

“AudioVisual Design: Beginnings & Principles”

excerpt (pp. 104-123) from *Artful Design*,
Chapter 3 "Visual Design"



<https://artful.design/>



CHAPTER 3

VISUAL DESIGN

THE ARTFUL DESIGNER IS A **PLANNER** AND **BUILDER** WITH **AESTHETIC SENSE**, ABLE TO **SHAPE** TECHNOLOGY WITH THE UNDERSTANDING THAT WE ARE **MULTI-SENSORY, MULTI-MODAL** CREATURES WHO EXPERIENCE THE WORLD THROUGH **SIGHT, SOUND, AND INTERACTION**. WE ARE AWARE OF THIS "MULTI-NESS," MAKE USE OF IT, APPEAL TO IT, AND ULTIMATELY FASHION ENTIRELY **NEW THINGS** OUT OF IT.

THE PREVIOUS CHAPTERS EXPLORED THE **NATURE OF ARTFUL DESIGN**, AND A BIT OF THE "**WHY**." WE NOW DIG DEEPER INTO ITS **BUILDING BLOCKS**. HERE WE EXPLORE **VISUAL DESIGN**: SHAPES, COLORS, TEXTURES, AND WAYS IN WHICH THEY MOVE, CHANGE, EVOLVE. THE **FUNCTION** OF THESE VISUAL ELEMENTS RANGES FROM COMMUNICATION TO INFORMATION AND INTERACTION, WHILE THE **FORM** ENCODES AN ASPECT OF **VISUAL POETRY** THAT HELPS TO **UNFOLD** AND GIVE **MEANING** TO ITS FUNCTION.



FORMLESS...

AND WITHOUT ESSENCE.

DESIGN ONLY FEELS INEVITABLE *AFTER* IT'S FINISHED. WHEN WE ADMIRE AN ELEGANTLY DESIGNED OBJECT, WE FEEL "BUT OF COURSE -- IT *HAD* TO BE THAT WAY!" BUT *ONCE UPON A TIME*, THERE WERE *CHOICES*. DESIGN USUALLY BEGINS, UNPLEASANTLY AND MESSILY, IN A SEA OF PETRIFYING POSSIBILITIES.

PRACTICAL, ARTISTIC, PERSONAL QUESTIONS...

"WHAT IS IT?"

"WHAT MUST IT DO? WHAT MUST IT NOT?"

*IN THE BEGINNING OF ALL DESIGN,
THERE IS ONLY THE VOID.*

"HOW SHOULD IT LOOK? SOUND? FEEL?"

"HOW WILL IT WORK?"

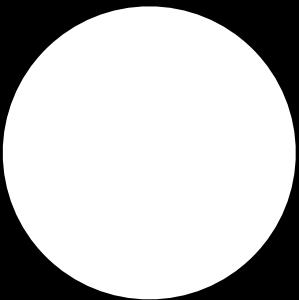
*"EVERY CHOICE IS BUILT UPON SOME
PREVIOUS CHOICE. WHAT IF I MAKE
THE WRONG ONE SOMEWHERE?"*

"WILL IT WORK?"

*BUT IT'S GOTTA BEGIN **SOMEWHERE**.*

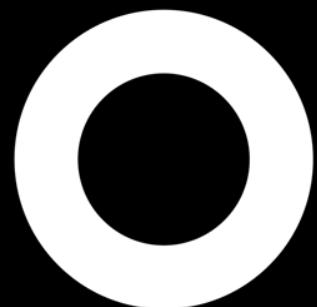


*LET US START... WITH A SIMPLE
EXPLORATION OF FORM.*



THE *CIRCLE*.

SUBTRACT A SMALLER CIRCLE FROM THE CENTER, AND WE HAVE A *RING*.



BLUR THE *RING*.



ADD THE TWO TOGETHER...

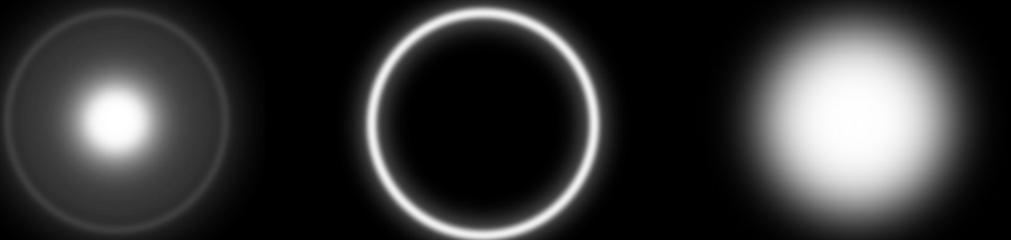


I CALL THIS A *FLARE* (OR A *HEAVENLY DONUT*).

NOW WE HAVE AN ELEMENT THAT APPEARS TO GLOW. MORE IMPORTANTLY, IT'S GOT PERSONALITY!



THERE ARE COUNTLESS ELEMENTS TO BE
CREATED FROM CIRCULAR FORMS ALONE.



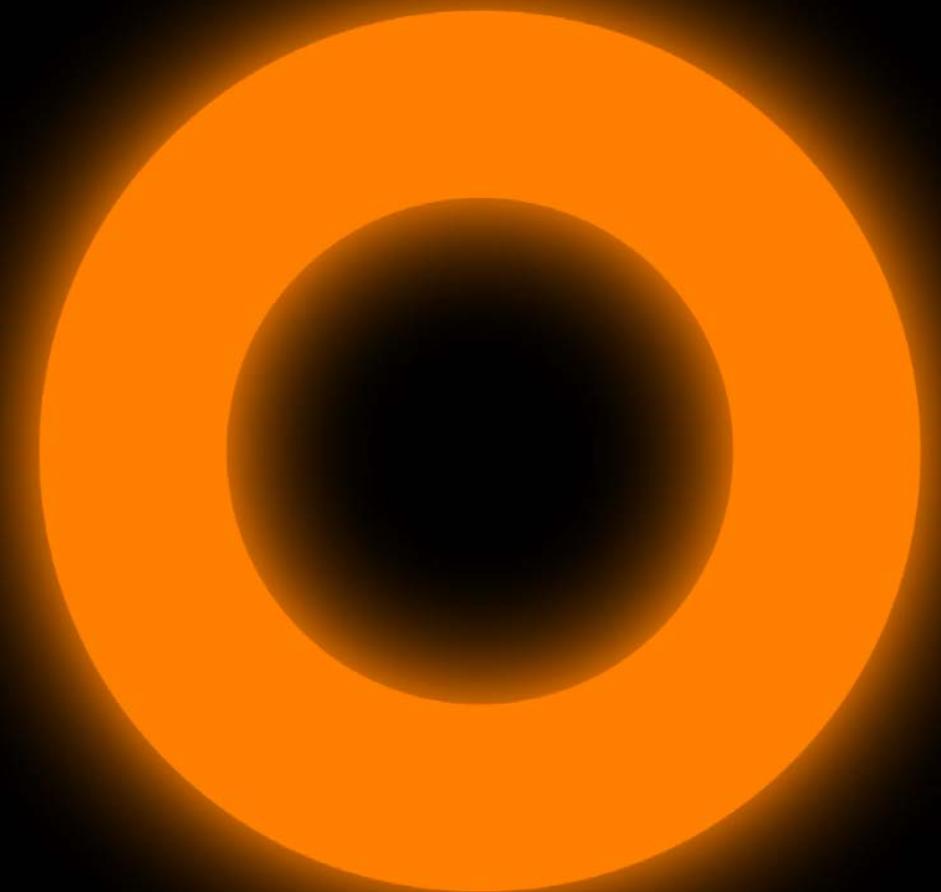
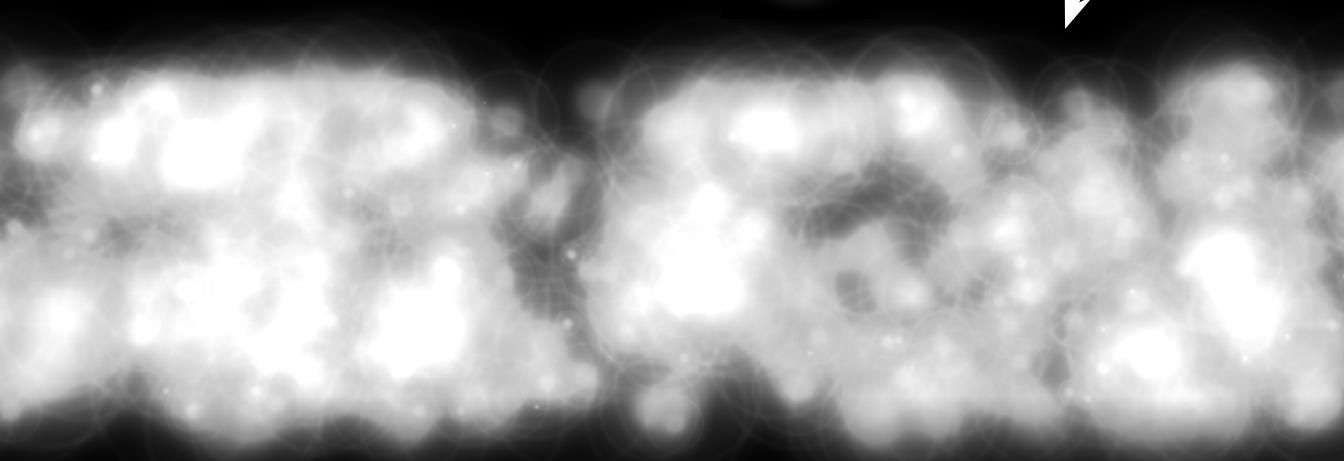
WE ADD COLOR.

THEY CAN BE COMPOSED...



...AND IN GREATER NUMBERS,
THEY FEEL LIKE A NEW THING.

$\times 500$ ↗



RED: 1.0

GREEN: 0.5

BLUE: 0.0

WE CAN CREATE 3D SPHERES OF LIGHT...

$\times 12 =$

WE ARRANGE LIGHT COLUMNS
IN A CIRCLE: A FLOWER-SHAPED
COLOR WHEEL OF 12...

SIDE VIEW

...AND STRETCH
EACH SPHERE INTO A
LIGHT COLUMN...



TOP VIEW

...IN THE HUES OF A RAINBOW.

...WHICH WE COLOR

LIKE LIGHTSABERS.

AS WE MOVE TOWARD THE
CENTER, THE GLOWING COLUMNS
BLEND INTO ONE ANOTHER...

...THE SAME FLARES,
NOW IN FULL BLOOM!

RED: 1.0
GREEN: 0.5
BLUE: 0.0

RED: 1.0
GREEN: 1.0
BLUE: 0.0

RED: 0.5
GREEN: 1.0
BLUE: 0.0

RED: 0.0
GREEN: 1.0
BLUE: 0.0

RED: 0.0
GREEN: 1.0
BLUE: 0.5

RED: 1.0
GREEN: 0.5
BLUE: 0.0

RED: 1.0
GREEN: 0.3
BLUE: 0.0

RED: 1.0
GREEN: 0.0
BLUE: 0.0

COMPRISED OF NOTHING MORE THAN
THE SAME SIMPLE BUILDING BLOCKS...

...144 INSTANCES OF THE SAME
FLARE, 12 IN EACH OF 12 COLUMNS...

RED: 1.0
GREEN: 0.0
BLUE: 0.5

...AN EXAMPLE OF TAKING SIMPLE
ELEMENTS TO AN EXTREME, FORMING
SOMETHING COMPLETELY DIFFERENT.

RED: 1.0
GREEN: 0.0
BLUE: 1.0

RED: 0.5
GREEN: 0.0
BLUE: 1.0

RED: 0.0
GREEN: 0.0
BLUE: 1.0



THE WHITE LIGHT COLUMNS IN THE OCARINA GLOBE
WERE CREATED FROM SIMPLE TEXTURED IMAGES; THE
BLUE DOUBLE HELICES WERE INDIVIDUAL FLARES.



FORM DOES NOT HAVE TO EXIST ALONE. COMPOSITES OF THE CIRCULAR FLARES MAKE UP THE **BUTTONS** IN OCARINA -- PART OF ITS **INTERFACE** FOR HUMAN-OCARINA INTERACTION. HOW THESE FORMS **BEHAVE** AND **RESPOND** AS PART OF THE FUNCTION GIVE THE THING ITS PERSONALITY AND NUANCE.



NOW THESE FORMS HAVE A PURPOSE.

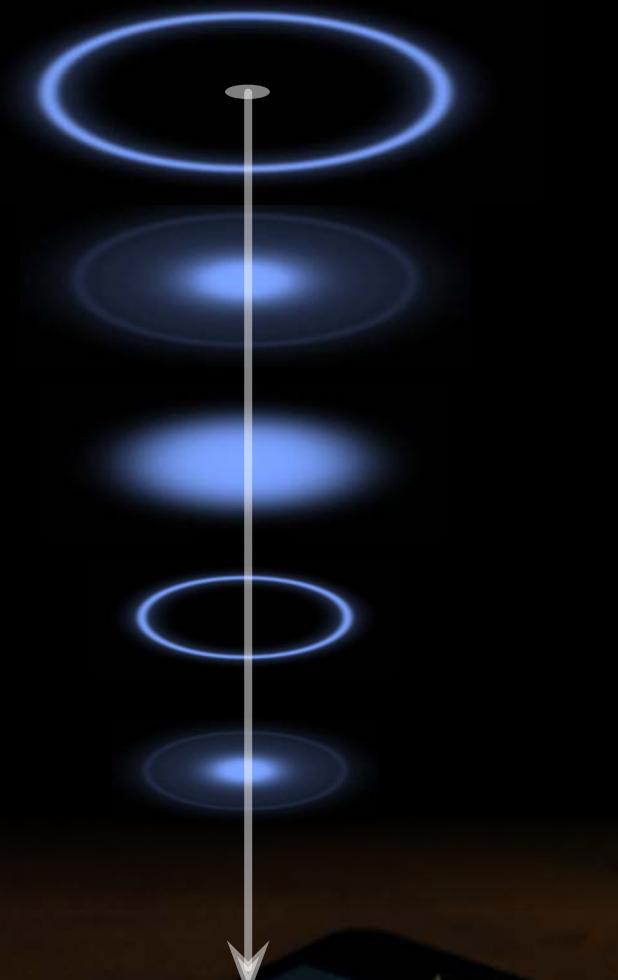
FUNCTIONALLY, THE BUTTON CONTROLS PITCH. VISUALLY, IT EXPANDS TO PROVIDE VISUAL FEEDBACK AND A SENSE OF SATISFACTION.

SEVERAL FLARES MAKE UP EACH VIRTUAL ANIMATED BUTTON.

THEY **BLEND** TOGETHER TO CREATE A SINGLE VISUAL UNIT.

EACH FLARE CAN MOVE **INDEPENDENTLY** OF THE OTHERS...

...UPON TOUCH, THE OUTER FLARES SMOOTHLY **EXPAND** WHILE THE INNER LAYERS **CONTRACT**.



WE'RE JUST USING OUR BASIC CIRCLES!

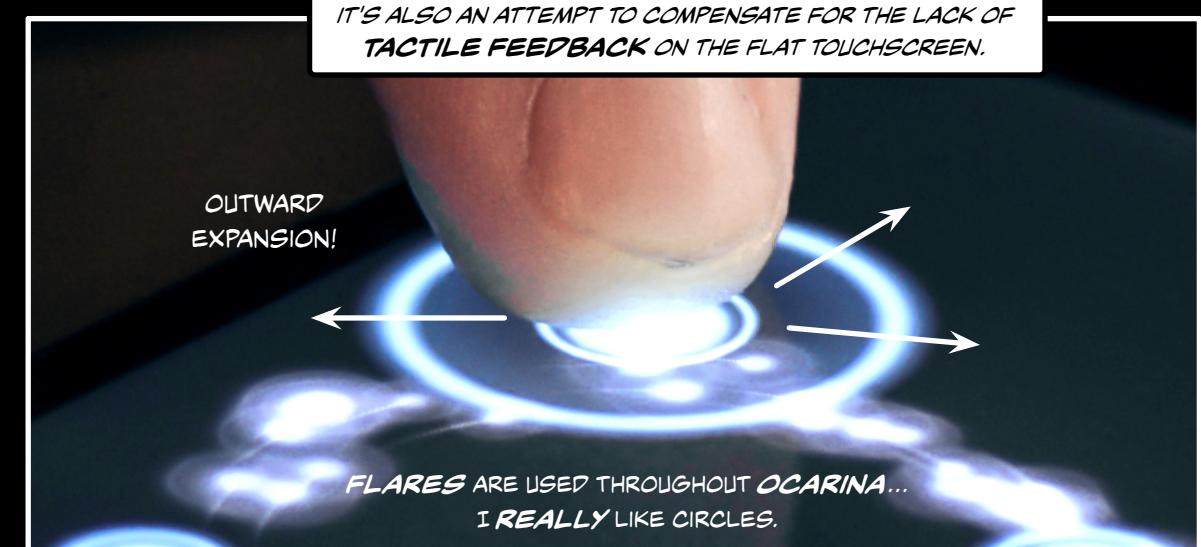
THIS USE OF VISUALS TO CRAFT INTERACTION BRINGS US TO OUR FIRST PRINCIPLE OF **MULTI-MODAL DESIGN!**

PRINCIPLE 3.1

DESIGN SOUND, GRAPHICS, AND INTERACTION TOGETHER

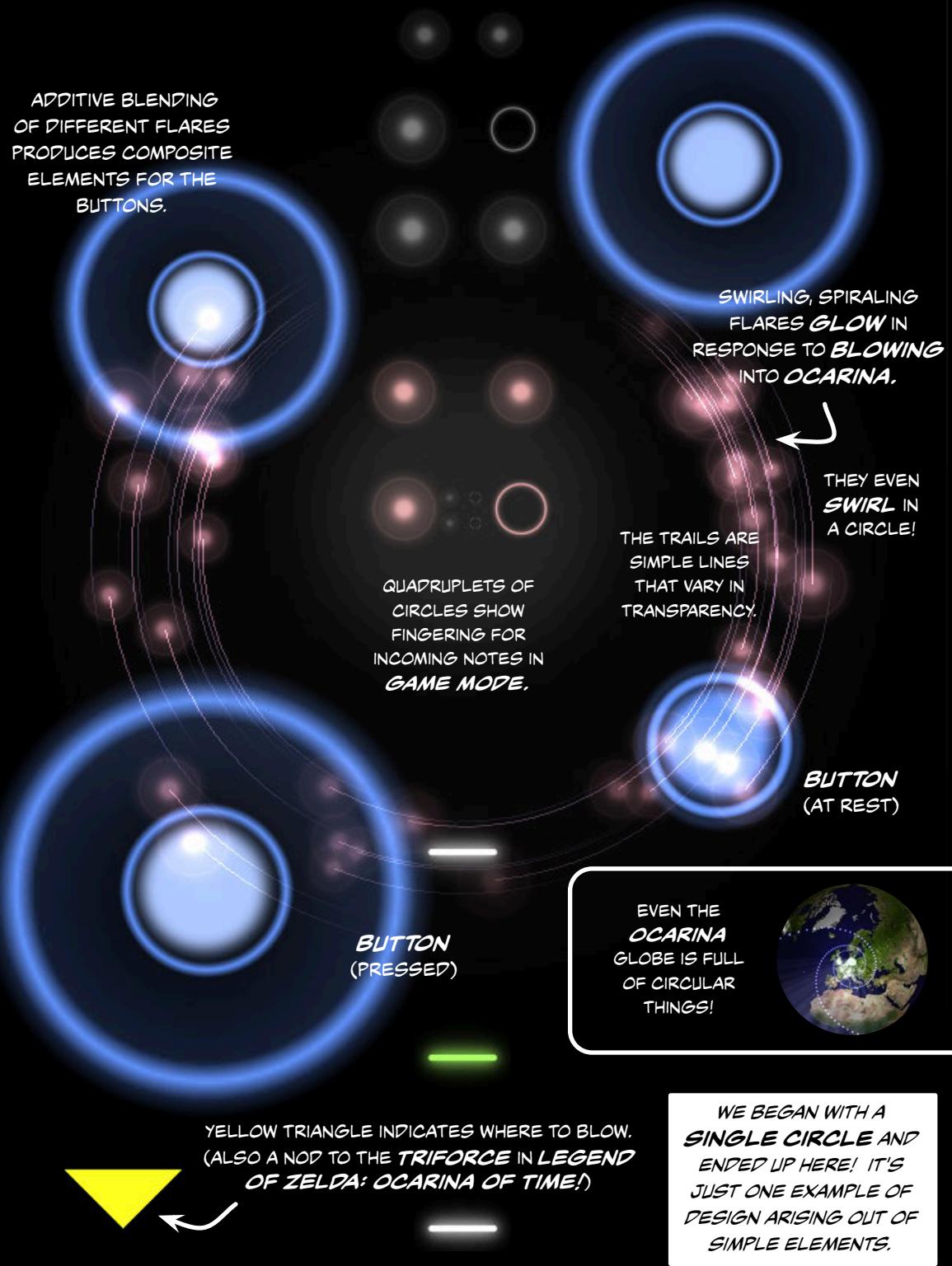
DESIGN SHOULD AIM TO SIMULTANEOUSLY ADDRESS THE **VISUAL**, THE **AURAL**, AND THE **INTERACTIVE**. CHANGES IN ONE DOMAIN SHOULD BE REFLECTED IN THE OTHERS. FOR EXAMPLE, BLOWING INTO THE INSTRUMENT SHOULD RESULT IN SOUND **AND** A CORRESPONDING VISUAL CHANGE (E.G., THE FLARES GLOW AND INCREASE IN SIZE). SIMILARLY, PRESSING THE BUTTON HAS A SPECIFIC INTERACTIVE AND SONIC FUNCTION, BUT IT ALSO ELICITS A SATISFYING VISUAL RESPONSE.

THIS VISUAL REACTION IS DESIGNED TO FEEL **ORGANIC**. IT'S ALSO AN ATTEMPT TO COMPENSATE FOR THE LACK OF **TACTILE FEEDBACK** ON THE FLAT TOUCHSCREEN.



CIRCULAR FORMS ARE EVERYWHERE IN OCARINA AND OCARINA 2, GLOWING AND BLENDING INTO ONE ANOTHER, SERVING BOTH FORM AND FUNCTION.

ADDITIVE BLENDING OF DIFFERENT FLARES PRODUCES COMPOSITE ELEMENTS FOR THE BUTTONS.



WE MIGHT EXTRACT ADDITIONAL ARTFUL DESIGN TAKEAWAYS FROM THE DESIGN OF OCARINA. SOME WERE CONSCIOUS DECISIONS MADE DURING THE DESIGN, OTHERS WERE UNDERSTOOD IN RETROSPECT.

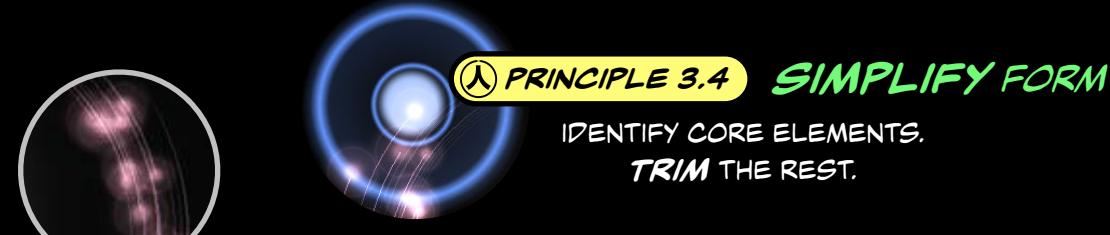


PRINCIPLE 3.2 ANIMATE

VISUAL DESIGN IS MORE THAN THE WAY THINGS LOOK, BUT ALSO THE WAY THEY MOVE OVER TIME, AND HOW -- THROUGH THEIR MOTION -- THEY TELL THEIR STORY AND BUILD AN EXPRESSIVE CONNECTION TO THE USER.

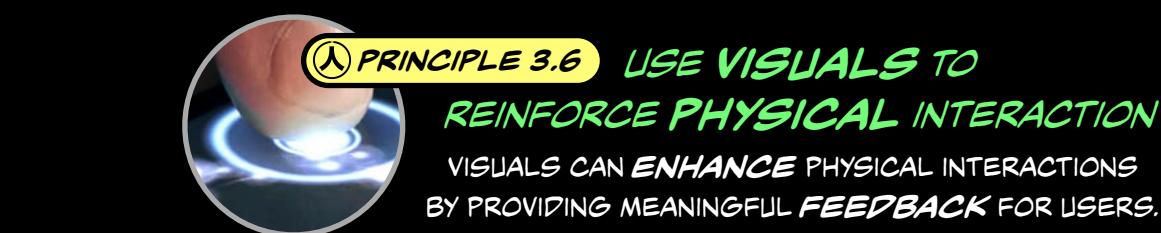
PRINCIPLE 3.3 IMBUE PERSONALITY

GLOW, FLOW, SPIRAL, BREATHE, PULSATE, SPIN, EXPLODE... IN THE DIGITAL DOMAIN, WHERE THE DEFAULT IS RIGID AND MECHANICAL, NUANCE MUST BE IMBUED. THE FINISHED DESIGN SHOULD FEEL ORGANIC AND LIVING. DESIGN IN EXPRESSIVE VERBS.



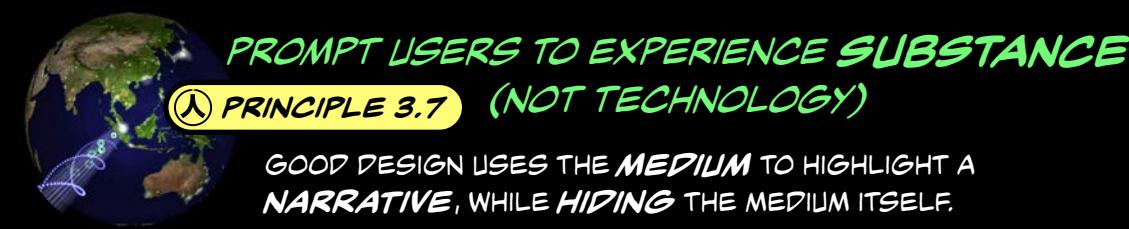
PRINCIPLE 3.5 BUILD COMPLEXITY FROM SIMPLICITY

ENDLESS VARIATIONS CAN BE CREATED FROM COMBINING BASIC ELEMENTS: LINES, SHAPES, COLORS, TRANSFORMATIONS. ARTFUL MANIPULATION OF MANY RELATED YET INDEPENDENT INSTANCES CAN GIVE RISE TO EMERGENT FORMS.



PRINCIPLE 3.6 USE VISUALS TO REINFORCE PHYSICAL INTERACTION

VISUALS CAN ENHANCE PHYSICAL INTERACTIONS BY PROVIDING MEANINGFUL FEEDBACK FOR USERS.



PRINCIPLE 3.7 PROMPT USERS TO EXPERIENCE SUBSTANCE (NOT TECHNOLOGY)

GOOD DESIGN USES THE MEDIUM TO HIGHLIGHT A NARRATIVE, WHILE HIDING THE MEDIUM ITSELF.



I HAVE COLLECTED THESE GENERAL PRINCIPLES OVER THE PAST 20 YEARS WHILE CRAFTING AUDIOVISUAL COMPUTER MUSIC SOFTWARE. THEY ARE NOT MEANT TO BE UNIVERSAL (OR NECESSARILY ORIGINAL). BUT THEY ARE **LENSES**, WAYS OF **THINKING**, I HAVE DERIVED THROUGH A SUSTAINED, ITERATIVE DESIGN PROCESS AND THROUGH HONING MY OWN STYLE AND AESTHETICS.

THESE PRINCIPLES DERIVED FROM **OCARINA** ARE PART OF A BROADER SET OF PRINCIPLES FOR THE **VISUAL DESIGN** OF INTERACTIVE THINGS.

INDEED, DESIGN IS ALWAYS THE RESULT OF INTENTIONALITY **EXCEEDING** METHODOLOGY, AND IT IS ALWAYS DEPENDENT ON **CONTEXT**. THERE ARE NO EXPLICIT RECIPES FOR DESIGN. THERE ARE, HOWEVER, IDEAS, PATTERNS, AND RECURRING THEMES TO WORK WITH. AND THESE PRINCIPLES, WHICH RESIDE IN THAT TACIT DIMENSION BETWEEN THEORY AND PRACTICE, SHOULD BE VIEWED THROUGH THIS IMPLICIT LENS.

WITH THAT BRIEF INTERJECTION, HERE ARE THE REST OF THE VISUAL DESIGN PRINCIPLES, AND CASE STUDIES THAT EMBODY THEM.



① PRINCIPLE 3.8 **INVITE THE SENSES**

MAKE THINGS POP! LEAD THE GAZE, MAKE USE OF **SURPRISE**, PROVIDE **NARRATIVE**.

① PRINCIPLE 3.9 **MAKE IT REAL-TIME, WHENEVER POSSIBLE**

WE EXPERIENCE THE WORLD IN **REAL TIME**. TAKE ADVANTAGE OF THIS DYNAMISM IN DESIGN.

① PRINCIPLE 3.10 **VISUALIZATION YIELDS UNDERSTANDING**

DESIGN THAT **VISUALIZES** A PROCESS, AN ALGORITHM, OR A SYSTEM HELPS ONE TO **COMPREHEND** ITS INNER WORKINGS. (IT FORCES THE DESIGNER TO HAVE UNDERSTOOD IT IN THE FIRST PLACE!)

① PRINCIPLE 3.11 **PRAGMATICS: "IT'S GOTTA READ!"**

ELEMENTS SHOULD BE ARRANGED TO ALLOW US TO **MAKE SENSE** OF THEIR **PURPOSE** AND **RELATIONSHIPS** IN THE DESIGN. IT'S KINDA LIKE TELLING A JOKE -- YOU DON'T GET TO **EXPLAIN** IT AFTERWARD!

① PRINCIPLE 3.12 **AESTHETICS: "MAKE ME FEEL SOMETHIN'!"**

POLISH AND **TECHNICAL PROWESS** ARE NOT AS IMPORTANT AS MAKING THE USER **FEEL SOMETHING** AS A RESULT OF THE **ENCOUNTER**. DESIGN WITH **AUTHENTICITY** AND **INTENTIONALITY**.

① PRINCIPLE 3.13 **INVENT ARTIFICIAL CONSTRAINTS**

CONSTRAINTS ARE THE UNDERLYING **RULES** THAT DEFINE HOW A SYSTEM WORKS, GIVE IT **SHAPE**, AND ULTIMATELY **SPECIFY** HOW A USER ENGAGES WITH IT. LIKE RULES IN A **GAME**, CONSTRAINTS MAKE A SYSTEM USEFUL, SAFE, FUN, INTERESTING. THEY PROVIDE THE BASIS FOR **CREATIVE AGENCY**.

① PRINCIPLE 3.14 **SAVOR STRANGE DESIGN LOOPS**

CONSTRUCT **FEEDBACK** AND **RECURSIVE CONNECTIONS** BETWEEN ELEMENTS. ADDRESS MULTIPLE DIMENSIONS WITH THE SAME ELEMENTS (E.G., THE PENCIL BAG/ZIPPER). BLUR THE DISTINCTION BETWEEN **MEDIUM** AND **MESSAGE**, USING SOME INTRINSIC PROPERTY OF THE DESIGN.

① PRINCIPLE 3.15 **ITERATE!**

THERE IS NO **SUBSTITUTE** FOR **RELENTLESS ITERATION**. AS WE CONTINUALLY CREATE, BALANCE, ADAPT, EVALUATE, REJECT, RETRACE, WE **REFINE** OUR DESIGN'S **ALIGNMENT** WITH OUR NOTIONS OF **USEFULNESS** AND WITH HOW WE'D WANT IT TO MAKE US **FEEL**.

① PRINCIPLE 3.16 **ORIGINALITY IS RECOMBINATION**

WE ARE **FASHIONED** BY WHAT WE **LOVE**, AND WE ARE **INSPIRED** FROM THE THINGS AROUND US (INCLUDING VIDEO GAMES, MOVIES, THE WAY A BRANCH SWAYS IN THE WIND). EMULATE ("STEAL LIKE AN ARTIST!") BUT ALSO ADAPT AND SPEAK THROUGH A VOICE OF YOUR OWN. **ORIGINALITY** IS THE **RECOMBINATION** OF THE THINGS WE FIND **BEAUTIFUL** AND OUR AUTHENTIC PREFERENCES.

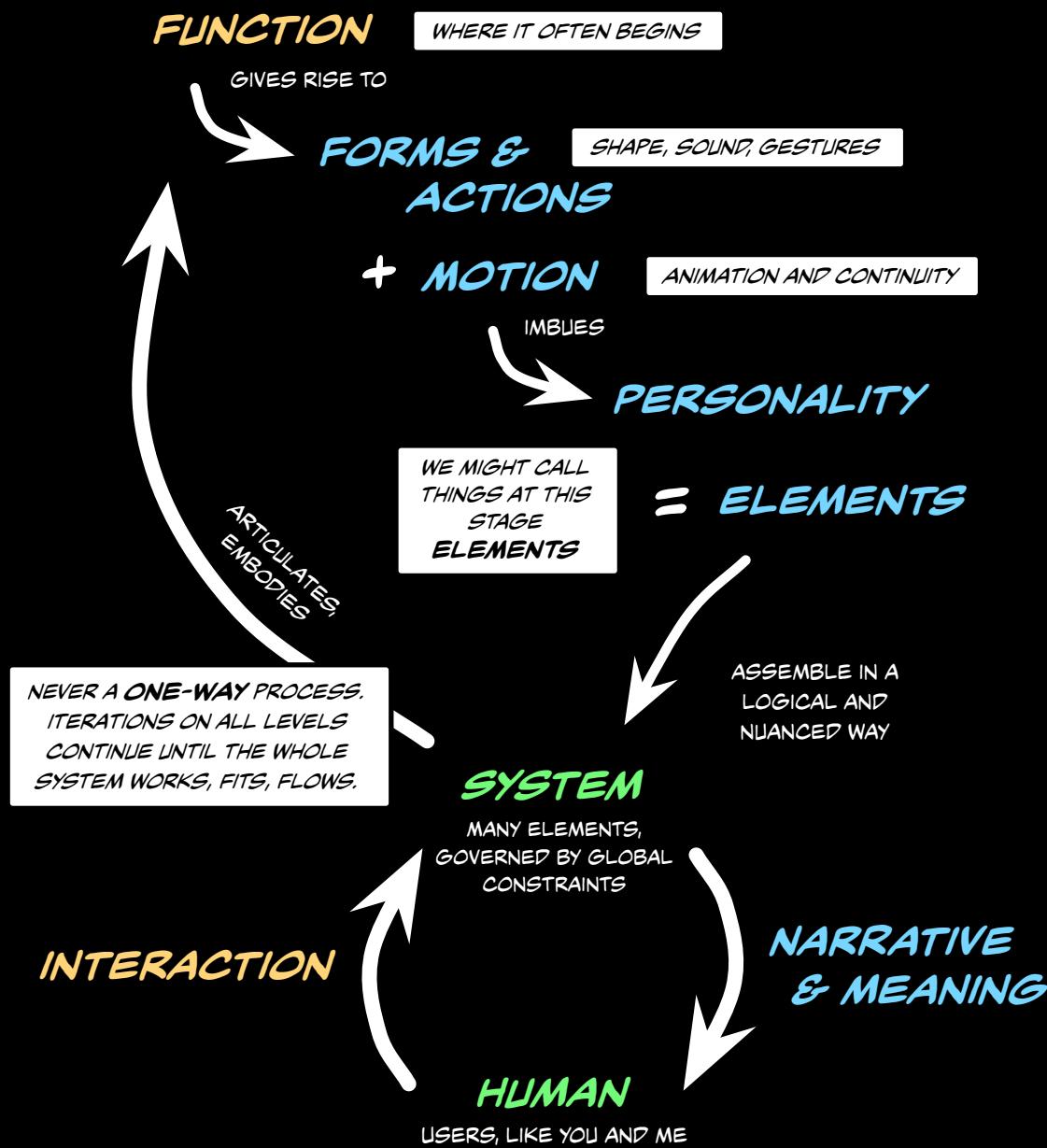


A FIRST-ORDER ATTEMPT TO MODEL HOW THIS TYPE OF AUDIOVISUAL DESIGN WORKS...

...THIS IS ONE OF MANY WAYS WE CAN RECONCILE THE COMPONENTS OF DESIGN INTO A PROCESS THAT IS HIERARCHICAL AND ITERATIVE.

(MODEL 3.17)

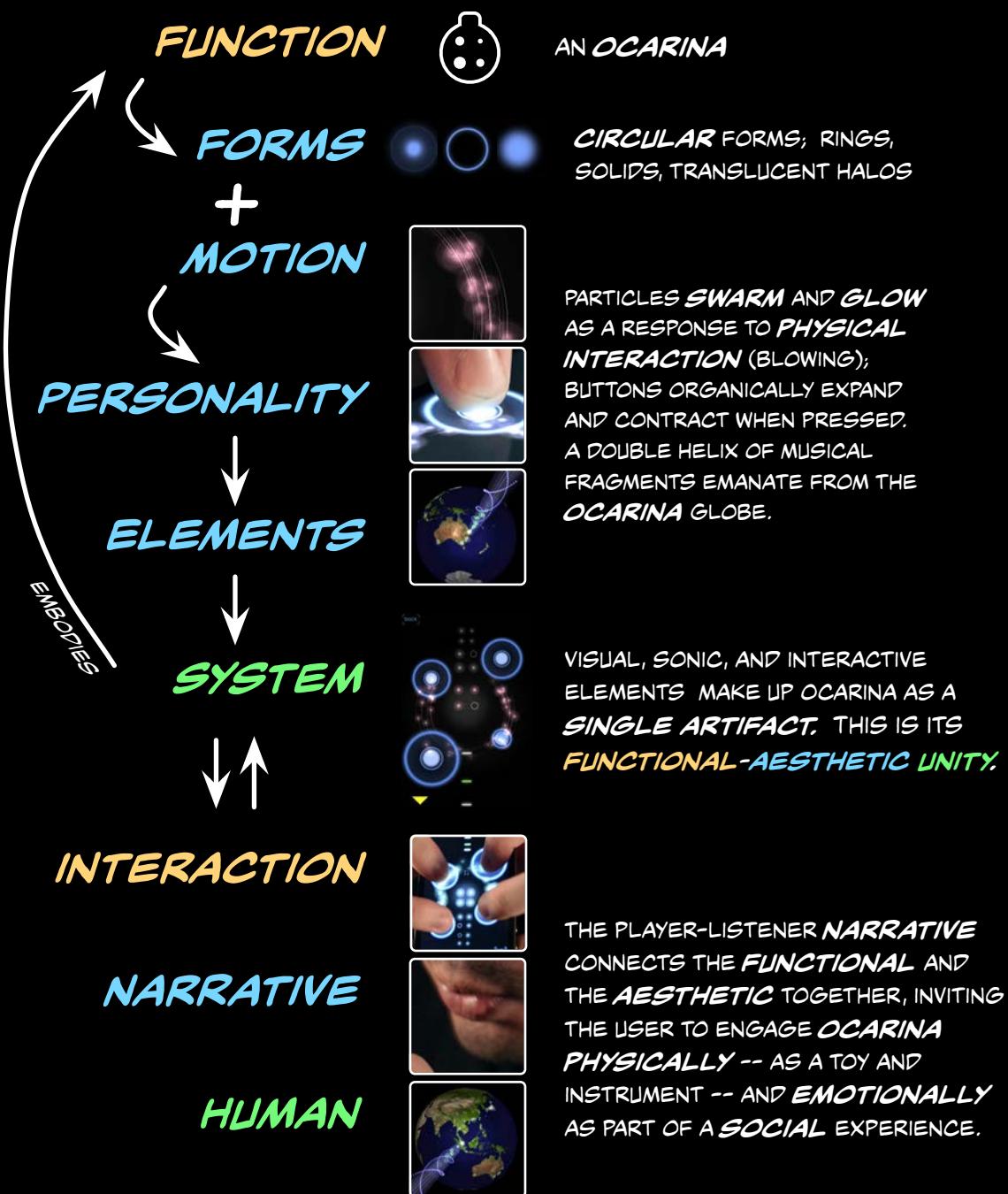
A MODEL FOR MULTI-MODAL DESIGN

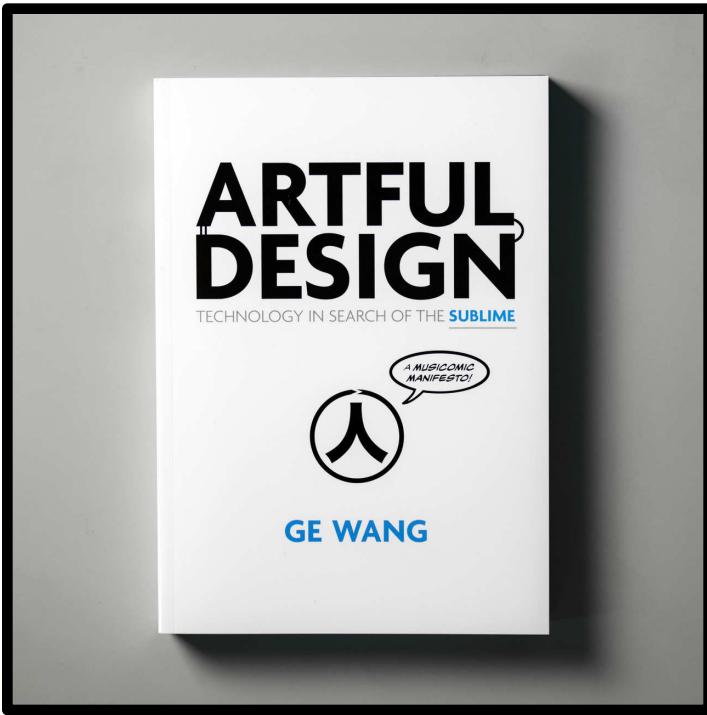


THIS TACIT MODEL IS A RECURRING PATTERN IN MY DESIGN. WE CAN USE THIS MODEL TO BREAK DOWN THE DESIGN OF **OCARINA**, INTO A TYPE OF CONCEPTUAL DESIGN PLAN (ON THE LEFT) AND ITS INTERPRETATION AND INSTANTIATION (ON THE RIGHT).



(PRE-FUNCTION) ? WHAT TO DESIGN





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