I would like start off by thanking a few people.

First, I would like to thank the people at Creative Applications, Resonate, HOLO **for their dedication to the promotion, publication and professional advancement** of our field.

Throughout the last 3.5 years I have had the absolute fortune to be in the company of some amazing people that have not only helped with the development of C4, but have also been producing at an extremely high level that is inspiring and motivating for me as well as the many enthusiastic students and creatives that have used C4 over the years.

@twitterHandles of people involved with C4: kurtis, kyle, adam, greg, david, jayme, dominikus bauer, lindsay macdonald, sheelagh carpendale, nick pagee.

I would like to thank everyone coming here today to see this presentation.

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Throughout my education & career I have been fortunate to be a part of many

different projects that allowed me to look deeply at a particular idea in order to come up with some sort of solution, response or trajectory for moving forward.

[image of subject: big circle]
[image of small point within big circle]
[image of arrow coming out of small point within big circle]

What I would like to talk about today is **the idea of looking deeply at *ideas*, and the ripple effect of seemingly small changes.**

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One of the earliest was a project that looked at new ideas for representing encyclopedias. The solution was a mini application that combined randomness and physics with nonlinear knowledge bases.

[point appears on screen]
[many new points fly in from random positions to outer edge of circle surrounding point];
[point animates to edge, another point animates to centre, outlying circles either shoot off or reorganize along the edge of the larger circle];

The principle idea behind this project looked at how the connections between words and ideas can shift based on perception.

The visualization allowed you to choose different ideas, read about them, and then see connected concepts forming around them.

What this project allowed me to explore was the basic concept of the representation of knowledge, and what happens when you shift from static to dynamic references and how these things could change your experience of navigating an encyclopedia.

[words: REPRESENTATION OF KNOWLEDGE]

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The second project allowed me the opportunity to design an immersive game that took the player through a dream-like world of imagery.

[tap to reveal structure]

The game was a dynamic maze of timing, timelines and experimental graphics, that would proceed from scene to scene on its own.

[tap to reveal one line]

There was a narrative in each scene and as it was acted out the player had the chance to discover points of action that would alter the course of events.

[tap to make lines moving throughout the structure]

And, because there were so many points of choice, the overall narrative could be played out in a ton of different ways.

The player could move quickly through the narrative, or get caught in a never-ending loop of scenes.

LONGPRESS
What this project allowed me to do was explore play and question how we can make a complex *storyline* out of simple moments of choice.

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Following on that idea… The last project I worked on in my bachelor studies was a sketching application where, as you drew, a timeline would record the “frames” of your

drawing.

At any point, you could scrub through that drawing with a little slider.

[show a drawn image, with a slider]
[move the slider to show the line drawing out back and forth]
[NOTE: easy to create a set of points as a CGPathRef];

The catch was that if you scrubbed to a certain point and started drawing again, the sketchpad would create an entirely new drawing based on the point from which you started.

[show a new drawing emerging from a specific point];

So, as you drew, scrubbed and drew some more, the application would create these pathways that reflected the creative choices you were making.

[show a diagram of an arrow, then other points along the first arrow emerging into new arrows];

Which we hoped would generate a fingerprint that would allow you to see your creative

thought process and production.

For instance, you may have spent a lot of time on one branch of thought… But, in the end you preferred a simpler execution.

And, the whole point was to try visualize these…

[make circles change to another colour to highlight the moment of choice]

MOMENTS OF CHOICE that happen naturally throughout THE CREATIVE PROCESS

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I eventually worked on a variety of projects that let me experiment with using two-dimensional type to reveal invisible three-dimensional landscapes.

[show early vids of text on landscapes]

Through these projects, I began to consider the idea of drawing with type and using text as ink.

[show various images of typeis, etc.]

Which led me to the basis of my master’s

thesis.

I developed applications that used pressure and gesture to control the flow and feel of words.

In doing so, I had to figure out how to constantly change the size, shape and orientation of letters on the screen.

This proved difficult because I was constrained by the powerful but rigid typography frameworks that I was working with.

In the end, I looked deeply at those frameworks and found I had to deal with that invisible line on top of which all type is set.

My thesis was titled “Rethinking the Baseline”…

[show words]

and through it, I described how I looked deeply at the nature of typography systems and found that in order to change each letter smoothly as I was drawing…

I had to rethink the nature of the baseline

from one that was ultimately straight…

[animate in baseline]

to one that was dynamically manipulatable…

[animate in dynamic baseline, then dynamic points]

… where I could weight the points along that line through gesture…

[animate dynamic letters in];

… and allow me to change the character of each character as it was being drawn.

–

So, some of the most interesting projects I have worked on were ones that approached big fields like

[fade in circle with: knowledge]

knowledge

[fade in circle with: narrative]

narrative

[fade in circle with: news]

creativity

[fade in circle with: typography]

typography

and within those fields try to find fundamental ideas

[make a little dot appear in each of the circles]

and then experiment with those fundamental ideas by addressing, changing or manipulating them

[arrows appear from each circle]

to see how they might affect or shift the perception of the field they are a part of.

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Throughout all these projects, and everything else that happened along the way, there was basically one medium I used to pursue all these explorations.

And that medium was this:

```
[fade in draw loop]..
[
   draw () {
      //. . .
   }
];
```

_

I first learned to program using action script, but soon outgrew the environment and shifted to using Processing…

[show processing logo]

which for years became the sketchbook through which i undertook the majority of my creative research

[fade in images of typeis, and other projects, etc… left to right, fairly quickly]

eventually I shifted to OpenFrameworks where i could continue my explorations

[OF logo]

which was a fortunate move because the basic medium, remained the same.

For years, I kept finding new projects to dig into, but when I finally got into my typography work…

[show typeis]

where i was rethinking the baseline, i realized that I had to make another shift to a different language…

[show .net, c, c++, …]?

Over the first year, as I was working on a variety of artworks, animations and publications surrounding this exploration, I thought to myself…

it would be great if there was a comparable project to processing and open frameworks

[show objc]

but architected using Objective-C

In the fall of 2010, I started another investigation

[fade in circle]

one that started raising questions like:

[animate in:
- what does it mean to “create an api?”
- what can i learn from my favourite projects “recreating P / OF”
- what were the “constraints” i was encountering at the time?
]

and i had tons of ideas and answers for these questions

BUT, the important part was that I had started looking deeply at a new idea

[animate in circle]

and realized that my pursuit was mirroring the other projects I had done in the past.

[w/ cc title]

By looking deeply at the nature of a given subject, I had already been able to discover basic elements upon which to build new ideas

[w/ dot]

and, like that moment of

[show creative choice]

creative choice

or

[show rethinking the baseline]

rethinking the baseline

my question became “what does an alternative to drawing…”

[show… draw loop]

..”look like?”

… which has become one of my major pursuits over the last 3.5 years…

and has ultimately led me to shift my method and practice from drawing to working with objects

[animate word, draw{}, animate word obj]

which can be summed up like the transition from

[animate in ellipse(x,y,w,h)] to [[C4Shape ellipse:{x,y,w,h}];]

–

Simply put, the difference between these two is that

[show ellipse draws]

a call that draws a circle to the screen

[show ellipse puts]

a very subtle difference in the style of code

[show ellipse v. shape]

but one that carries with it significant impact and opens up new possibilities

the important part is that drawing becomes implicit

[drawing{} becomes implicit]

and is handled automatically

–

Properties Demo

DON’T GO PAST BORDERS

–

leave properties demo on screen

there are 5 important paradigms that arise from working with objects like the ones we see here.

drawing
properties
animations
events
touch

What I found through the three and a half years that i’ve been working on C4

is that i have begun to think of the combination of layers and views

that speak and listen to one another

respond to touch

with animation

and common logic

as MEDIA:OBJECTS

BUT these properties don’t just pertain to shapes

[REVEAL MEDIA]
–

Now, if you can think of that special combination of layers and views, that speak and listen to one another, that respond to touch, with animation and common logic as media objects

Then, its possible to look at the those special combinations of hardware and software and how the physical medium plays an equally important role in the delivery and communication of an artwork.

That is to say, that special combination of app and device is also a form of media:object in that the visual layers are integrated completely into hardware views that can listen and speak to one another, that respond to touch with animation and common logic

And here, for me, lies the gravy.

One of the earliest inspirations for this idea came from the Making Future Magic

project.

I’ve always been fascinated with the way they use tablets as paintbrushes to create light sculptures.

–

I’m also really inspired when I get to see someone create something with C4 that is a truly unique expression of their own creativity and imagination

[show 3 vids with the nice fades]
(describe them)

here they’re all using devices as MEDIA:OBJECTS

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For me, thinking about the app:device architecture as media:objects rather than as components linked together opens up new ways of looking at the world, and when you open up new doors, there’s the incredible opportunity to discover new things.

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This is what C4 represents, a vision for

new aesthetics, new ideas and new ways of thinking, interacting and expression.

And, this all stemmed from looking at a small idea in a big field, and shifting from the fundamental building block of my education and artistic career from this:

```
ellipse(x,y,w,h);
```

to this:

```
[C4Shape ellipse:{x,y,w,h}];
```

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Thank you.

I look forward to hearing from you.