



Designing Meaningful Animation

Val Head • @vlh

gochat

Socializing and sharing
for your website & blog

3 ways to use GoChat on your website

Button

An alternative button to
Google +1 & Facebook Like



Inline

Embed directly in
the webpage

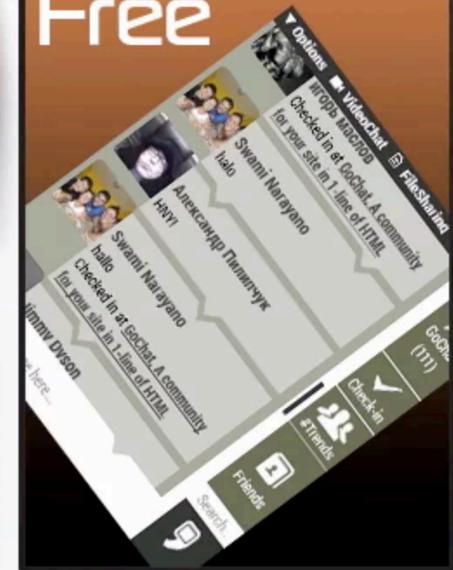


Toolbar

Compact vertical-toolbar
in a fixed-position



Builds engagement
Sends you traffic
Viral sharing
Free



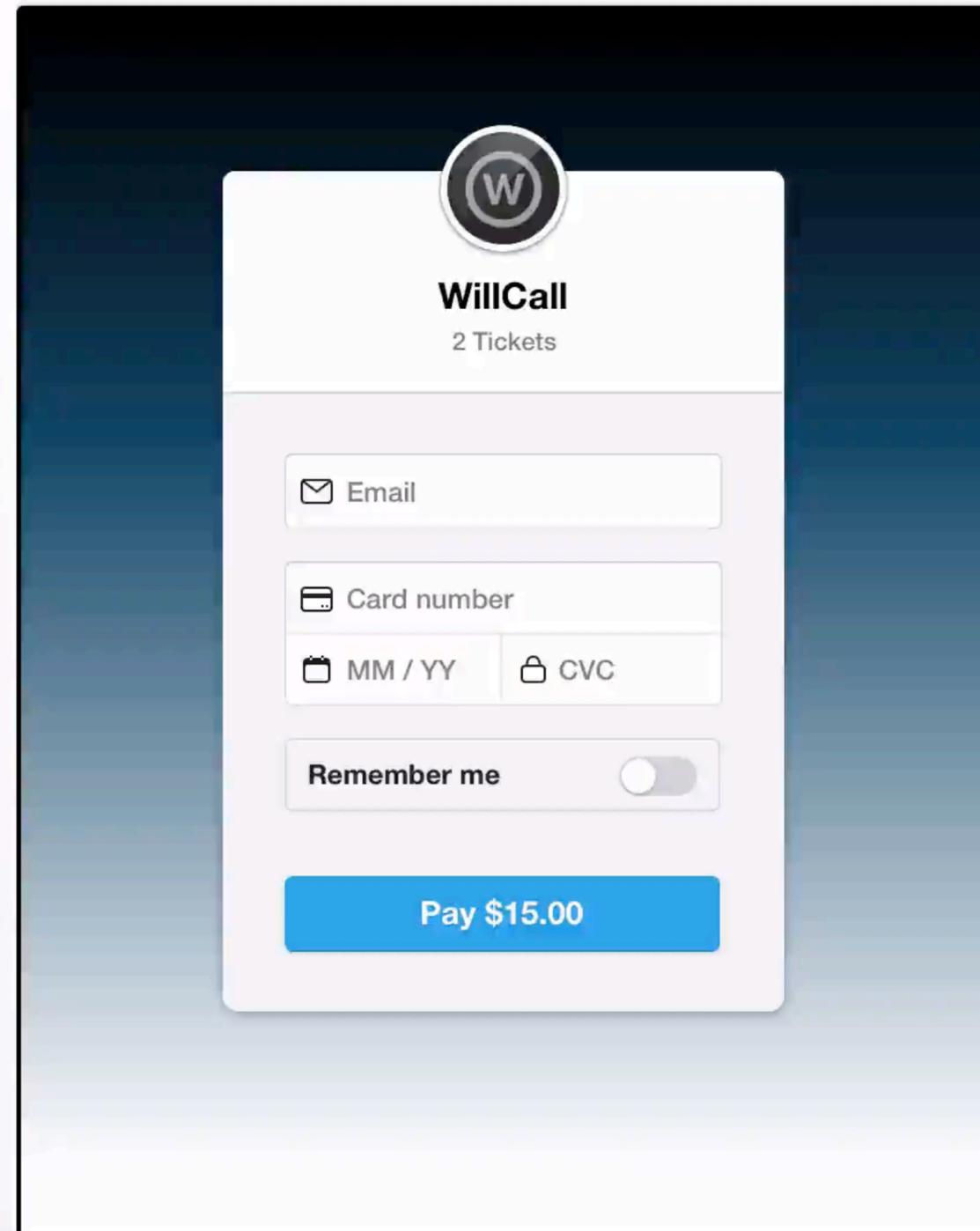
The payment form done right

Checkout is an embeddable payment form for desktop, tablet, and mobile devices. It works within your site—customers can pay instantly, without being redirected away to complete the transaction.

Donate to Watsi

Try Checkout by donating \$1 to support [Watsi's medical work](#).

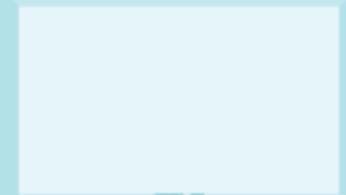
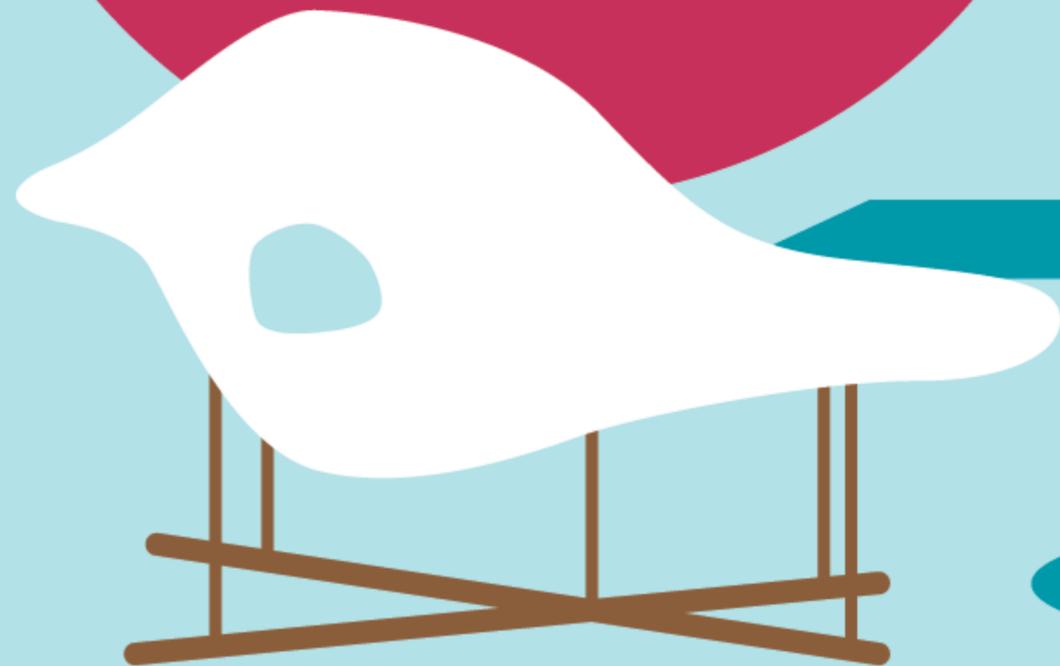
Checkout creates a [Stripe.js token](#) that you can use to charge a card, create a customer, start a subscription, or anything else you might normally do. [Documentation](#) >



The image shows a mobile payment form for "WillCall" with 2 tickets. The form is displayed on a dark blue background. At the top, there is a circular logo with a white 'W' on a dark background. Below the logo, the text "WillCall" is displayed in a bold, sans-serif font, followed by "2 Tickets" in a smaller font. The form contains several input fields: an "Email" field with an envelope icon, a "Card number" field with a card icon, and two fields for "MM / YY" and "CVC" with calendar and lock icons respectively. Below these fields is a "Remember me" toggle switch, which is currently turned off. At the bottom of the form is a large blue button with the text "Pay \$15.00" in white.

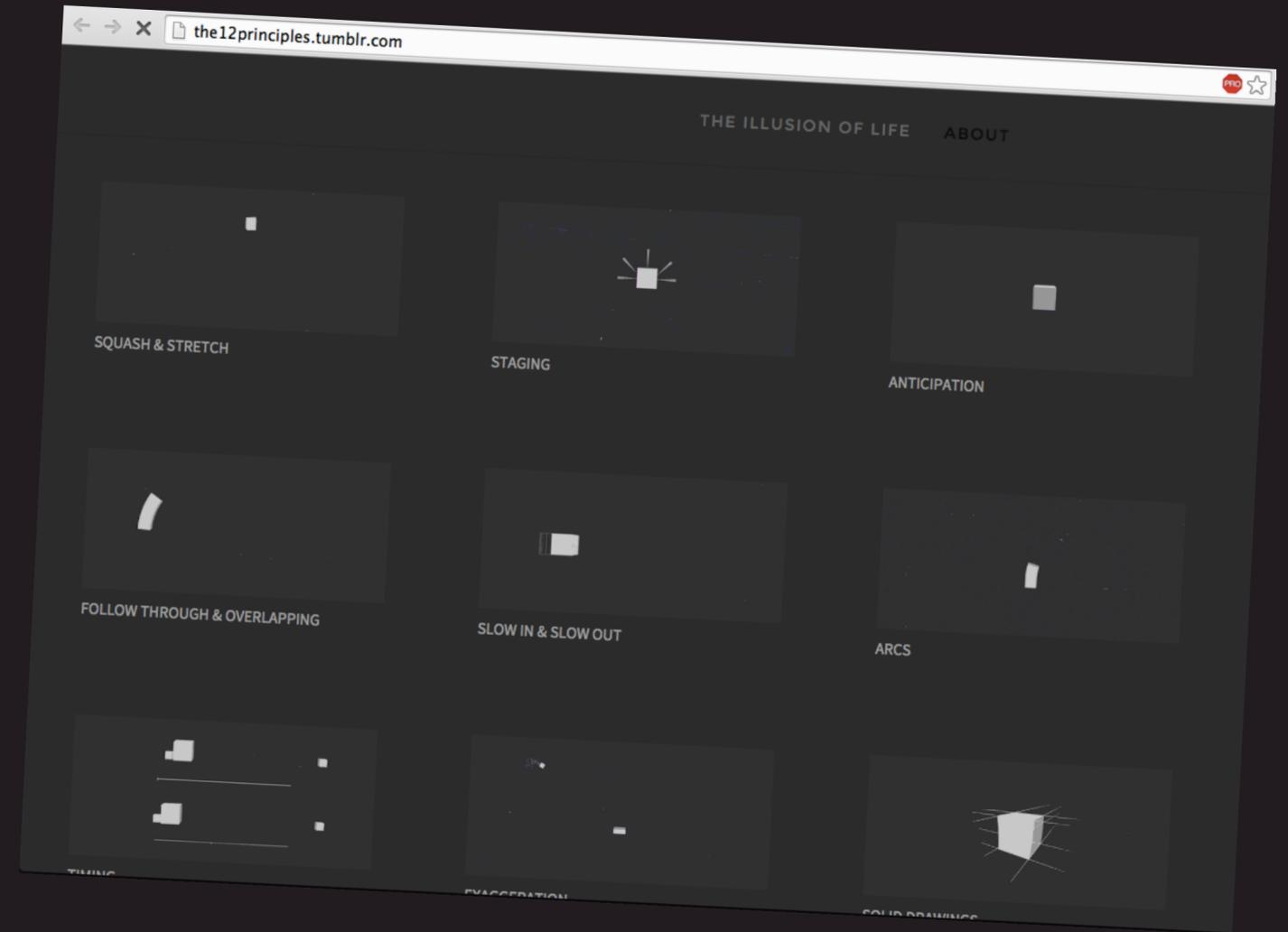
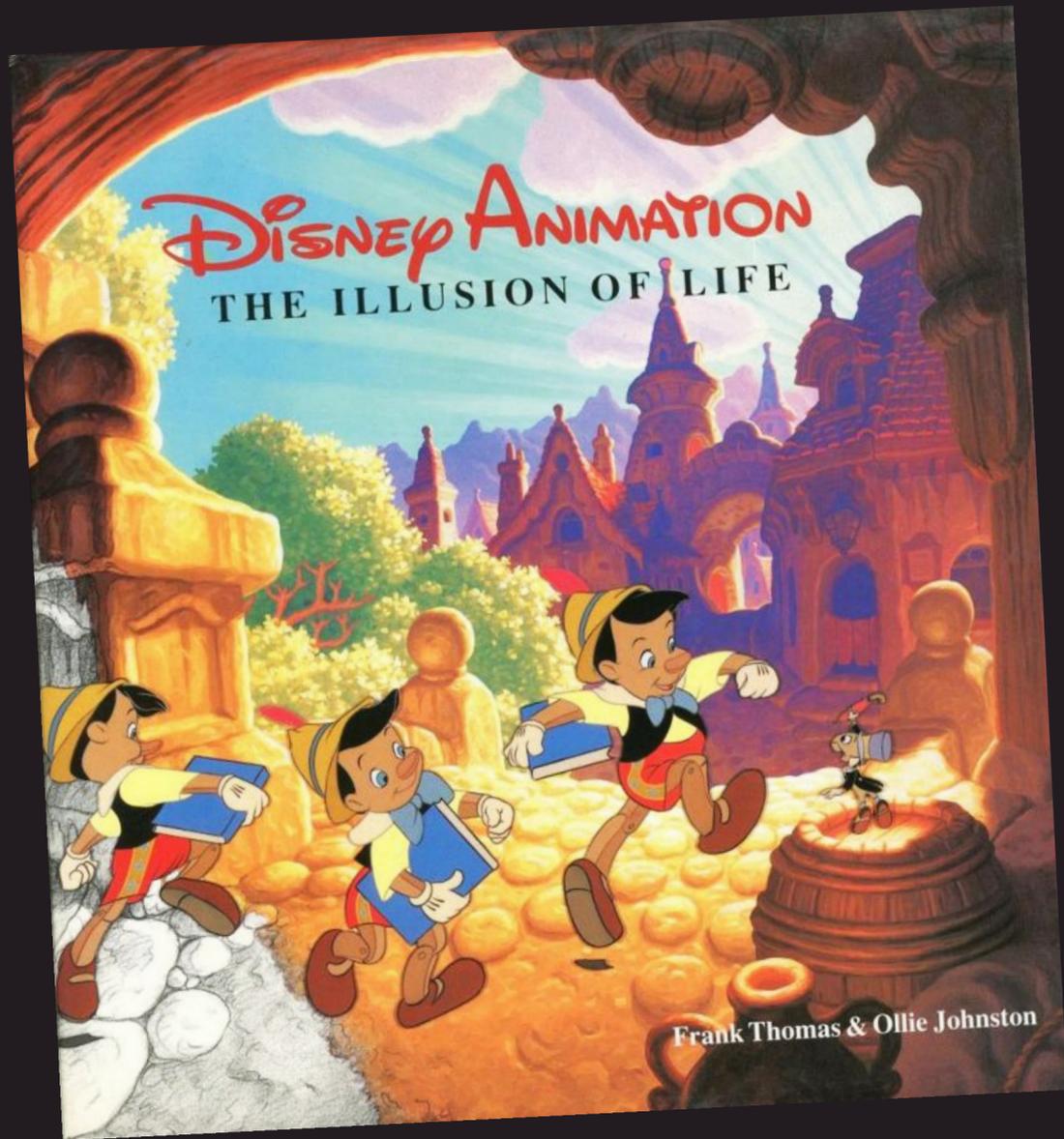
Great

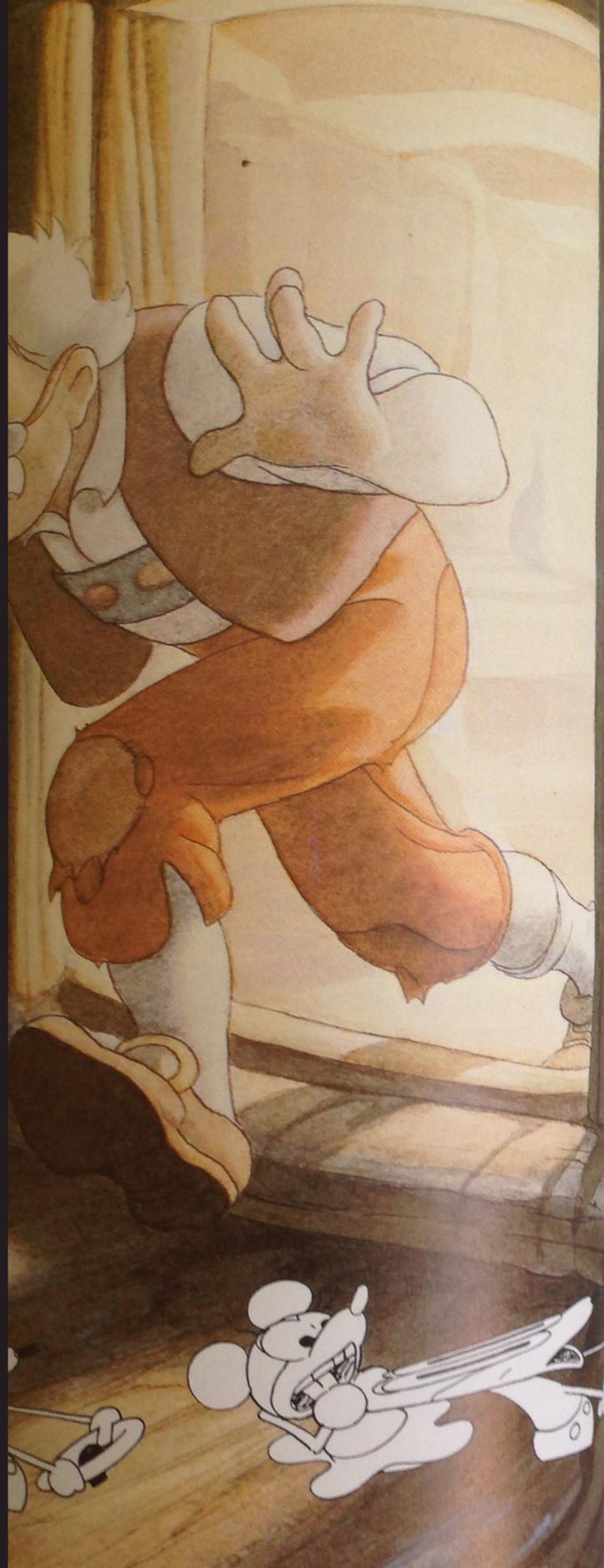
UI animation has
purpose and *style*



Animating With Style







3. The Principles of Animation



"When we consider a new project, we really study it . . . not just the surface idea, but everything about it."

Walt Disney

A new jargon was heard around the studio. Words like "aiming" and "overlapping" and "pose to pose" suggested that certain animation procedures gradually had been isolated and named. Verbs turned into nouns overnight, as, for example, when the suggestion, "Why don't you stretch him out more?" became "Get more stretch on him." "Wow! Look at the squash on that drawing!" did not mean that a vegetable had splattered the artwork; it indicated that some animator had successfully shown a character in a flattened posture.

Some of this terminology was just assigning new meanings to familiar and convenient words. "Doing" a scene could mean acting out the intended movements, making exploratory drawings, or actually animating it; and once it was "done," the scene moved on to the next department. Layouts were done, backgrounds were done, recording was done, and, eventually, the whole picture had been done. Mixed in with these terms were the new names and phrases with more obscure meanings.

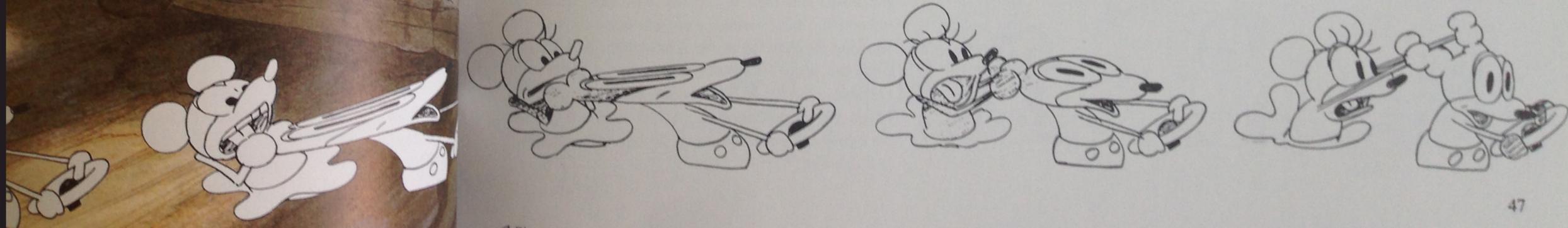
The animators continued to search for better methods of relating drawings to each other and had found a few ways that seemed to produce a predictable result. They could not expect success every time, but these special techniques of drawing a character in motion did offer some security. As each of these processes acquired a name, it was analyzed and perfected and talked about, and when new artists joined the staff

they were taught these practices as if they were the rules of the trade. To everyone's surprise, they became the fundamental principles of animation:

1. Squash and Stretch
2. Anticipation
3. Staging
4. Straight Ahead Action and Pose to Pose
5. Follow Through and Overlapping Action
6. Slow In and Slow Out
7. Arcs
8. Secondary Action
9. Timing
10. Exaggeration
11. Solid Drawing
12. Appeal

SQUASH and **STRETCH**

By far the most important discovery was what we call Squash and Stretch. When a fixed shape is moved about on the paper from one drawing to the next, there is a marked rigidity that is emphasized by the movement. In real life, this occurs only with the most rigid shapes, such as chairs and dishes and pans. Anything composed of living flesh, no matter how bony, will







Animation Principle:

Timing & Spacing



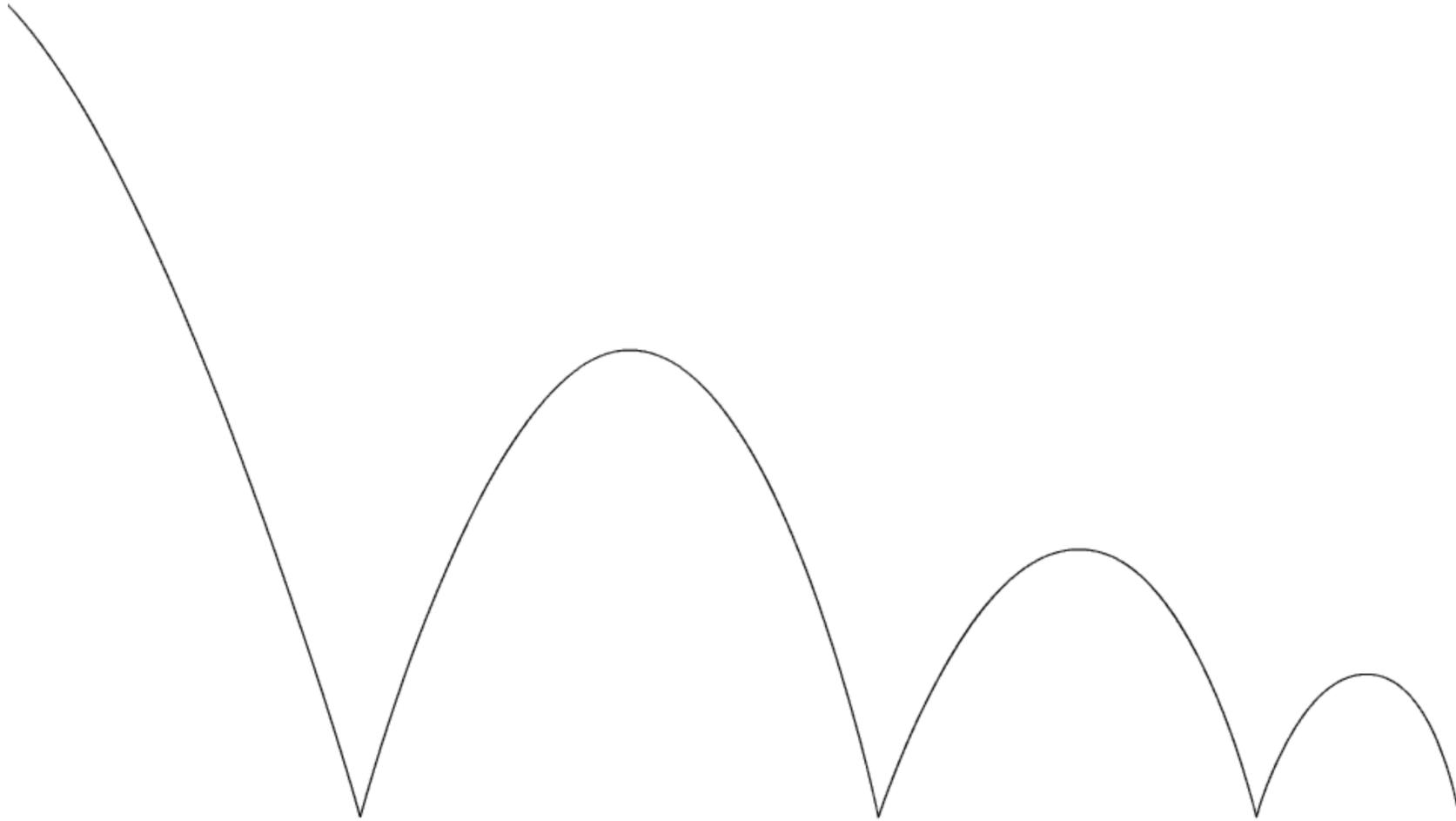


Timing

The amount of time it takes for an action to happen. The duration.







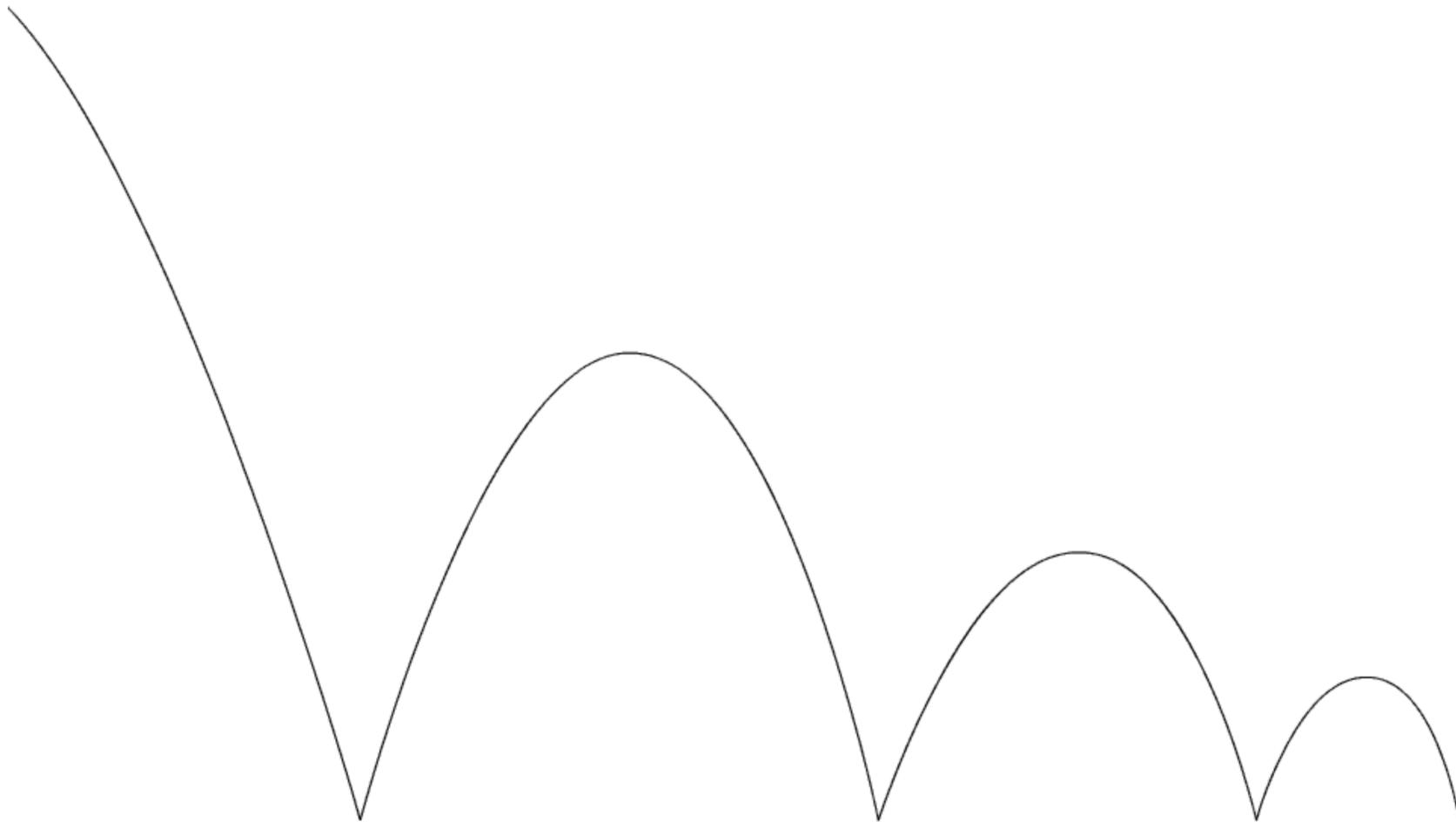
Timing



Spacing

The changes in speed over the duration of the action's timing.

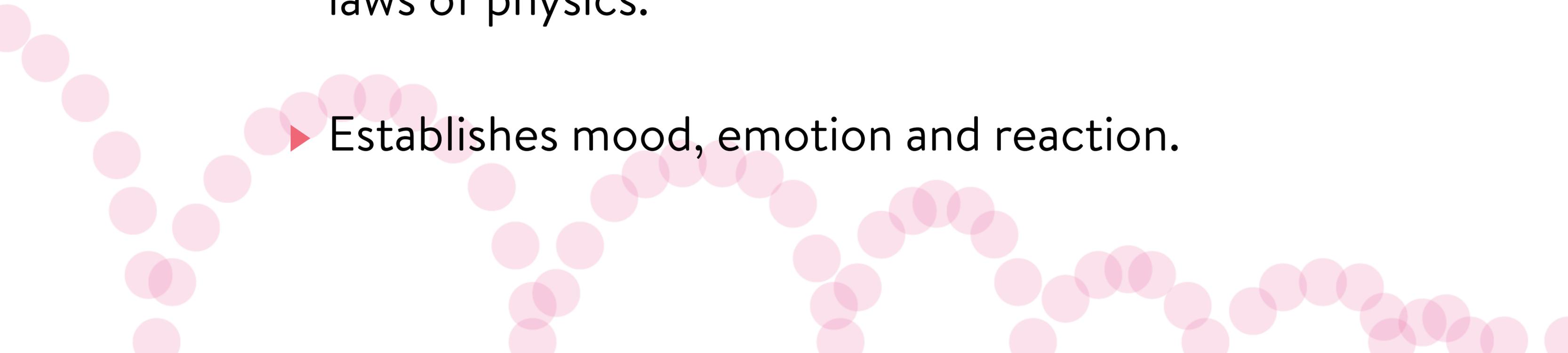




Spacing



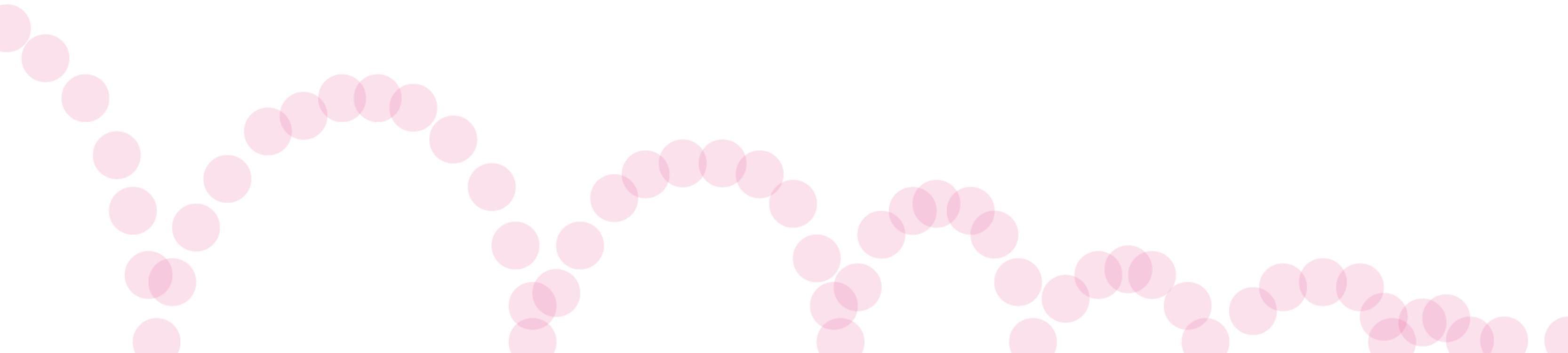
Timing & Spacing

- ▶ Makes animated objects appear to obey the laws of physics.
 - ▶ Establishes mood, emotion and reaction.
- 



Timing = duration

Spacing = easing





CSS Easing Keywords

linear

ease

ease-in

ease-out

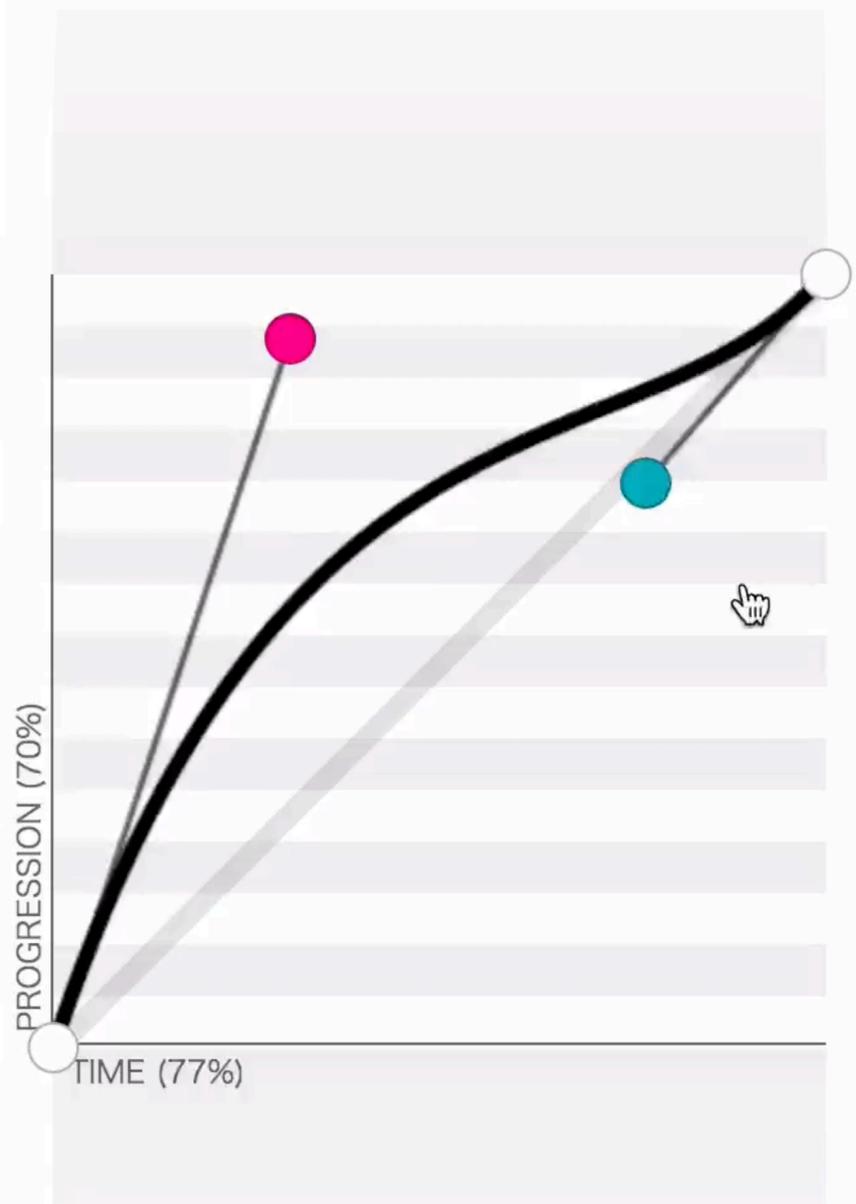
ease-in-out



```
cubic-bezier(0.42, 0, 0.58, 1);
```

DONATE

Made by [Lea Verou](#) with care * [About](#)



cubic-bezier(.31, .92, .77, .73)

SAVE

Preview & compare

GO!

Duration: 1 second

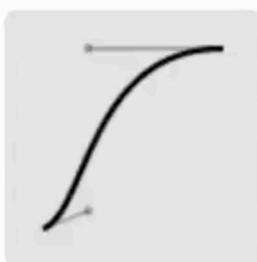


Library

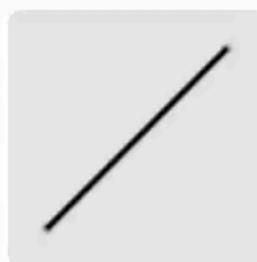
IMPORT

EXPORT

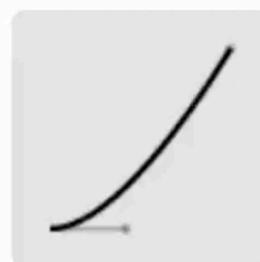
Click on a curve to compare it with the current one.



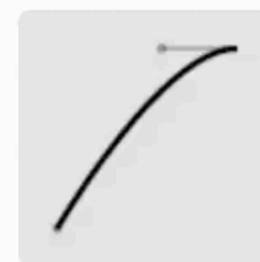
ease



linear



ease-in



ease-out



ease-in-out

cubic-bezier.com

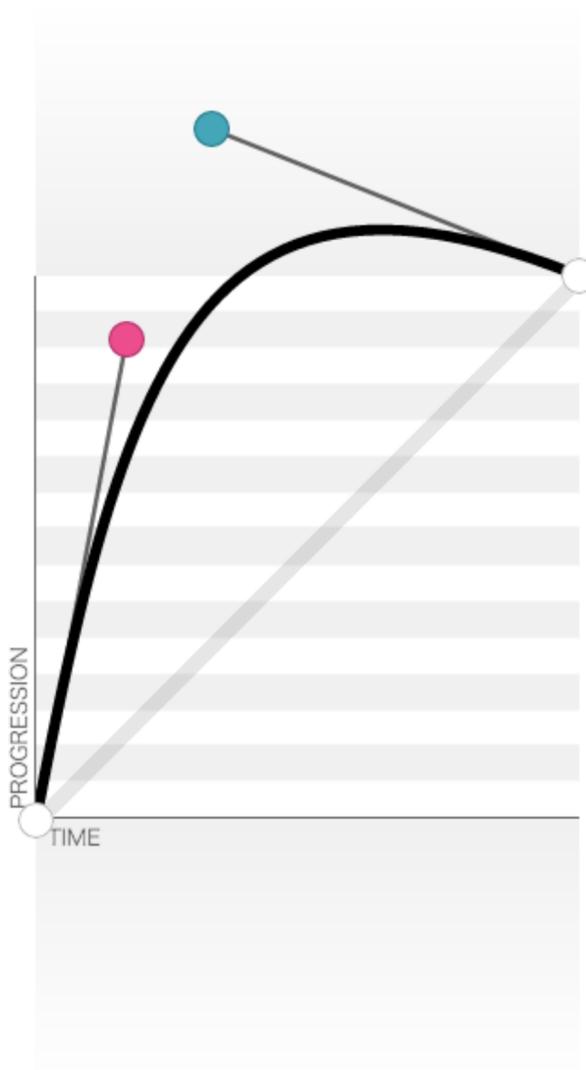
Everything
is better with
cubic-beziers





Timing & Spacing

- ▶ What sort of physical traits fit our modal?
 - ▶ What sort of mood or emotion should it show?
- 



cubic-bezier(.17, .88, .32, 1.27) [SAVE](#)

This curve contains values out of range. But fear not young padawan! Just use `cubic-bezier(.17, .88, .32, 1)` as well for Webkit until the [bug #45761](#) fix propagates to Safari.

1,823

[Tweet](#)

Preview & compare [GO!](#)

Duration: 1 second



Library [IMPORT](#) [EXPORT](#)

Click on a curve to compare it with the current one.



ease



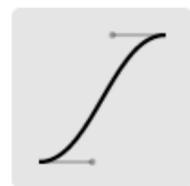
linear



ease-in



ease-out



ease-in-out

Tip: Right click on any library curve and select "Copy Link Address" to get a permalink to it which you can share with others









Animation Principle:

Follow Through



Follow Through

Not everything comes to a stop at once.



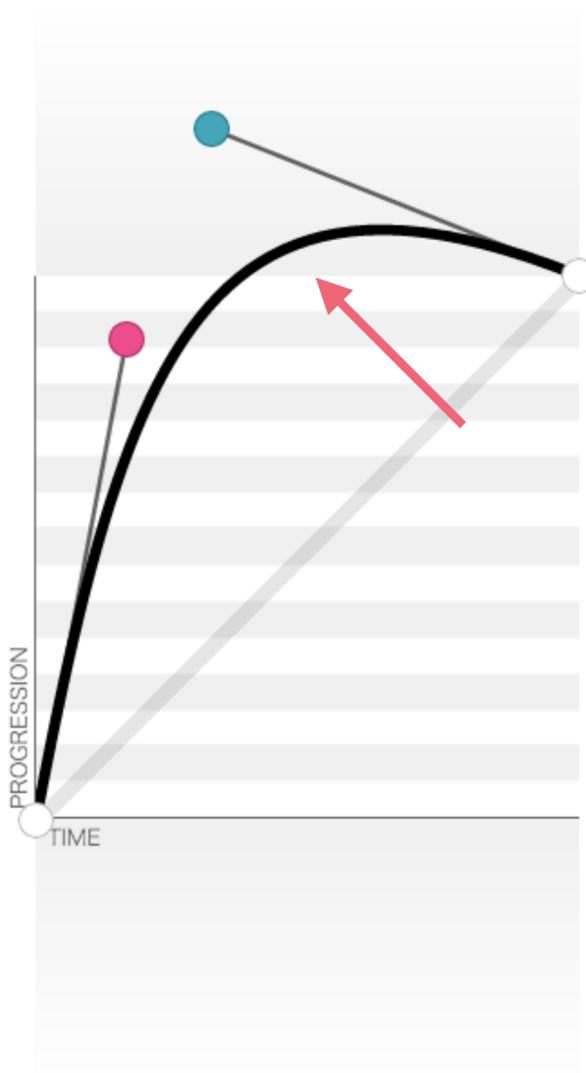
Follow Through



Follow Through

Overshooting the target position.





`cubic-bezier(.17, .88, .32, 1.27)` [SAVE](#)

1,823 [Tweet](#)

This curve contains values out of range. But fear not young padawan! Just use `cubic-bezier(.17, .88, .32, 1)` as well for Webkit until the [bug #45761](#) fix propagates to Safari.

Preview & compare [GO!](#)

Duration: 1 second



Library [IMPORT](#) [EXPORT](#)

Click on a curve to compare it with the current one.



ease



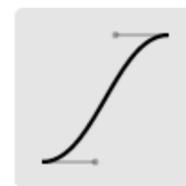
linear



ease-in



ease-out



ease-in-out

Tip: Right click on any library curve and select "Copy Link Address" to get a permalink to it which you can share with others



Animation Principle:

Secondary Action

Secondary Action

Supplemental action, reinforces
and adds dimension.

12:55 PM - 14 Mar 2016

 Nashville, TN



Your Reservation is complete!

2pm Saturday July 23rd

The cats at Miss Mittens' Cat Cafe are ready to welcome you and your guest for lunch. It will be a purrrfect afternoon.



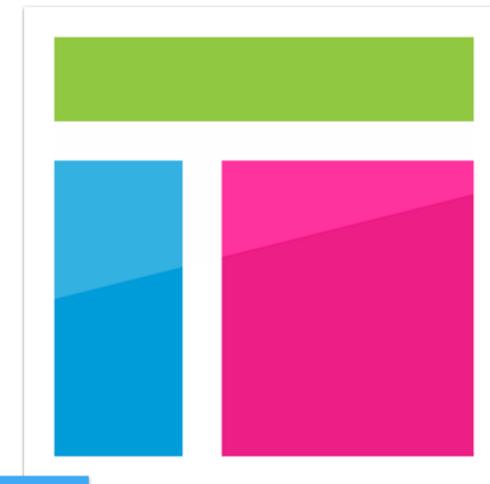
[Make another reservation](#)





Prototype, iterate & test your
motion design ideas.





Expressing Your Brand In Motion



Match animation styles
to your voice & tone.



Design Adjectives

- ▶ Energetic?
- ▶ Friendly?
- ▶ Sleek?
- ▶ Strong?
- ▶ Playful?

Follow through & anticipation:
Energetic, friendly, bold

Squash and stretch:

High energy and playful

Ease-in-outs:

Balanced and measured

Smaller movements:
Calm and subtle

Opacity and blurs:

Stable, gentle, mellow

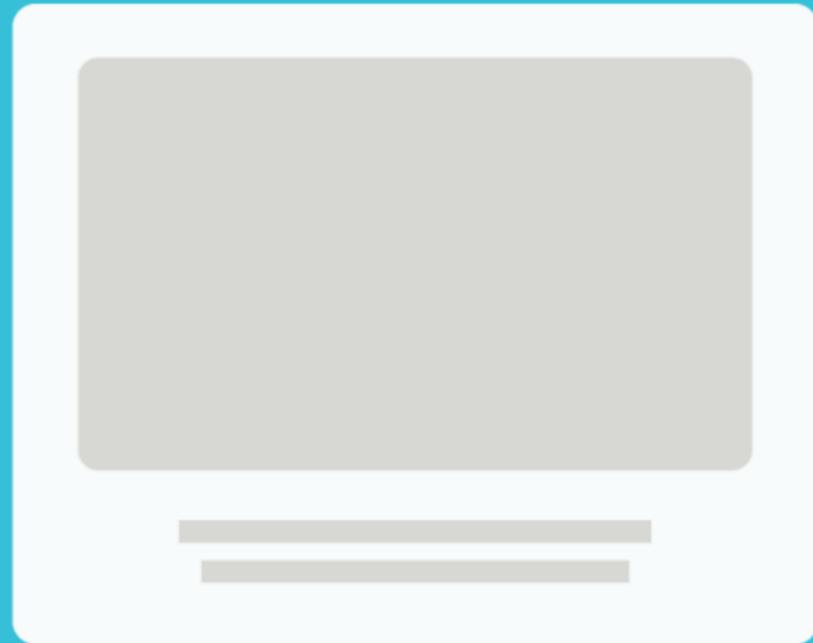
The Bigger Picture



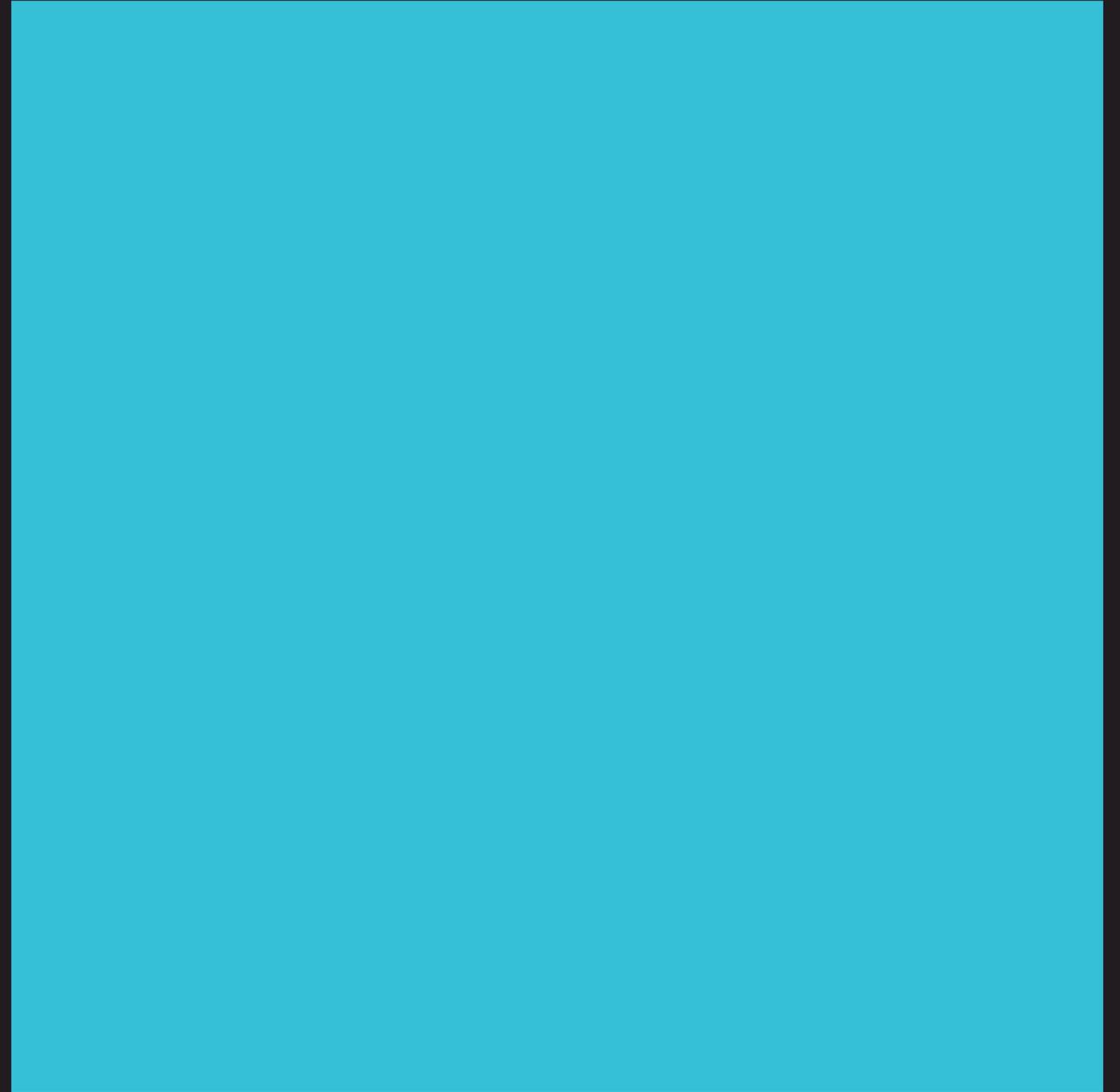
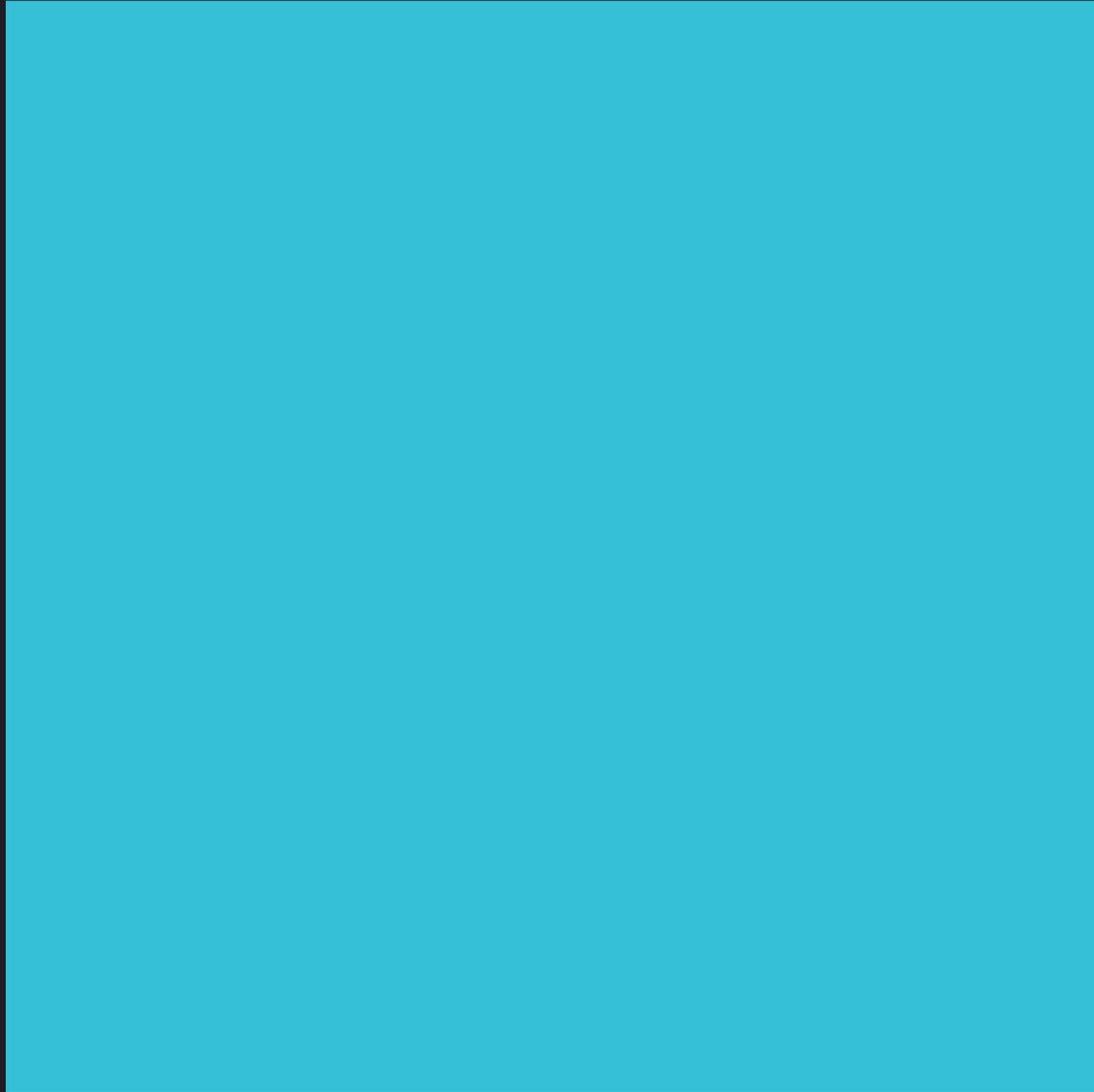
Choreography

Designing all your UI animations
to feel logical and related.

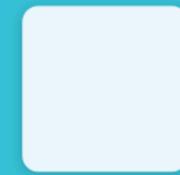
Similar objects animate in similar ways



Entrance informs exit



Match velocities



Cohesive or consistent?

Consistent

EN

LOGIN

MY FAVORITES 0

MY CART 0

NIXON

NEW

MENS

WOMENS

WATCHES



LEAVE DONE IN THE DUST.

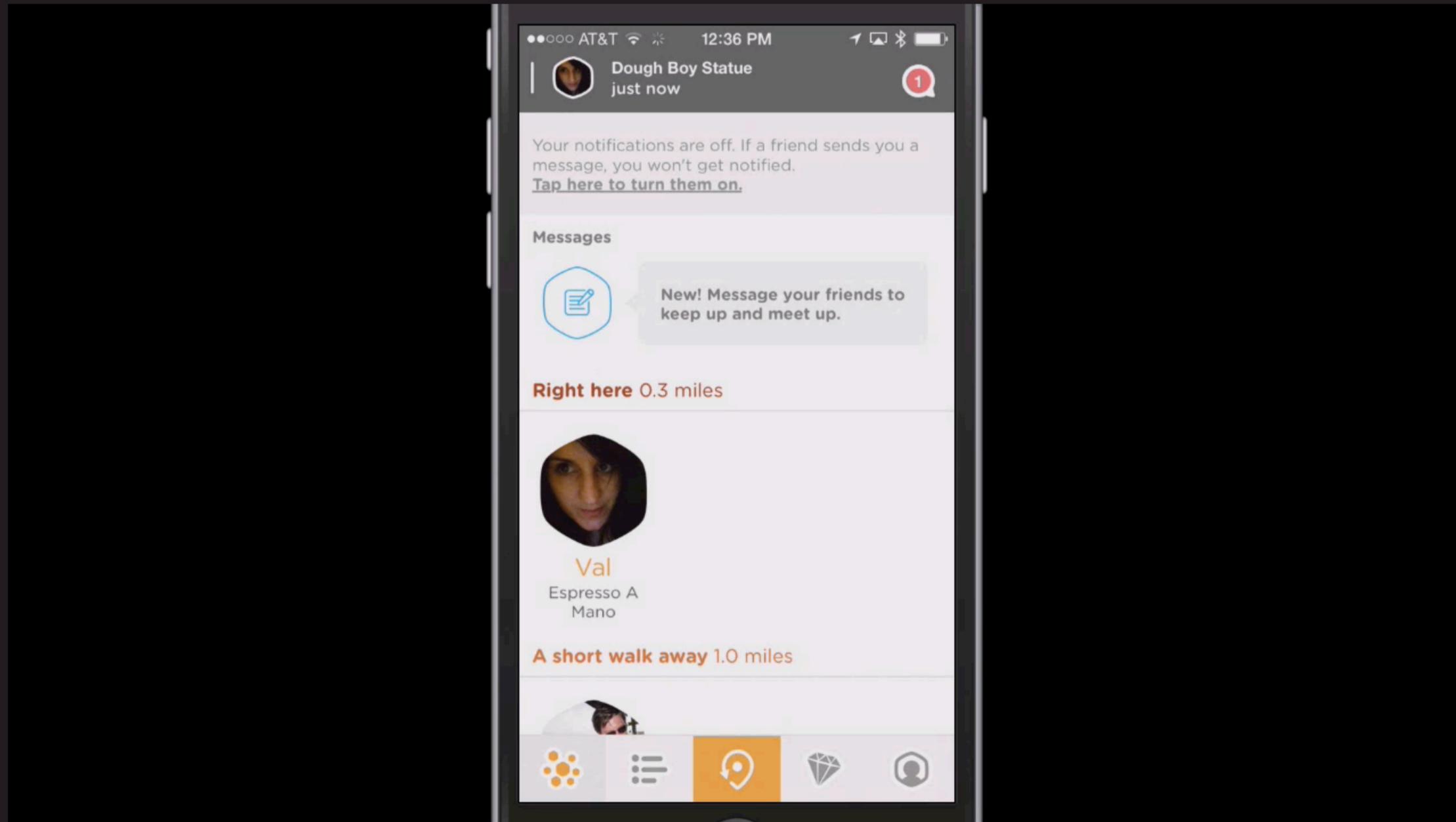
THE SENTRY CHRONO

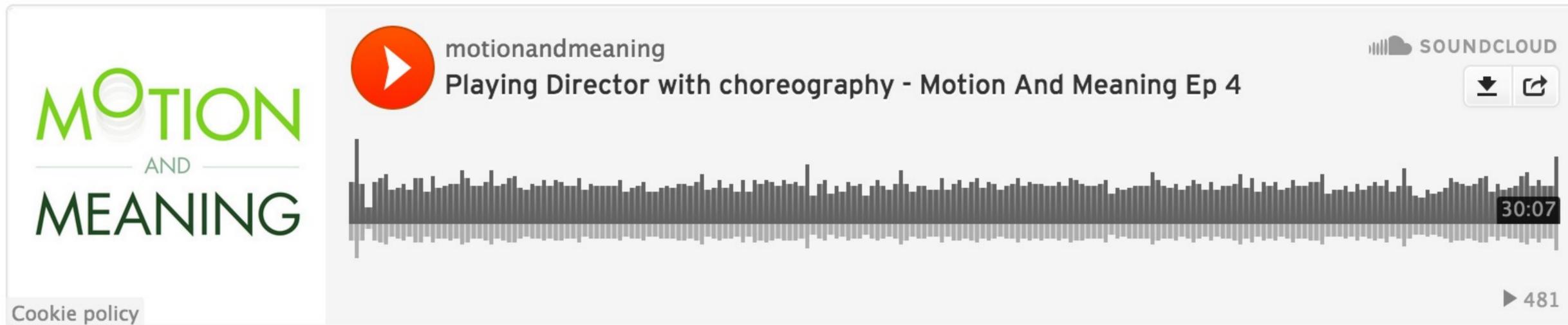
This season our inspiration is fueled by the shifting environments of our team, driving us to new places and new ideas.

SHOP NEW ARRIVALS



Cohesive





[Subscribe in iTunes](#) or [RSS](#)

Episode 4: Playing Director with choreography

No UI animation acts alone. All the bits of motion across your product or site add up to create a bigger picture. Keeping that in mind means thinking about choreography and how everything works together. In this episode we discuss what choreography means in our digital realm while using a lot of words that start with C: choreography, consistency, and cohesiveness.

Episode Links

[Material Design - Authentic Motion](#)

[Glen Keane on animating the plausible](#)

Animation belongs
in your style guide



IBM DESIGN LANGUAGE | ANIMATION UPDATE

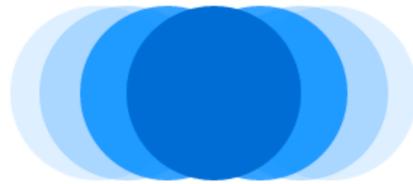
Machines in motion

[Start exploring](#)

Document categories of animation

- ▶ Entrances and exits
- ▶ Give emphasis
- ▶ Give feedback
- ▶ Transitions between states
- ▶ Personality and brand
- ▶ Orientation
- ▶ Storytelling

Type of Animation



ENTER & EXIT

The appearance or disappearance of an object on the screen.



EMPHASIS

Drawing attention to an object that is already on the screen.



TRANSITIONAL

Informing the user that a context change is taking place.



PERSONALITY & BRANDING

Characteristics or sequences of engaging animation that create surprise and delight.

Physical Mass

Objects in the physical world have mass, thus they speed up from a

Other Considerations

The object being moved or animated should abide by these guiding

Document *your* building blocks

▶ Opacity

▶ Scale

▶ Colour

▶ Depth

▶ Position

▶ Rotation

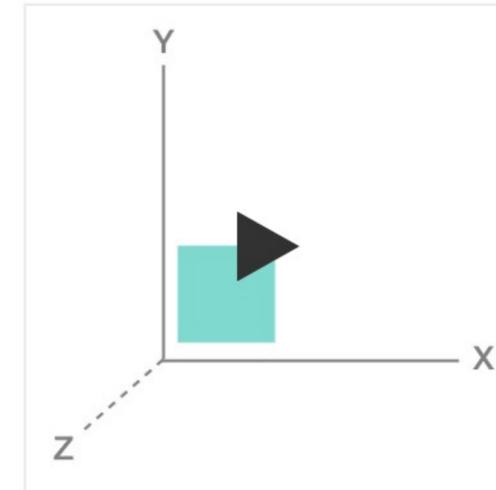
Basics determine the essential qualities of how objects animate.

BUILDING BLOCKS

Properties are building blocks that can be used individually or in combination to create animations.

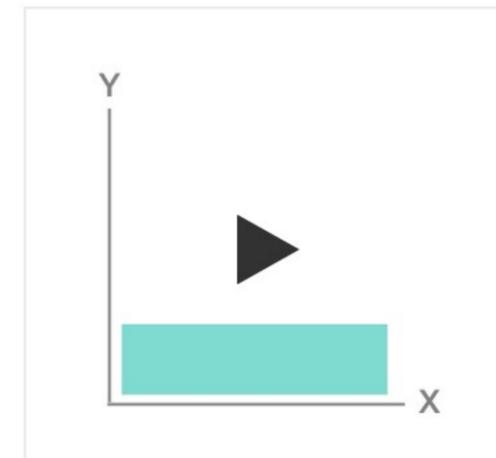
POSITION

When an object is placed on an axis, it informs the path on which it travels. Positioning can be influenced by forces such as resistance, thrust and gravity.



SCALE

The relative size of an item can make an object appear closer or further away in space, signifying an object's importance and drawing users' attention.



Fade In/Out



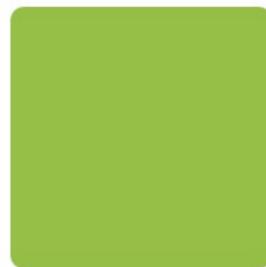
Opacity animated only

Scale In/Out



Scale and opacity, offset timing

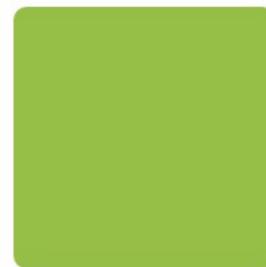
Slide



TranslateY

combine with fade in/out for long slides

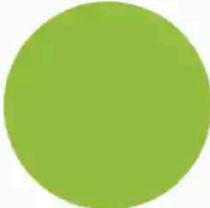
Point to point



TranslateX

Strong and stable

"Ease-In"



Scale



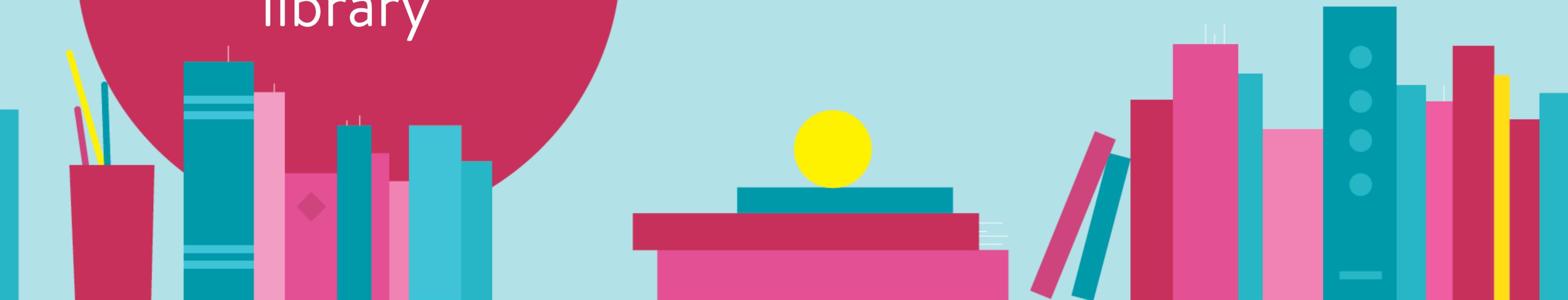
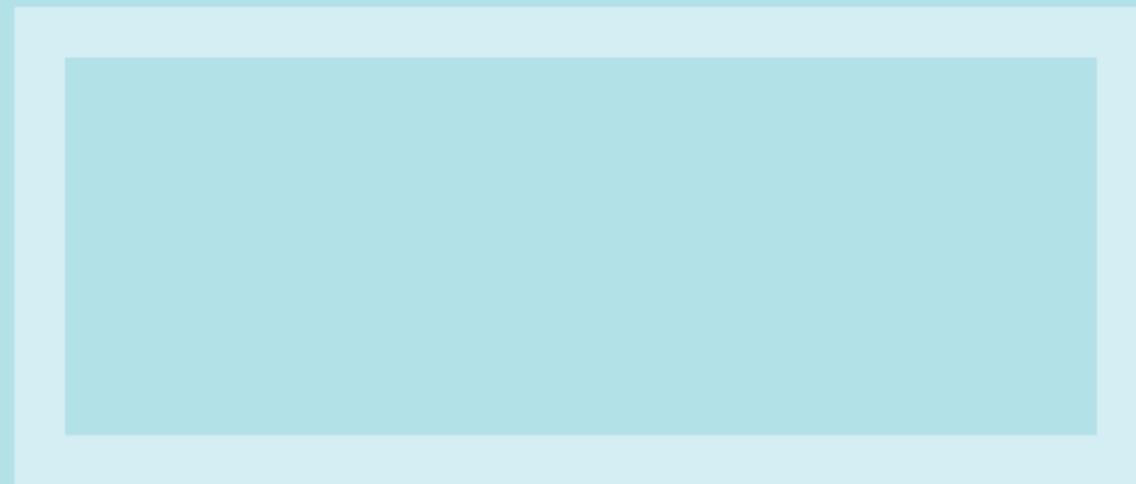
TranslateX

```
$easeIn  
cubic-bezier(.56,0,1,1)
```

"Ease-Out"



Aim to build *your own* animation library



Be Inspired!



Auntie Mame (1958)

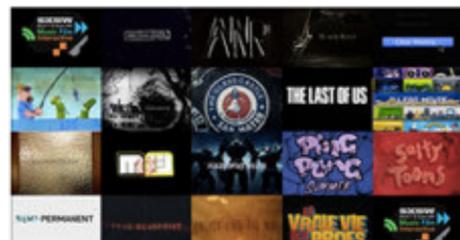


Subscribe to Art of the Title



MARCH 25, 2014

The vibrant and joyful 1958 film *Auntie Mame* presents the art of the title sequins. / BY LOLA LANDEKIC [View article](#)



Flickr

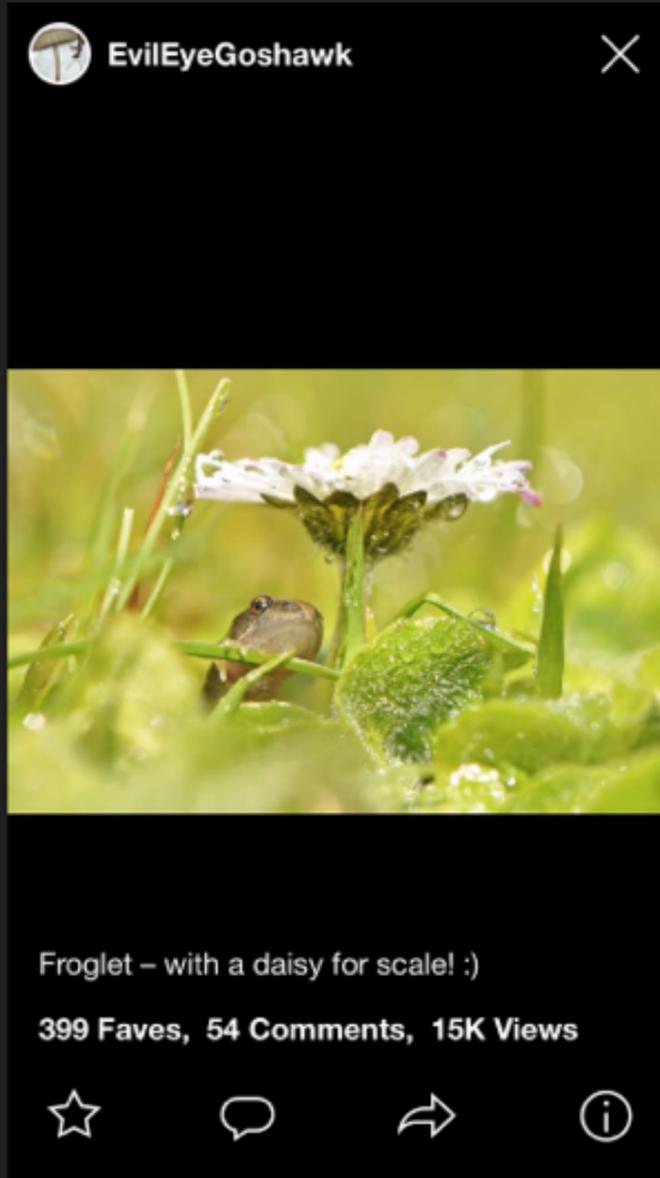
Patterns: Content, Interactive, UI Elements.



Posted: April 28th, 2014

Flickr

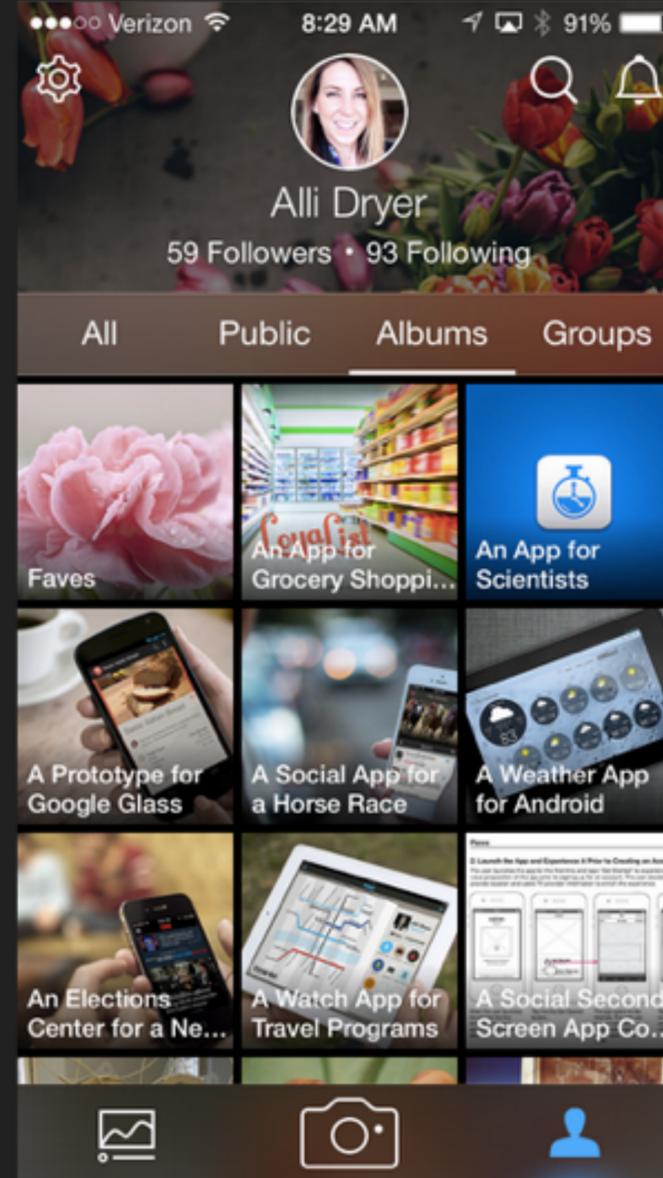
Patterns: Interactive, Transitions, UI Elements.



Posted: April 28th, 2014

Flickr

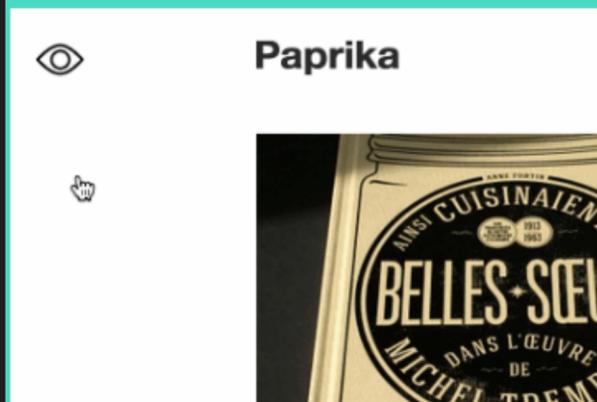
Patterns: Content, Pull to Refresh, UI Elements.



Posted: April 28th, 2014

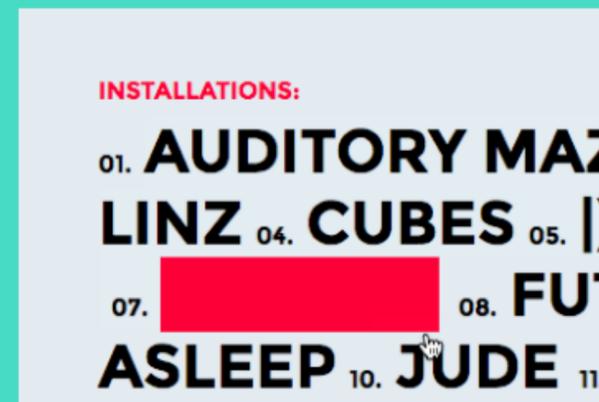
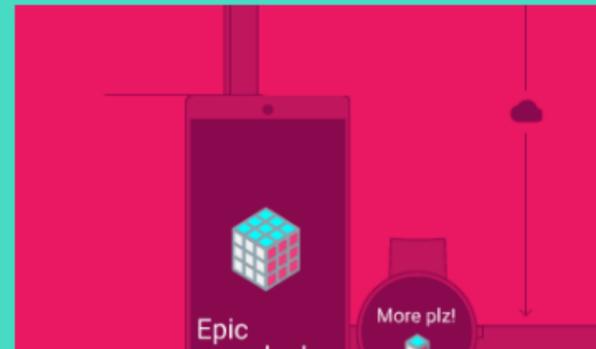
Discover and share moving interfaces

View the latest



The Empathy Mirror Neurofeedback enables us to better understand our emotions and those of others.

Don't Turn Away Colin Finlay photographs the consequences of climate change.



Featured Interaction

Drag

<http://uyi.io/>



Designing Interface Animation

rosenfeldmedia.com/books/designing-interface-animation/



Thanks!

Join the crew: uianimationnewsletter.com

Let's chat on twitter: [@vlh](https://twitter.com/vlh)