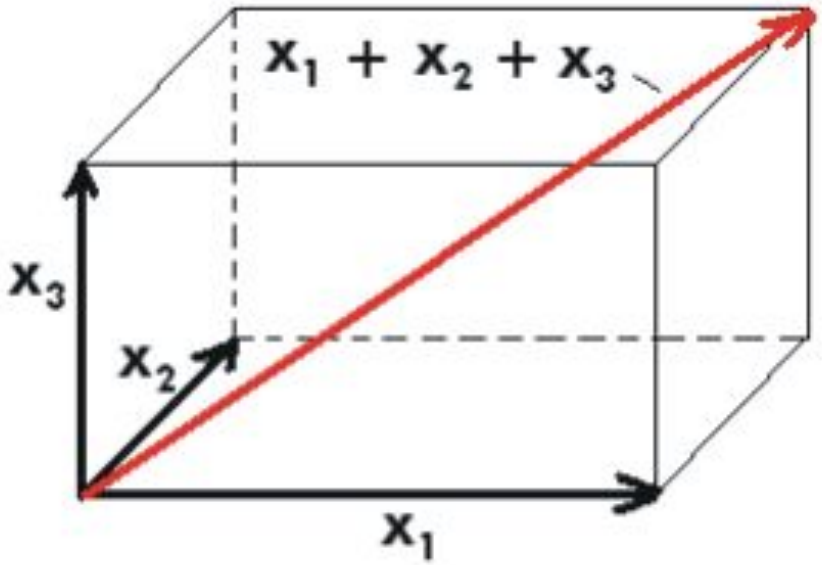
BUILD
ORTHOGONALLY



“Story volume”

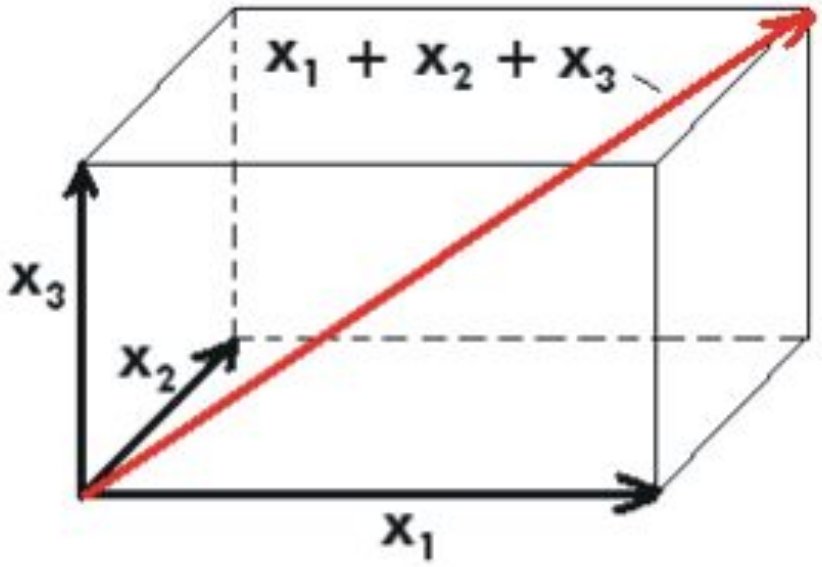
BUILD
ORTHOGONALLY

- Project Horseshoe 2015

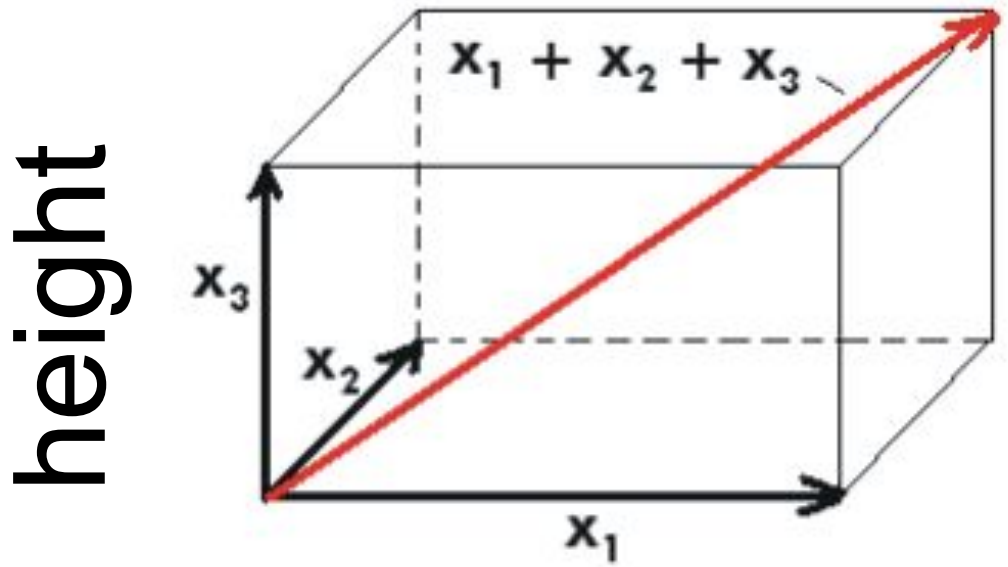


BUILD
ORTHOGONALLY

Tall, Short
Heavy, Thin



BUILD
ORTHOGONALLY



BUILD
ORTHOGONALLY

Flirtiness
Neuroticism
Imagination
Extraversion

BUILD
ORTHOGONALLY

Flirtiness
Neuroticism
Imagination
Extraversion

BUILD
ORTHOGONALLY

Romantic interest

Neuroticism

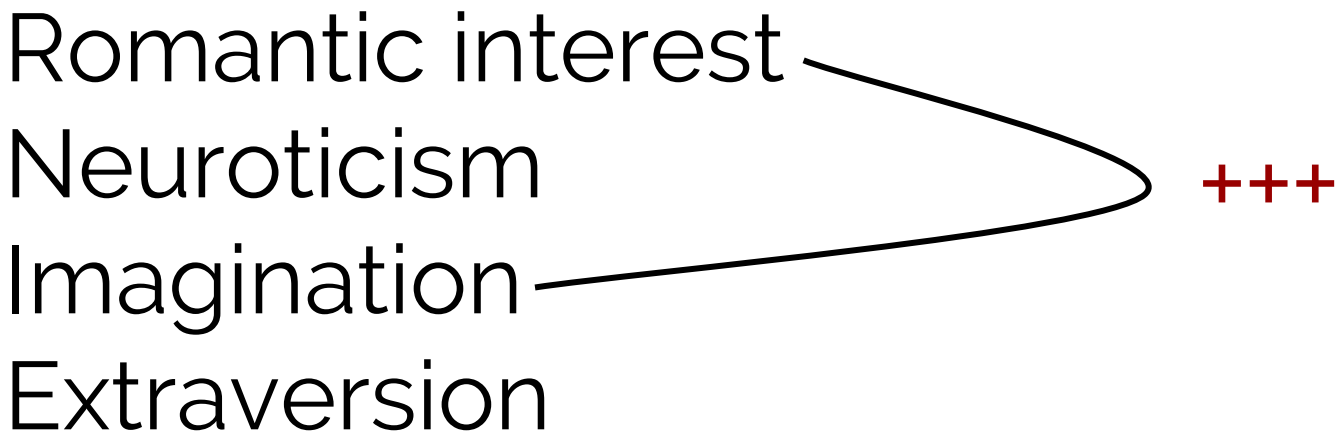
Imagination

Extraversion

BUILD
ORTHOGONALLY

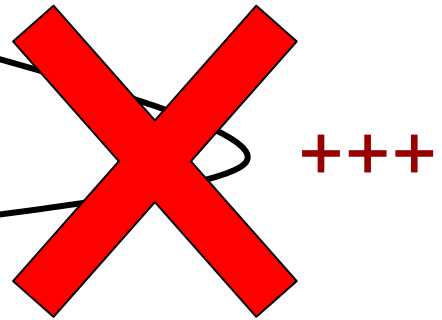
Romantic interest
Neuroticism
Imagination
Extraversion

BUILD
ORTHOGONALLY



BUILD
ORTHOGONALLY

Romantic interest
Neuroticism
Imagination
Extraversion



BUILD
ORTHOGONALLY

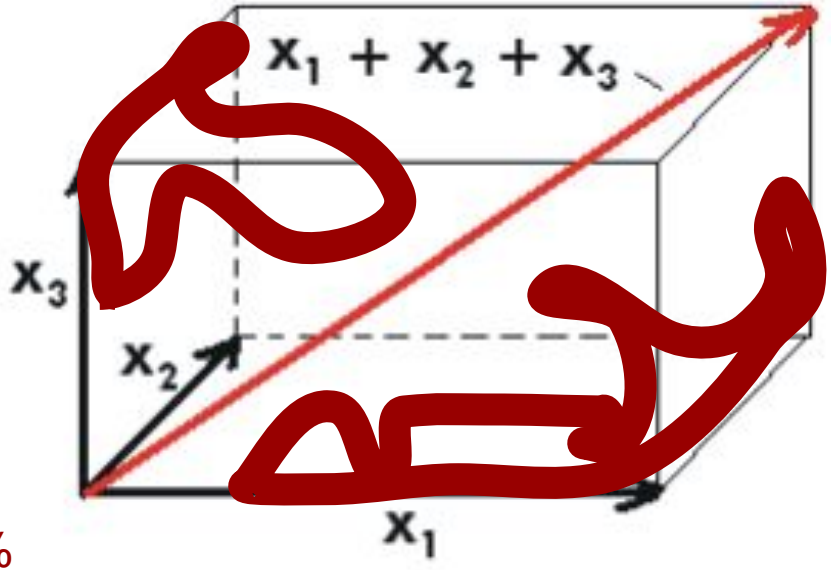
Middle-earth:
Shadow of Mordor
(2014)
8
Zunn the Poet
Marauder Marksman

The Shrouded Isle
(2017)

BUILD
ORTHOGONALLY

Moon Hunters (2016)

outgoing = -10% solo video games owned
+10% friends



Ambition = more likely to be hardworking

imagination = more likely romantic interest

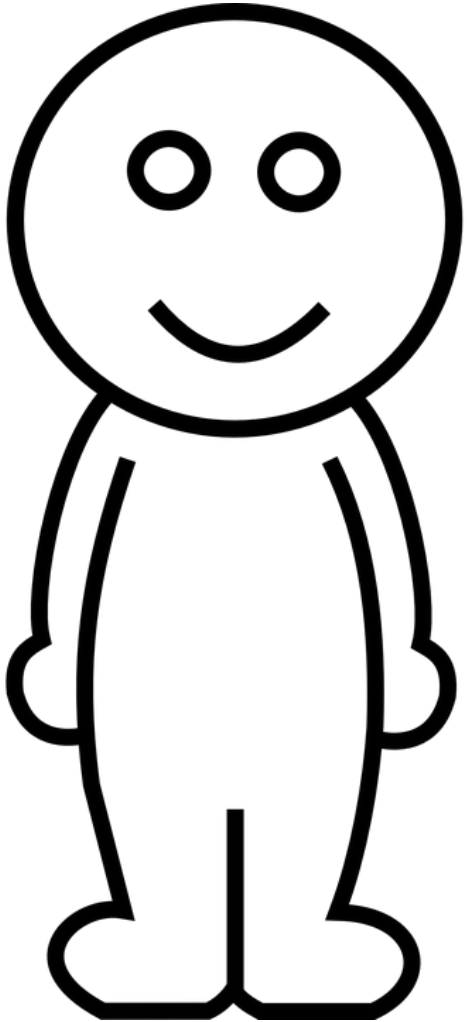
Canadian = +500% apologizing skill

neurotic = more likely sweaty

BUILD ORTHOGONALLY

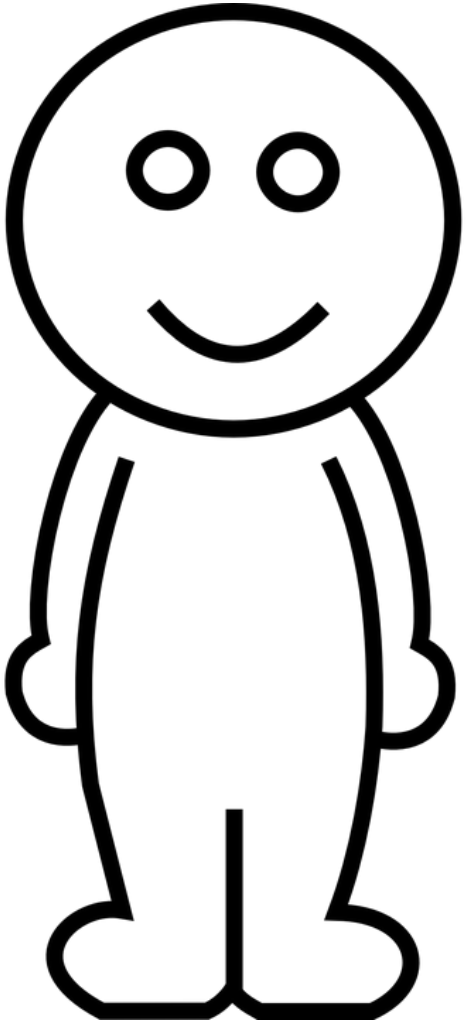
Create Higher-Order Meaning

Physical attributes
Personality
Behaviour
Occupation
Hobbies
Memories
Relationships
Opinions
Secrets
Character arc/transformations



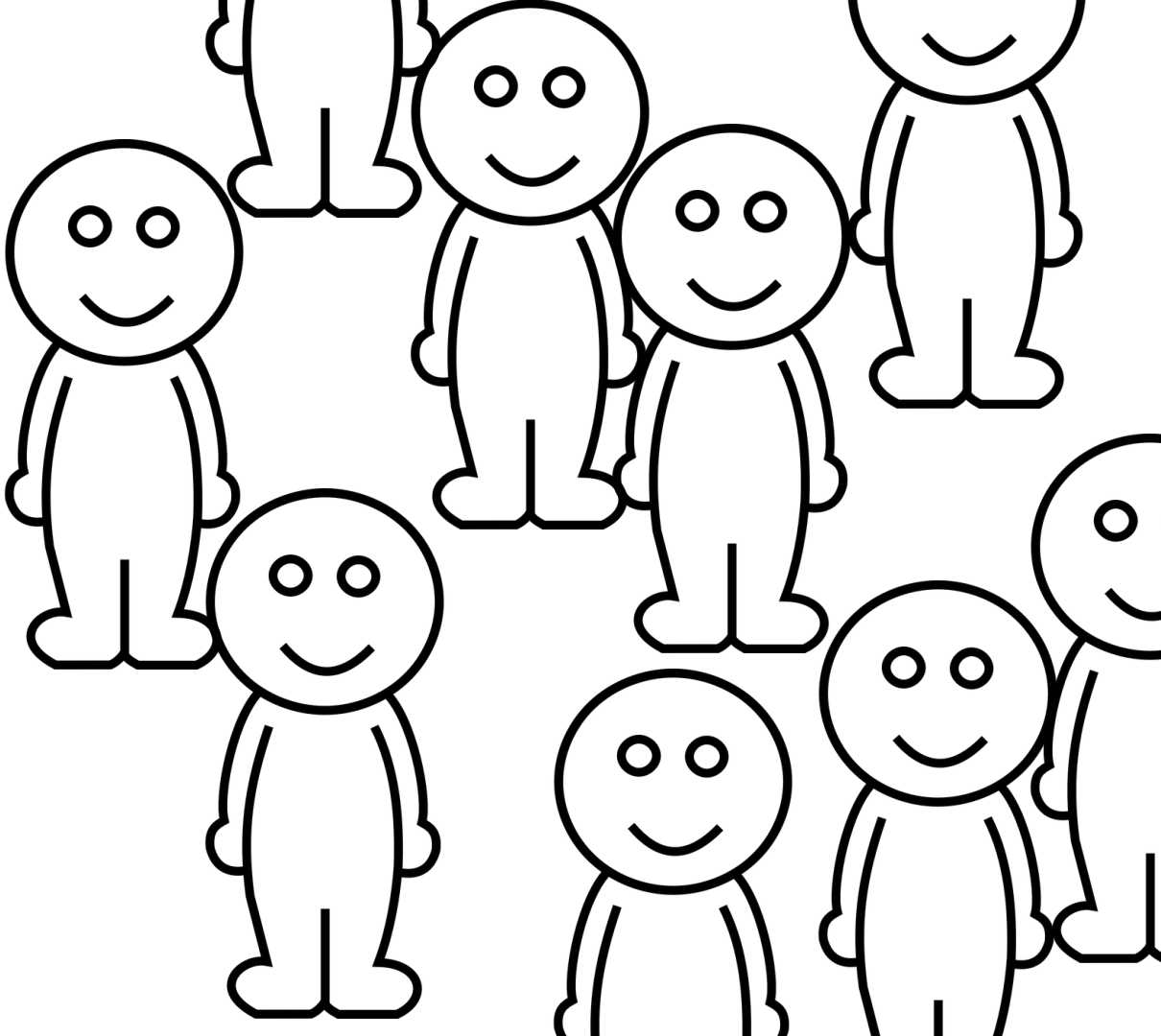
HIGHER-ORDER MEANING

Physical attributes	Tall, wide
Personality	Outgoing, neurotic
Current Status	Flying a starship
Occupation	Pilot
Hobbies	Plays video games
Memories	Fond of home planet
Relationships	In love affair
Opinions	Enjoys political debate
Secrets	Stole co-pilot’s lunch yesterday
Character arc	Slowly becoming jaded
Childhood	Loving older sister



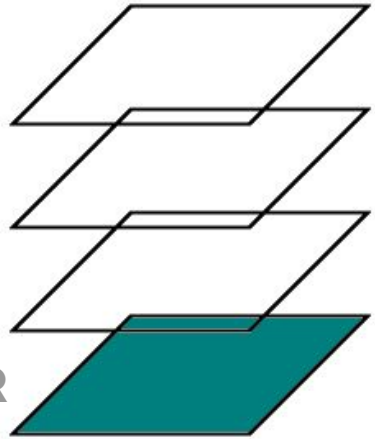
HIGHER-ORDER MEANING

Physical attributes
Personality
Current Status
Occupation
Hobbies
Memories
Relationships
Opinions
Secrets
Character arc
Childhood

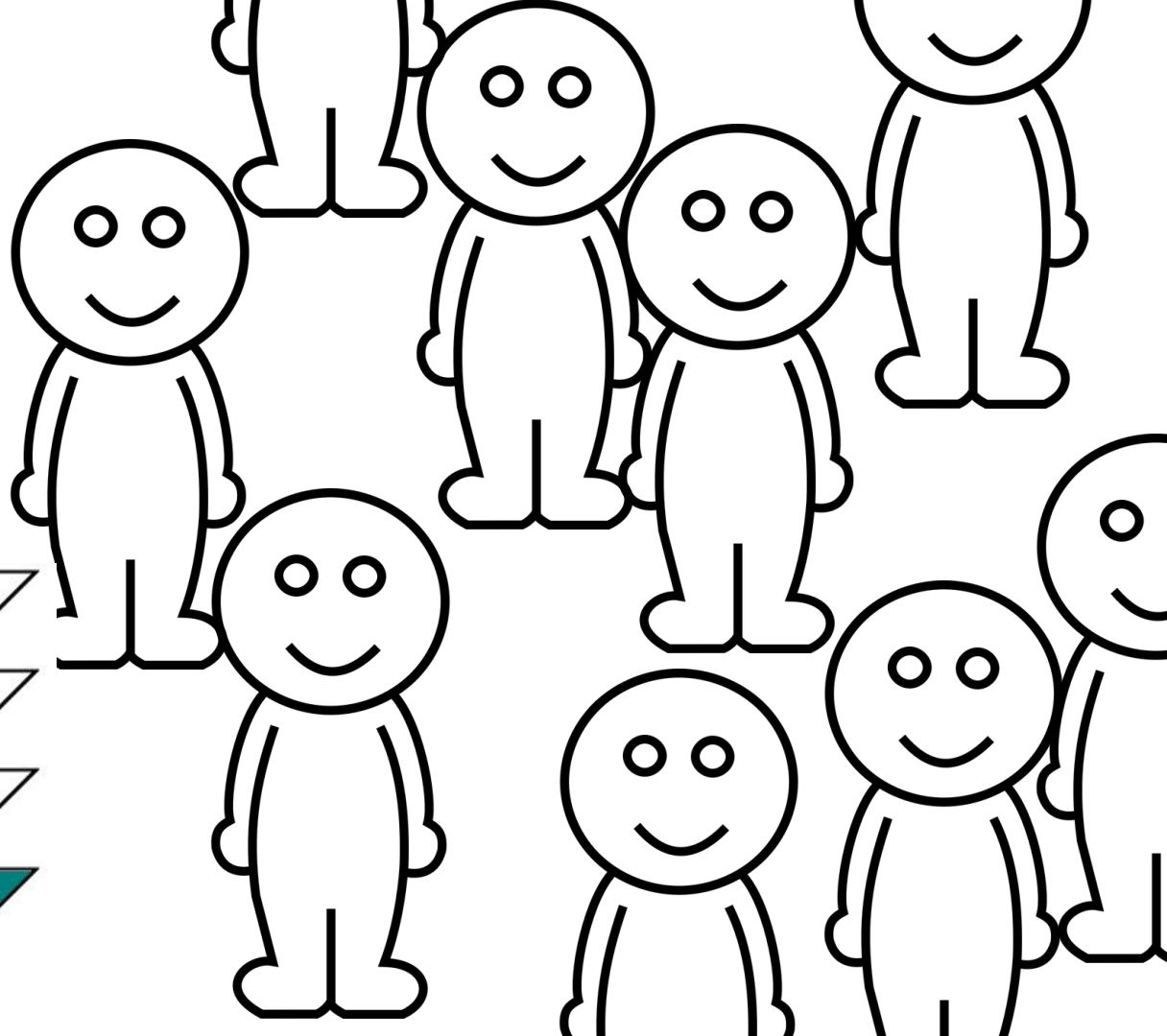


HIGHER-ORDER MEANING

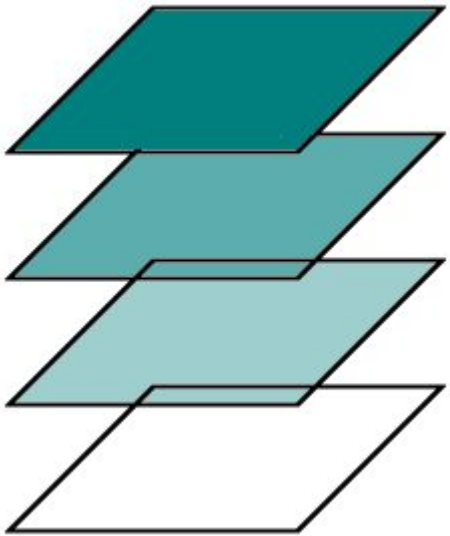
Physical attributes
Personality
Current Status
Occupation
Hobbies
Memories
Relationships
Opinions
Secrets
Character arc
Childhood

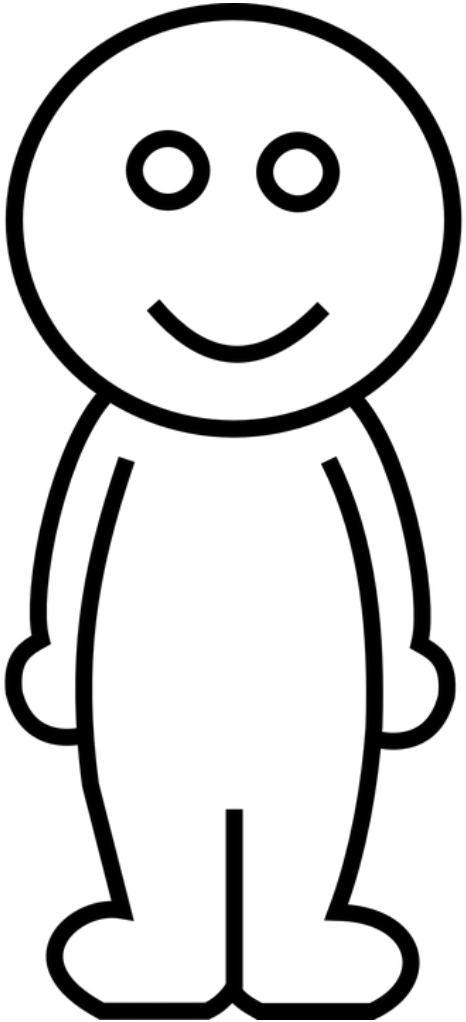


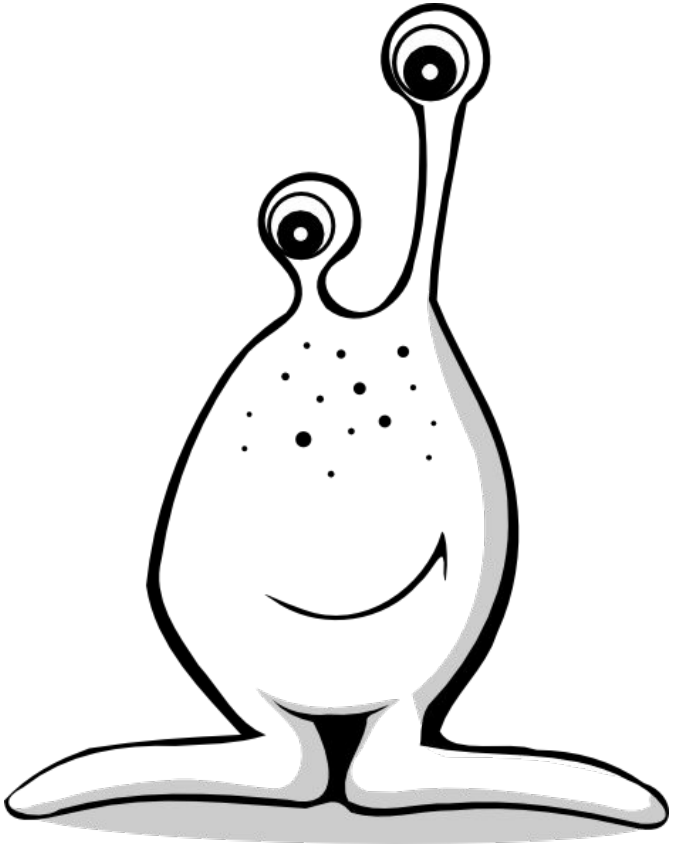
HIGHER-ORDER MEANING



HIGHER-ORDER MEANING





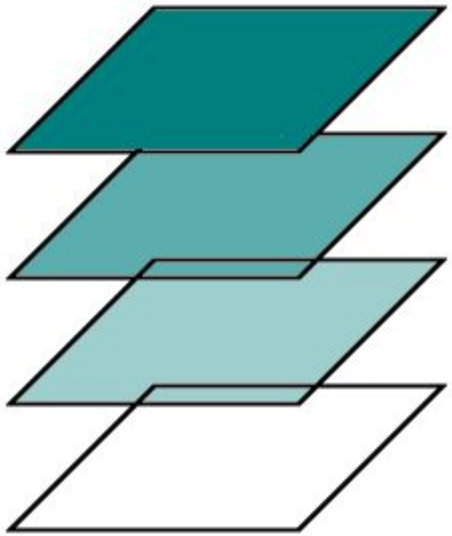


HIGHER-ORDER
MEANING

HIGHER-ORDER
MEANING

HIGHER-ORDER MEANING

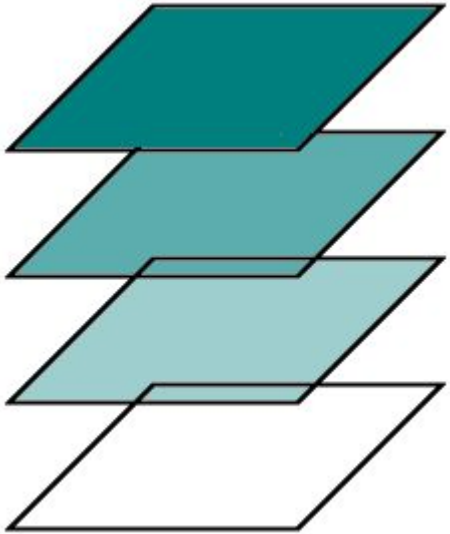
HIGHER-ORDER MEANING



HIGHER-ORDER
MEANING

The Annals of the Parrigues

by Emily Short

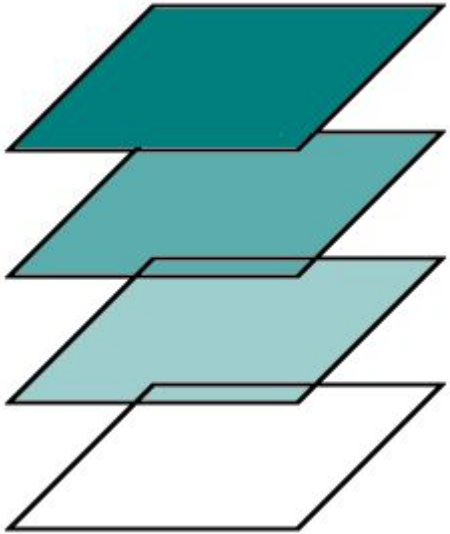


- Salt
- Beeswax
- Venom
- Mushroom
- Egg

HIGHER-ORDER MEANING

The Annals of the Parrigues

by Emily Short



- Salt
- Beeswax
- Venom - colorful, deceitful, serpentine
- Mushroom
- Egg

HIGHER-ORDER MEANING

Healing
Flexibility
Forgiveness

Ideas
Movement
Chance

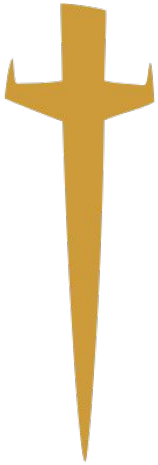
Passion
Conflict
Destruction

Growth
Interdependence
Instinct

HIGHER-ORDER MEANING

wealth
physicality
family

ambition
power
energy



conflict
intellect
reason

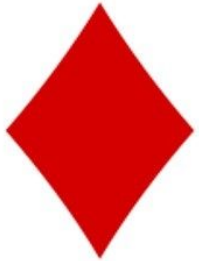
emotion
pleasure
instinct

HIGHER-ORDER MEANING

Power
Conflict
Death

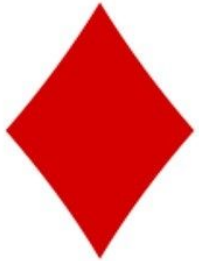
Emotion
Romance
Empathy

Wealth
Physicality
Resources

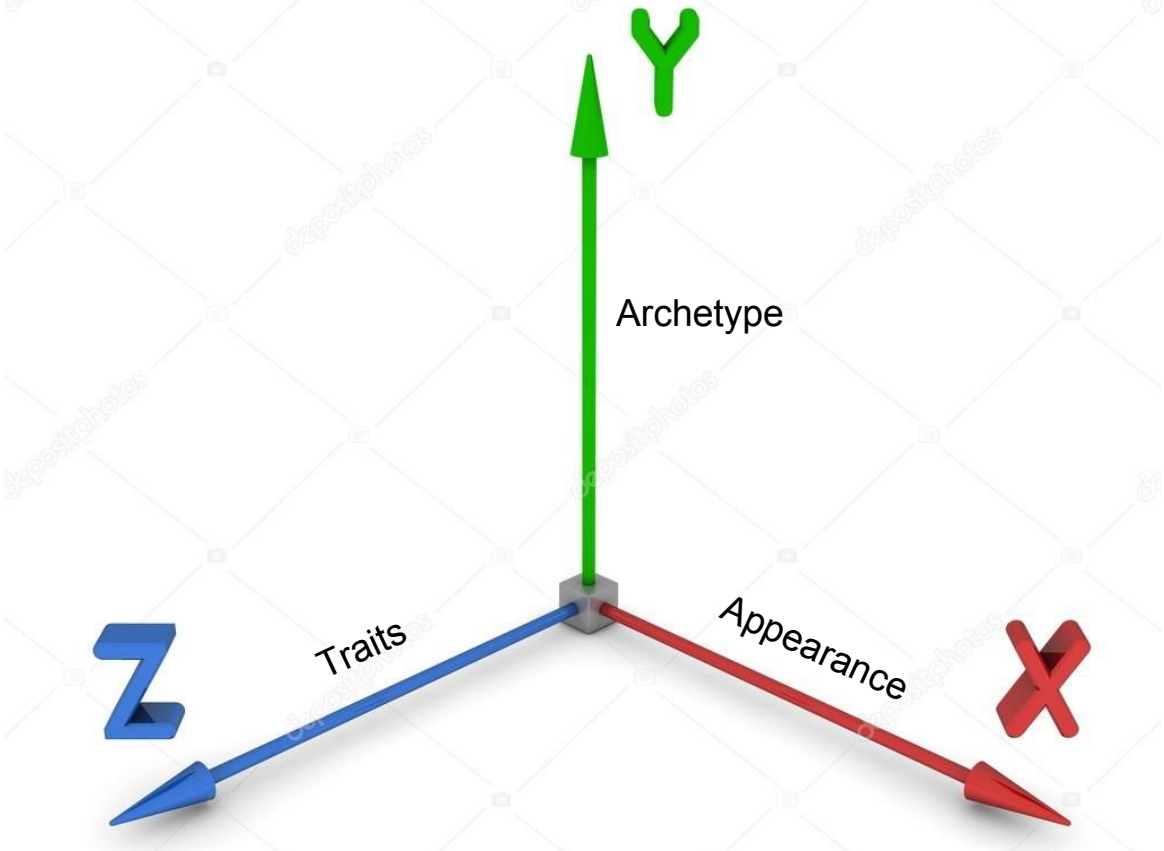


Intellect
Conversation
Plants?

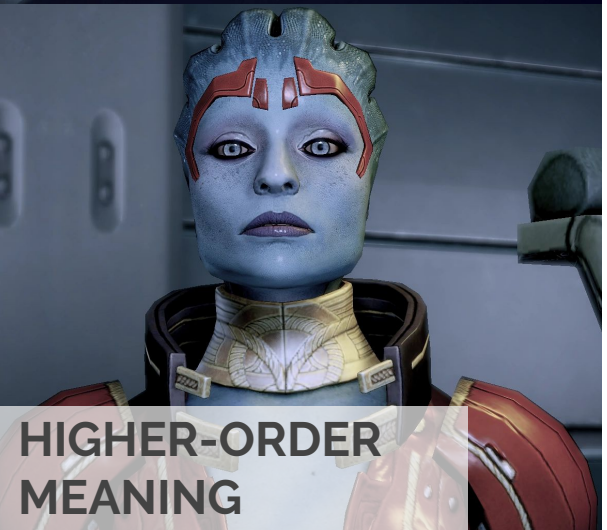
HIGHER-ORDER MEANING

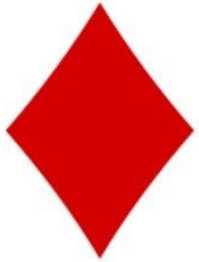


HIGHER-ORDER MEANING



HIGHER-ORDER MEANING





HIGHER-ORDER MEANING

Moon Hunters (2016)

Surface Meaning First

Caves of Qud (2015)

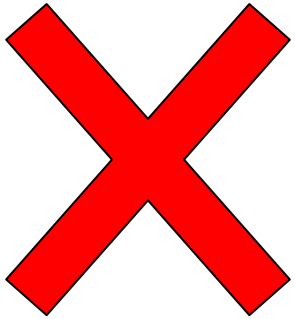
SURFACE MEANING

SURFACE
MEANING

Idealist
2 children
Composer
Hungry
Strong
Male
Agile
Teacher
Lonely
Female
Grieving
Doctor
Scientist
Gullible
Irritable
Angry
Deaf
Pregnant
Cruel
Married
Loves milk
Drunk
Cultist
Texan
Vegan
Dancer
Logical
Lawful
Outgoing
Sterile
Autistic
Widow
Elder
Wealthy
Shy
3 cats
Hedonist
Wounded
Kind
Criminal
Violent
Ambitious
SURFACE
MEANING

Greetings...

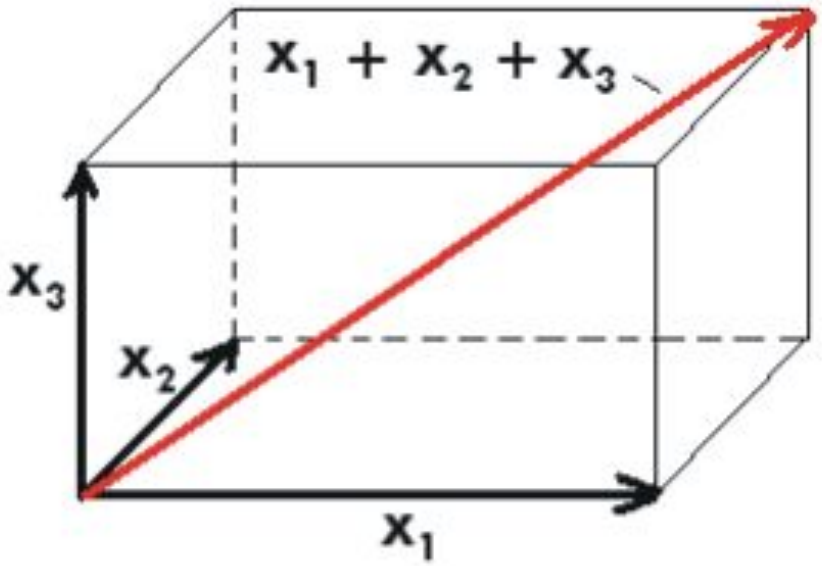
if	then
...low level	“Pitiful newbie!”
...set flag	“I remember you! You killed my father!”
...multiplayer	“Ah, you brought friends!”
...has object	“Nice sword!”



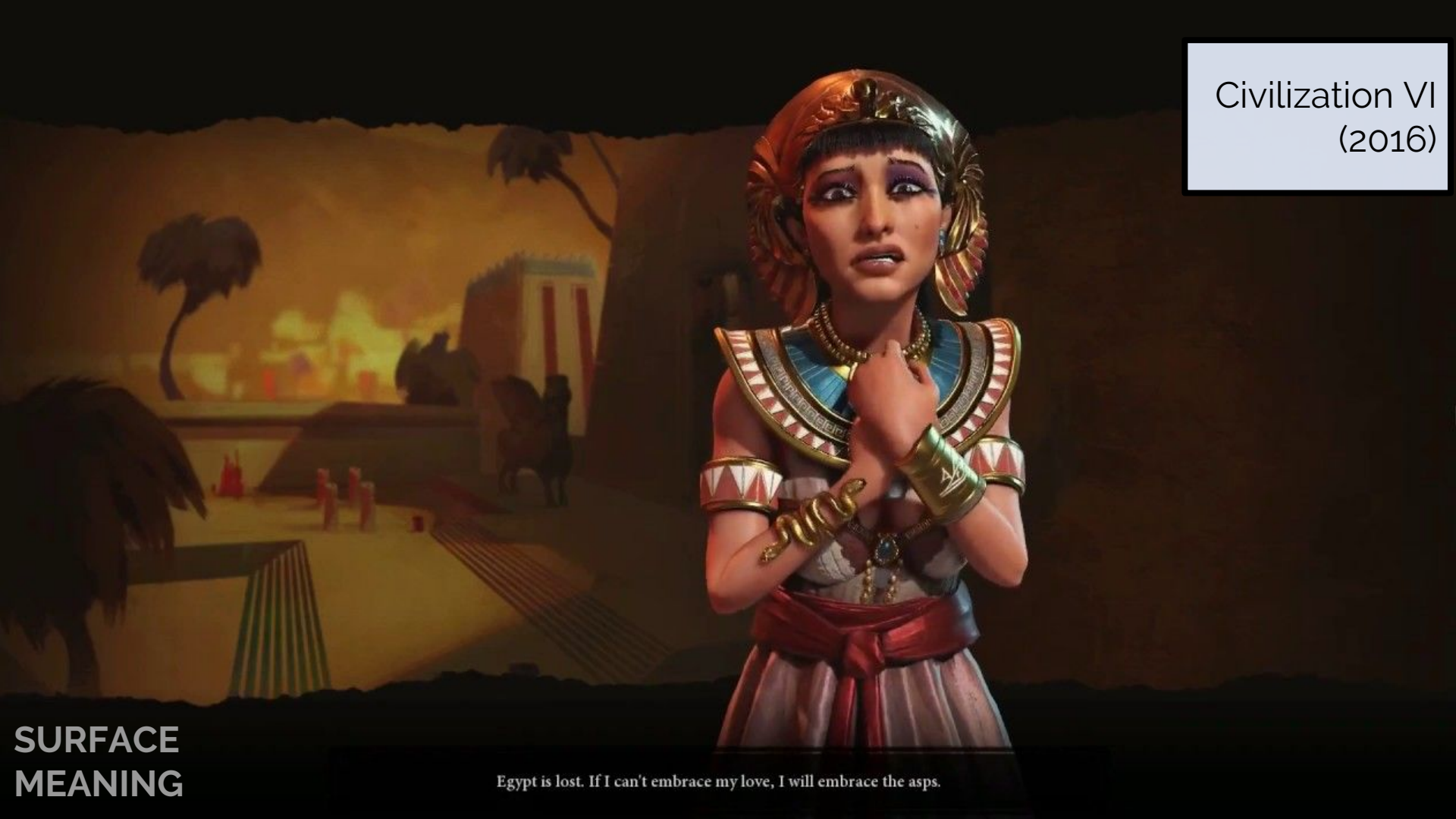
Greetings...

if	then
...low level	“Pitiful newbie!”
...set flag	“I remember you! You killed my father!”
...multiplayer	“Ah, you brought friends!”
...has object	“Nice sword!”

BUILD ORTHOGONALLY



SURFACE
MEANING


Civilization VI
(2016)
SURFACE
MEANING
Egypt is lost. If I can't embrace my love, I will embrace the asps.

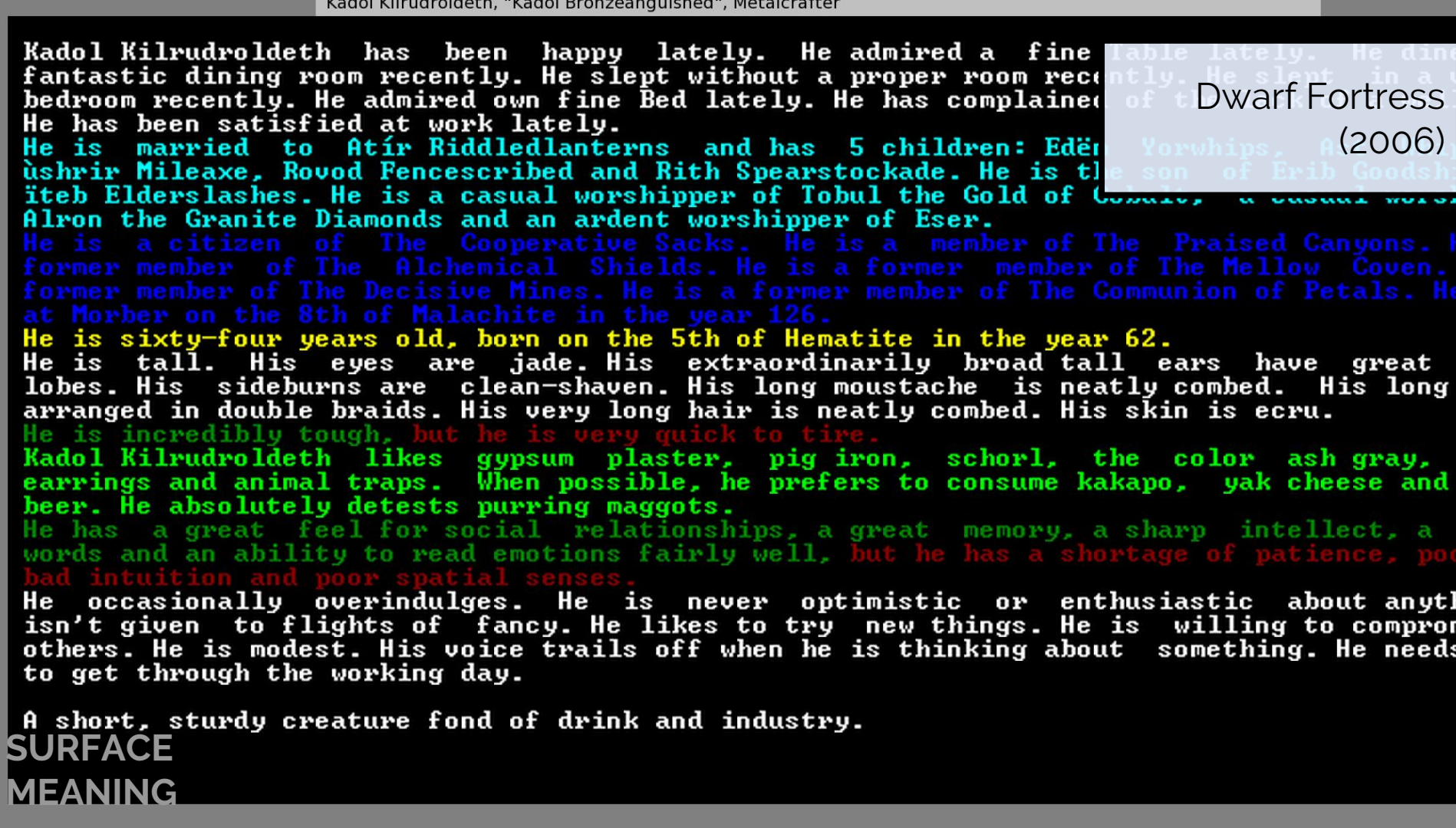
5 Capture (04)
Cleopatra
Egyptian Empire
Declare Surprise War
Warmonger penalty: Moderate
Declare Formal War
Warmonger penalty: Light
Make Deal
Make Demand
Intel Report
Gossip Items: No New Items
Access Level: None
Our Relationship: Denounced
Agendas: Queen of the Nile
1 Hidden agendas
Government: Oligarchy
Cleopatra's Relationships
Gossip
Last Ten Turns
Rumor has it that Egypt has progressed from the Classical Era to the Medieval Era.
Older
Rumor has it that Egypt has just declared war on Toronto!
Rumor has it that Egypt has progressed from the Ancient Era to the Classical Era.
Civilization VI
(2016)
SURFACE
MEANING

Middle-earth:
Shadow of War
(2017)
32
Zog the Eternal
Cursed Mystic Trickster
We meet again. I am Zog, and I've been watching you for some time. You're the
inspiration for all this! What better army to defeat a dead Man than a legion of
Identify
SURFACE
MEANING

Massive Chalice (2015)

SURFACE MEANING

Darkest Dungeon (2016)



Kadol Kilrudroldeth, "Kadol Bronzeanguished", Metalcrafter

Dwarf Fortress (2006)

Kadol Kilrudroldeth has been happy lately. He admired a fine Table lately. He din
fantastic dining room recently. He slept without a proper room recently. He slept in a
bedroom recently. He admired own fine Bed lately. He has complained of the
He has been satisfied at work lately.
He is married to Atír Riddledlanterns and has 5 children: Edën Yorwhips, A
ùshrir Mileaxe, Rovod Fencescribed and Rith Spearstockade. He is the son of Erib Goodsh
ïteb Elderslashes. He is a casual worshipper of Tobul the Gold of Cobalt, a casual worsh
Alron the Granite Diamonds and an ardent worshipper of Eser.
He is a citizen of The Cooperative Sacks. He is a member of The Praised Canyons. H
former member of The Alchemical Shields. He is a former member of The Mellow Coven.
former member of The Decisive Mines. He is a former member of The Communion of Petals. He
at Morber on the 8th of Malachite in the year 126.
He is sixty-four years old, born on the 5th of Hematite in the year 62.
He is tall. His eyes are jade. His extraordinarily broad tall ears have great
lobes. His sideburns are clean-shaven. His long moustache is neatly combed. His long
arranged in double braids. His very long hair is neatly combed. His skin is ecru.
He is incredibly tough, but he is very quick to tire.
Kadol Kilrudroldeth likes gypsum plaster, pig iron, schorl, the color ash gray,
earrings and animal traps. When possible, he prefers to consume kakapo, yak cheese and
beer. He absolutely detests purring maggots.
He has a great feel for social relationships, a great memory, a sharp intellect, a
words and an ability to read emotions fairly well, but he has a shortage of patience, poo
bad intuition and poor spatial senses.
He occasionally overindulges. He is never optimistic or enthusiastic about anyth
isn't given to flights of fancy. He likes to try new things. He is willing to comprom
others. He is modest. His voice trails off when he is thinking about something. He needs
to get through the working day.

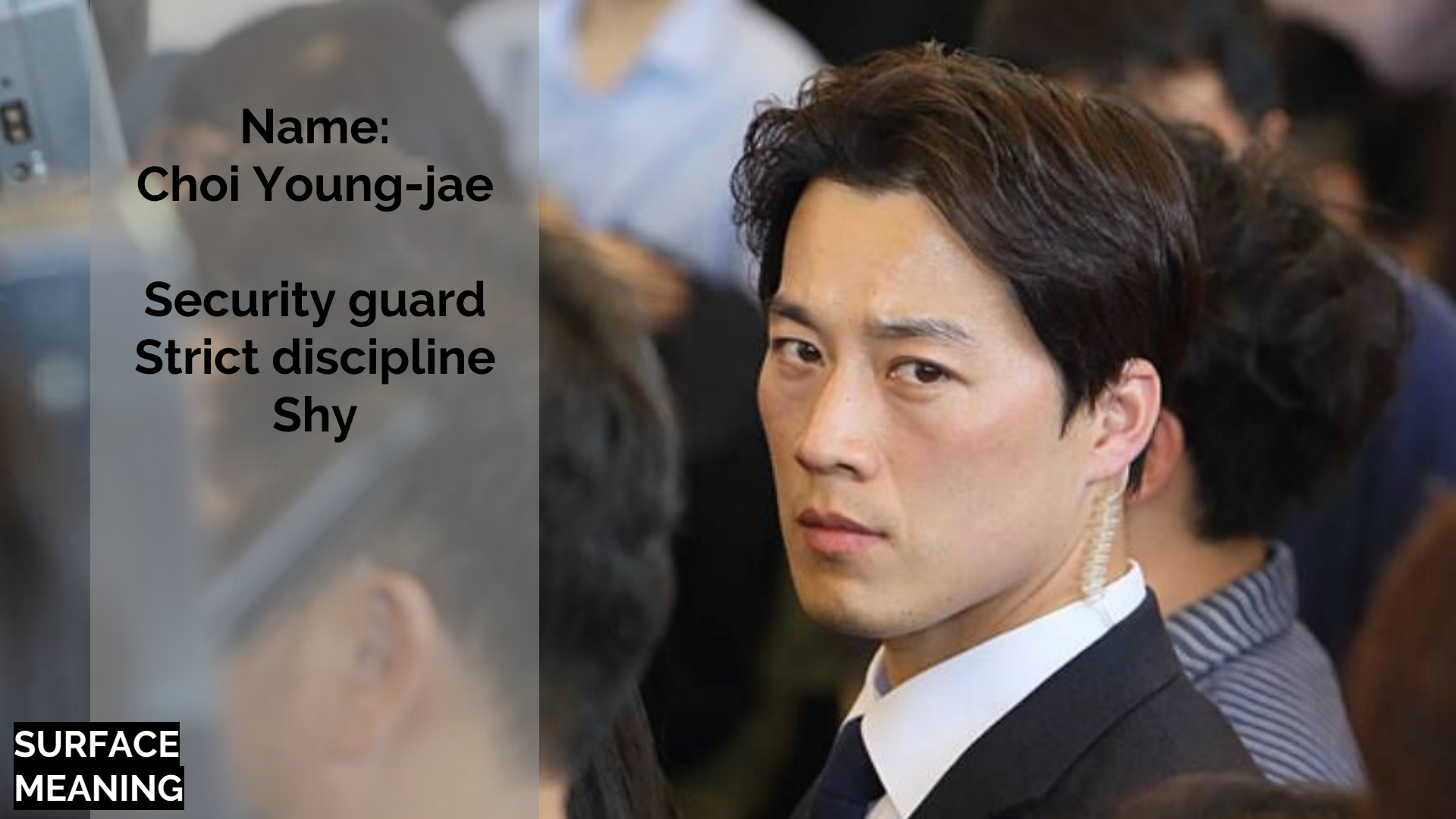
A short, sturdy creature fond of drink and industry.

SURFACE MEANING

SURFACE
MEANING

Name:
Choi Young-jae

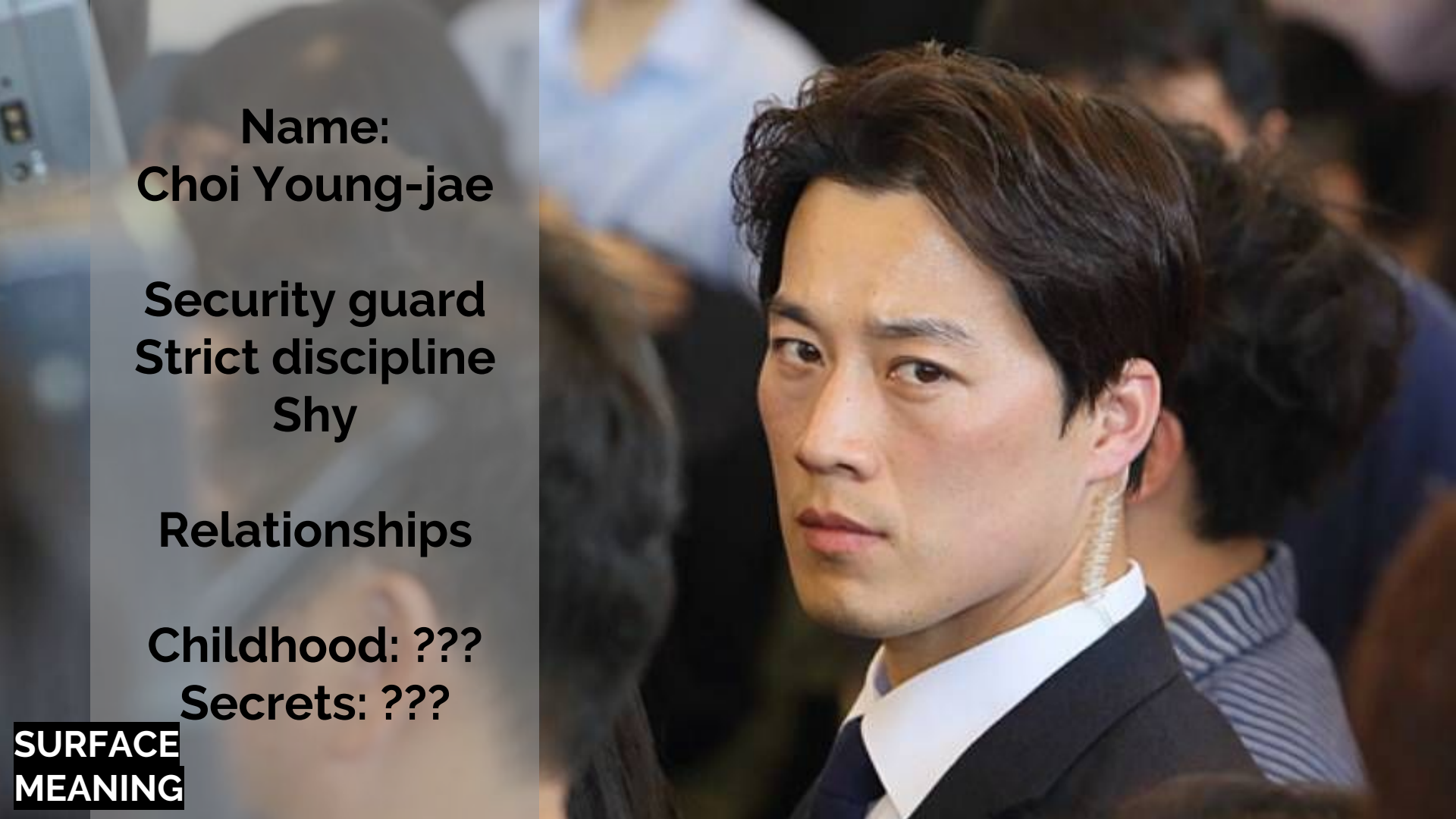
SURFACE
MEANING



Name:
Choi Young-jae

Security guard
Strict discipline
Shy

SURFACE MEANING


Name:
Choi Young-jae
Security guard
Strict discipline
Shy
Relationships
Childhood: ???
Secrets: ???
SURFACE
MEANING

Name:
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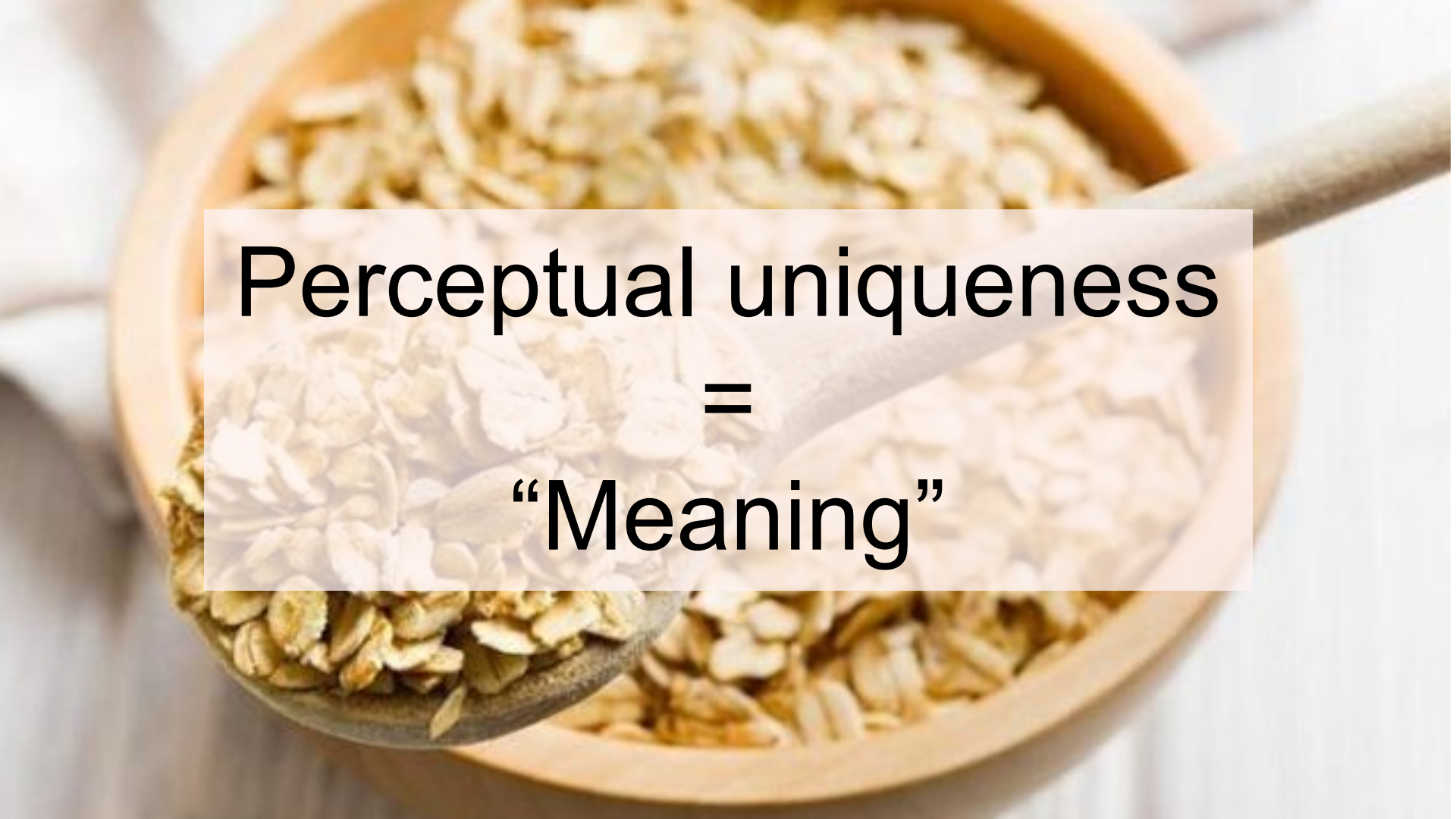
SURFACE
MEANING


Perceptual uniqueness
=
“Meaning”

SURFACE
MEANING

A + B + C = Tom

D + E + F = Taika

A + D + C = Zoe

B + E + F = Hild

SURFACE
MEANING

A + B + C = Tom

D + **E** + F = Taika

A + **D** + F = Zoe

B + **E** + C = Hild

SURFACE
MEANING

Bad News
(2017)

SURFACE MEANING

SURFACE
MEANING

NEW: Social Media sensation (Fame +100)
Changes & notifications (if any)
1 second:
Changes since last viewing/meeting
SURFACE MEANING

Bodyguard

Changes & notifications

Rarest Attribute &/or Visual Signifier

2 seconds:
The #1 difference b/t this character and others.
(Ideally a constant, usable by player for future reference)

SURFACE MEANING

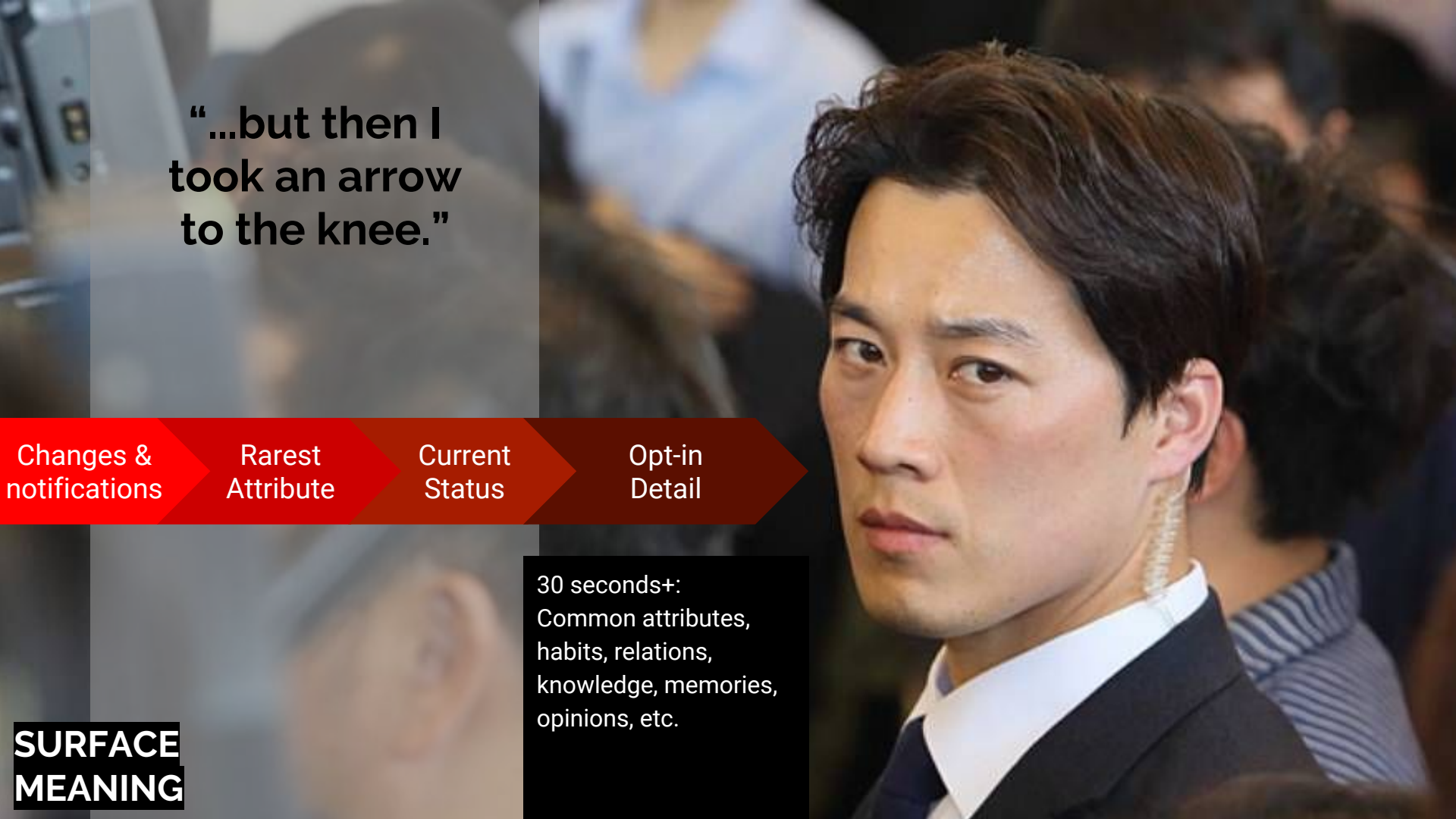
Choi Young-jae

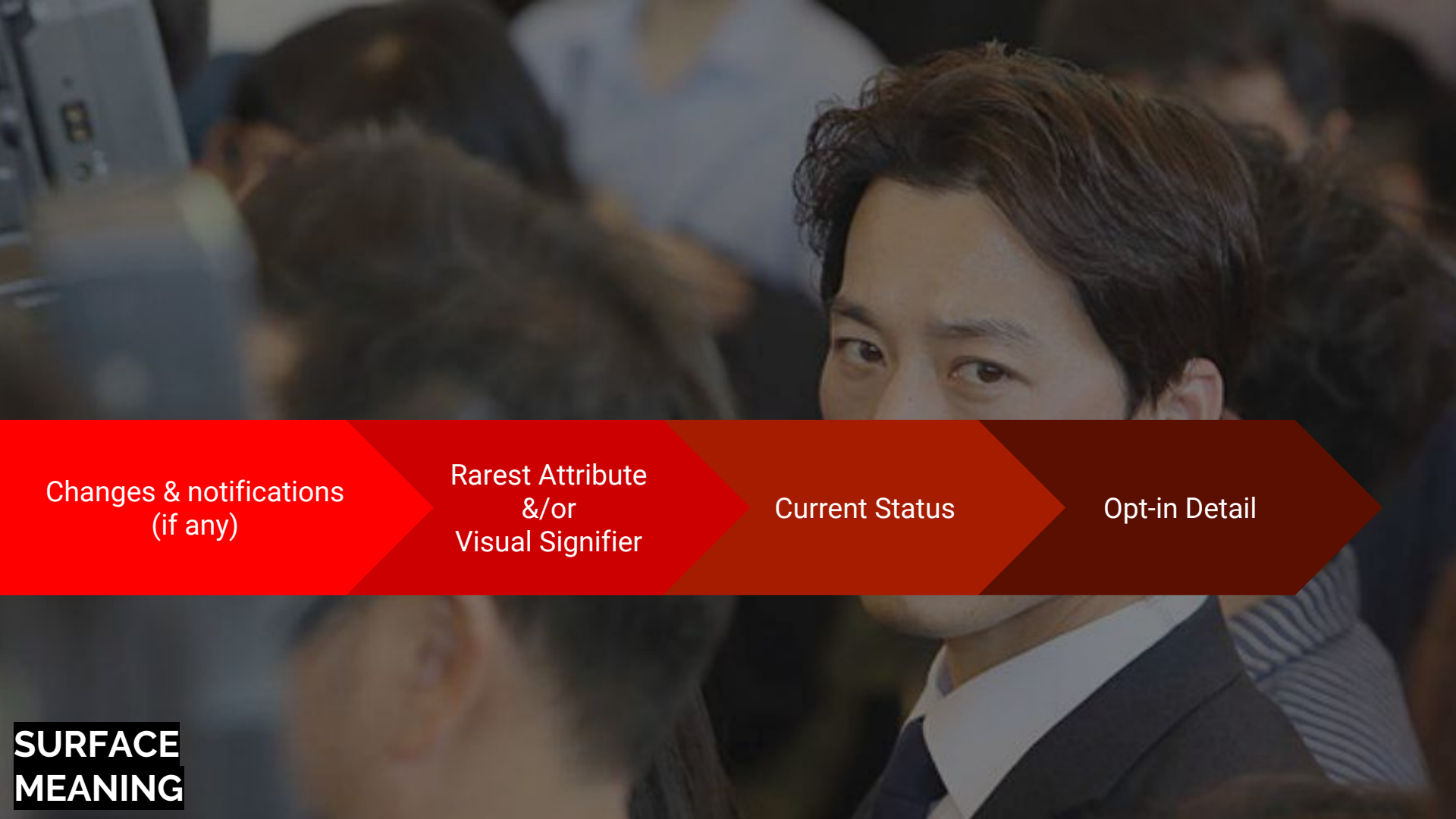
Patrolling
Suspicious
Single

Changes & notifications | Rarest Attribute | Current Status

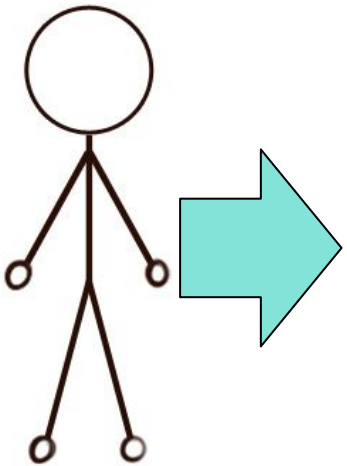
10-30 seconds:
Mood, activity, situation, problem.

SURFACE MEANING

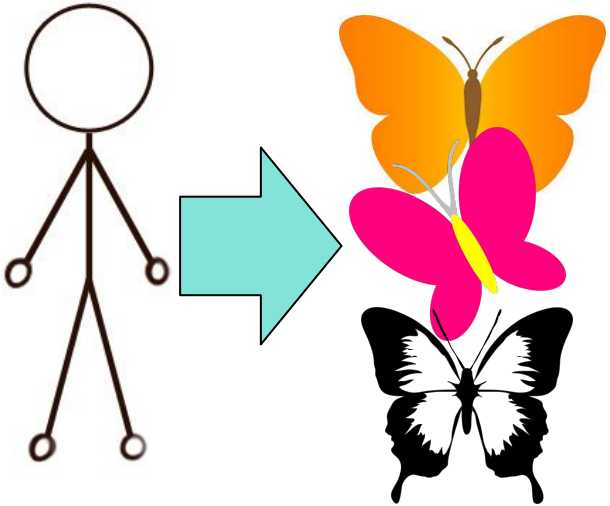

“...but then I took an arrow to the knee.”
Changes & notifications
Rarest Attribute
Current Status
Opt-in Detail
30 seconds+: Common attributes, habits, relations, knowledge, memories, opinions, etc.
SURFACE MEANING


Changes & notifications (if any)
Rarest Attribute &/or Visual Signifier
Current Status
Opt-in Detail
SURFACE MEANING

Iterate With Co-author(s)

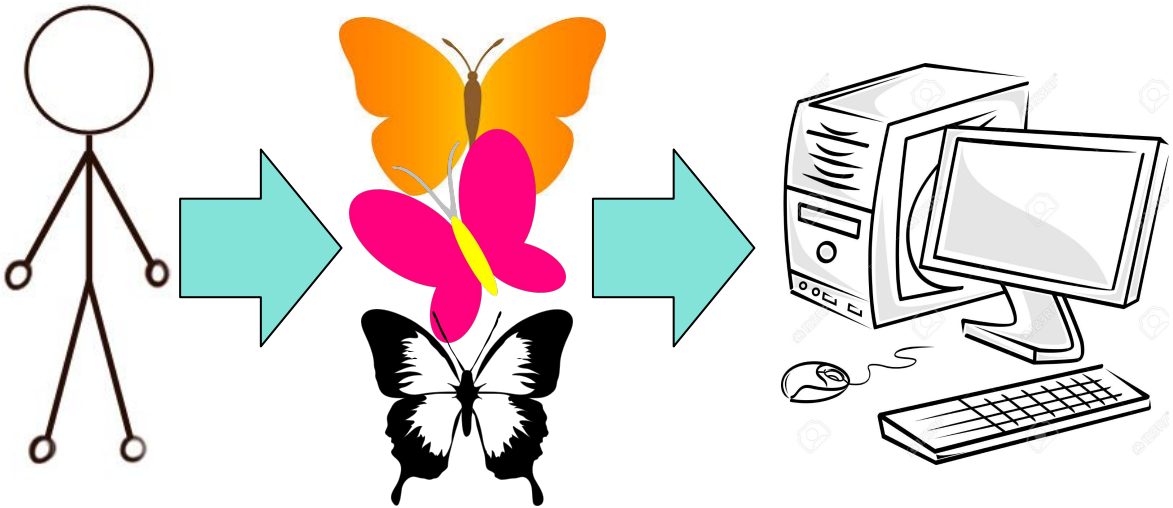


ITERATE WITH
CO-AUTHOR(S)



ITERATE WITH
CO-AUTHOR(S)

Butterflies of the world



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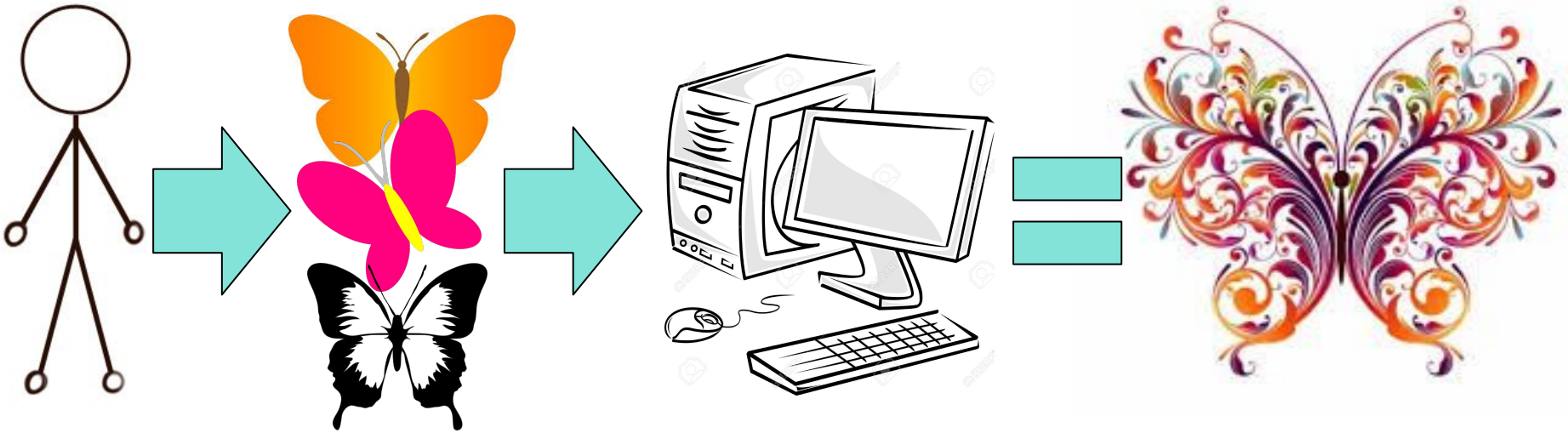
CO-AUTHOR(S)



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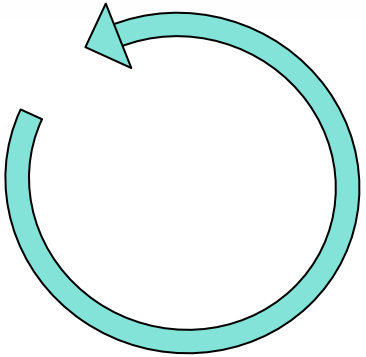
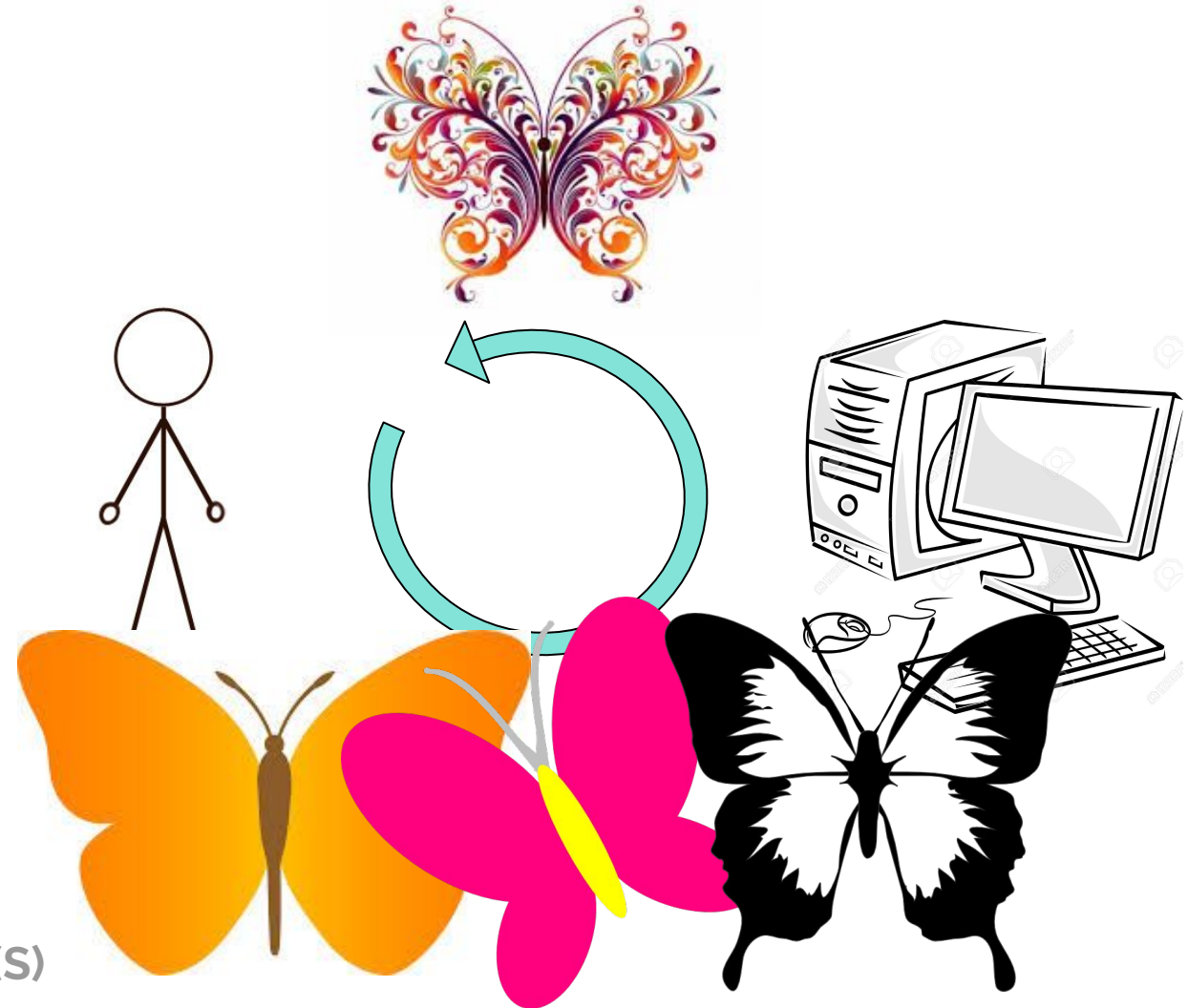
CO-AUTHOR(S)



SYSTEM COMPLETE
!=
ALPHA



EXAMINE
CO-AUTHOR(S)

The Garrulous

Găr|RU|lĭ|ty is an **effusion** of **prolix** and **unpremeditated** speech. The garrulous man happening to sit beside one with whom he has no **acquaintance**, begins by naming the various virtues of his wife: then he says that last night he dreamed a dream, which he narrates at length; this leads him to mention, one by one, the dishes that were placed within his reach at supper. By this time his tongue has gained speed in going; and he proceeds in a loftier strain: 'Alas!' saith he, 'how much more sinful are the men of our times than were their ancestors! and what a price has wheat fallen to now in the markets! and how the city swarms with foreigners! By the time the Bacchanalia are well over the sea will be covered again with ships; should it please Heaven, just now, to send rain, it would be a vast benefit to the wheats.'

Next, he announces his plan to farm his own land the coming year. 'Bu
times to get a living! I must tell you, being, as I perceive, a stranger, th
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CO-AUTHOR(S)

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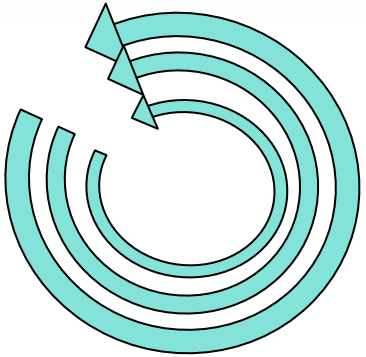
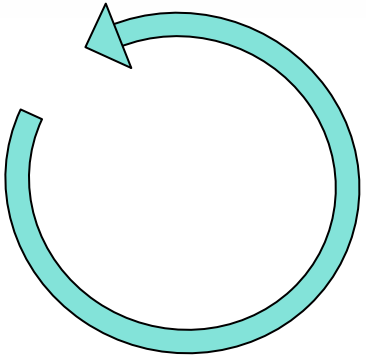
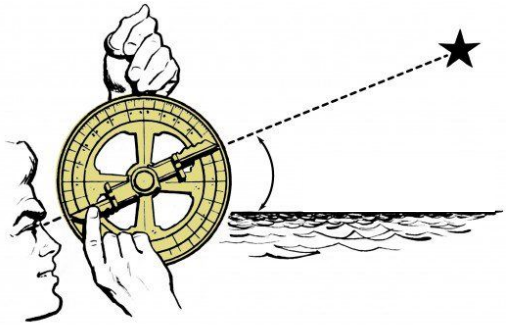
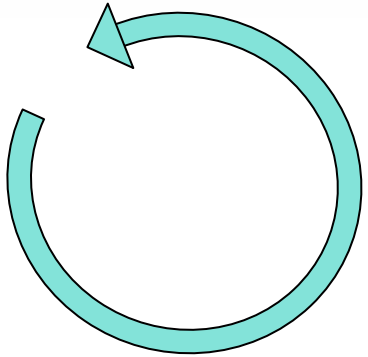


TEST OFTEN



MEASURE RESULTS





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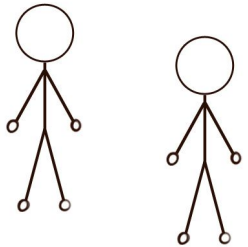
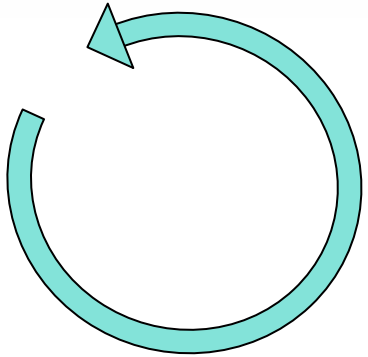
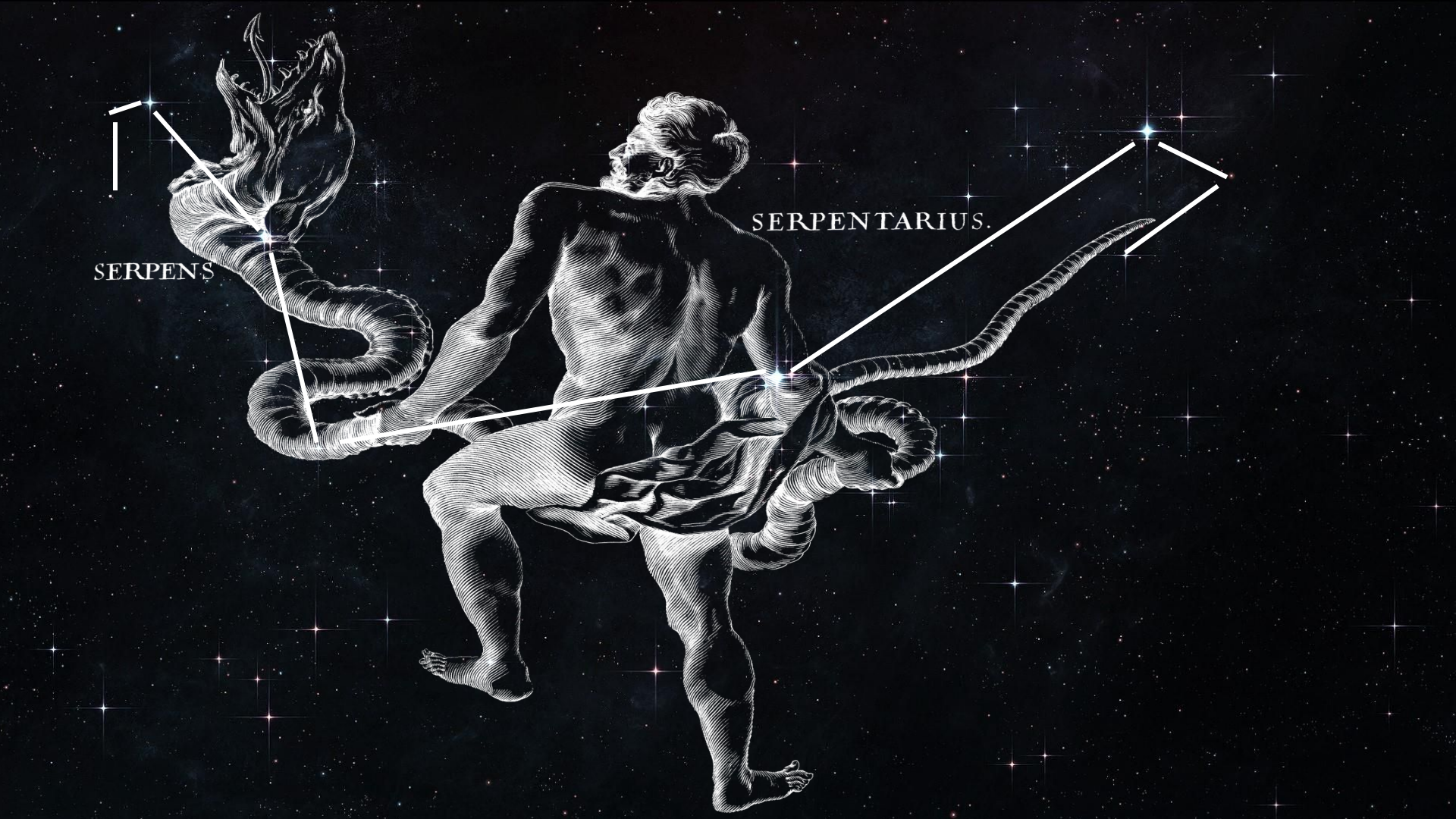
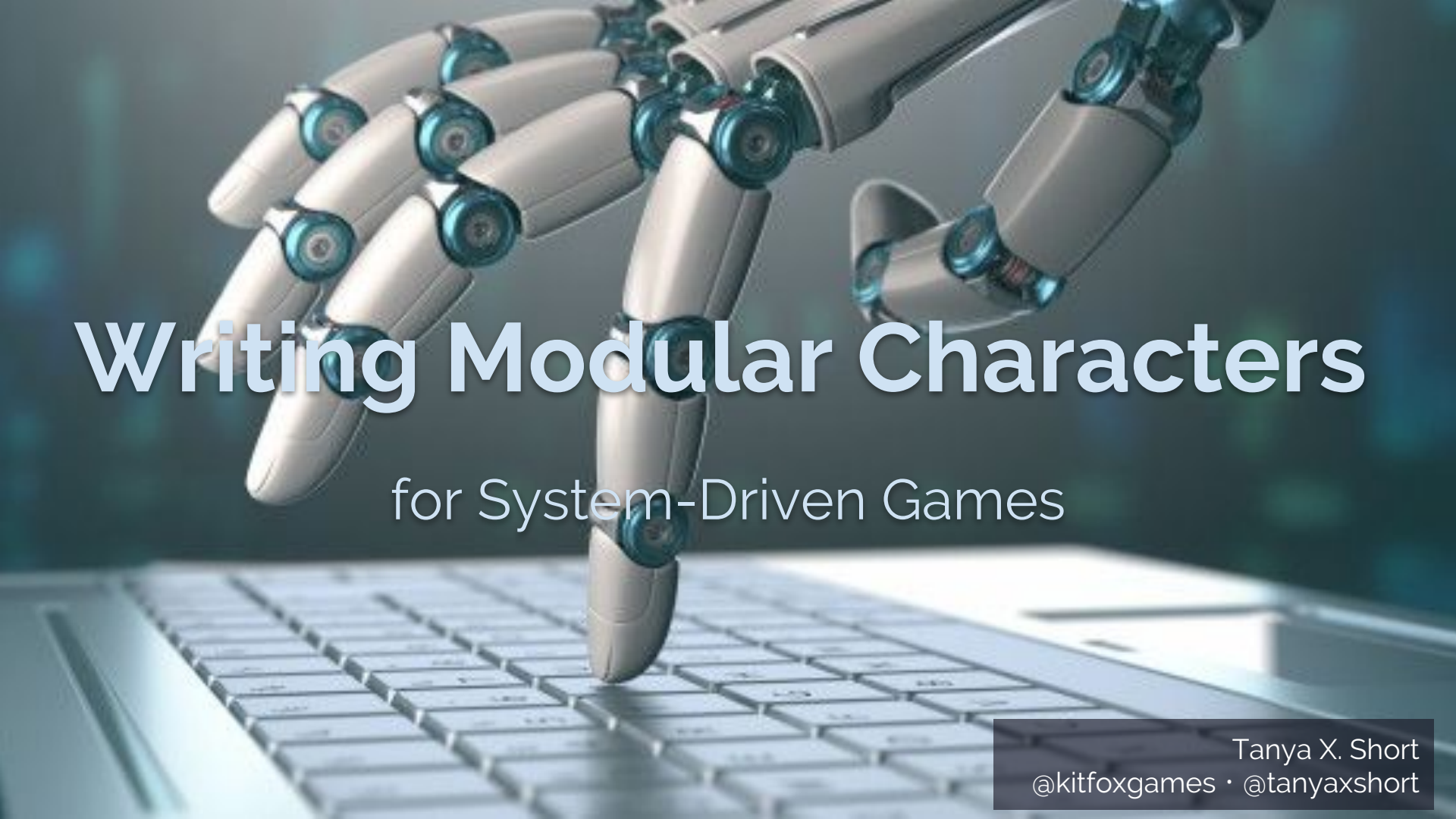




PLAN EXCEPTIONS

1. Build orthogonally
2. Create higher-order meaning
3. Surface meaning
4. Iterate with co-author(s)
    a. System complete != alpha
    b. Examine co-author(s)
    c. Test often
    d. Measure outputs
    e. Plan exceptions


SERPENS
SERPENTARIUS.



Writing Modular Characters

for System-Driven Games

Tanya X. Short
@kitfoxgames · @tanyaxshort