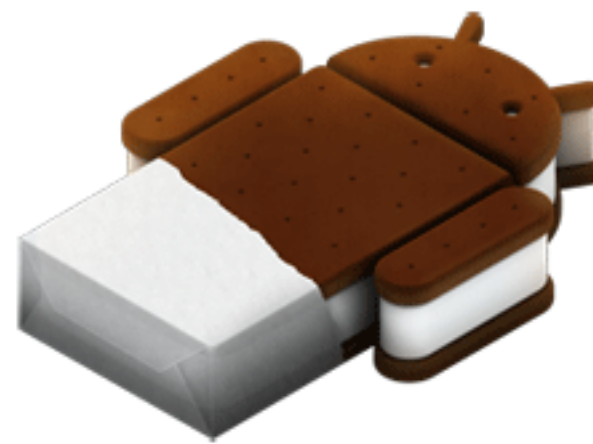


# Responsive mobile design

Kirill Grouchnikov  
Android, Google Inc.



# background

- Android 3.0 - 02/2011
- Android 3.2 - 07/2011
- Android 4.0 - 11/2011

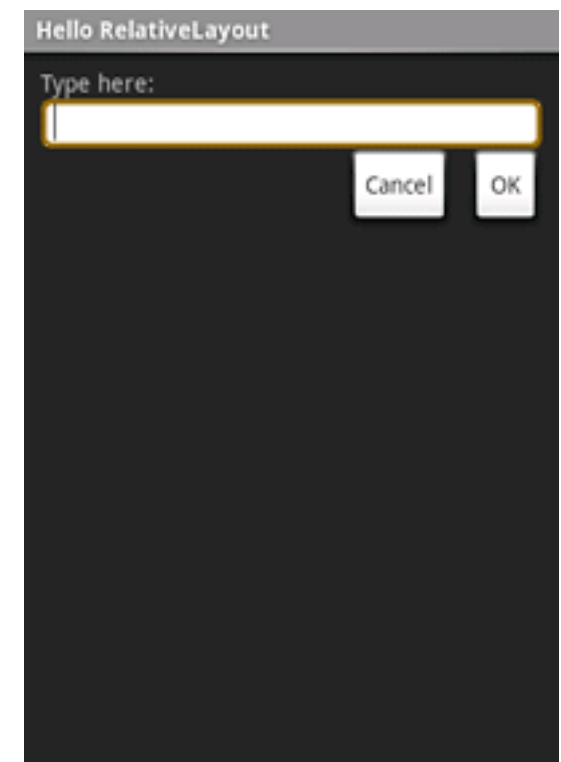


- Market 3.0 - 07/2011
- Google Play 3.5 - 03/2012

# this talk is **not** about

## Layouts I0I

- *FrameLayout*
- *LinearLayout*
- *RelativeLayout*
- ...



# and not even about

## Layouts 202

- *android:layout\_alignBaseline*
- *android:layout\_alignWithParentIfMissing*
- *android:fillViewport*
- ...

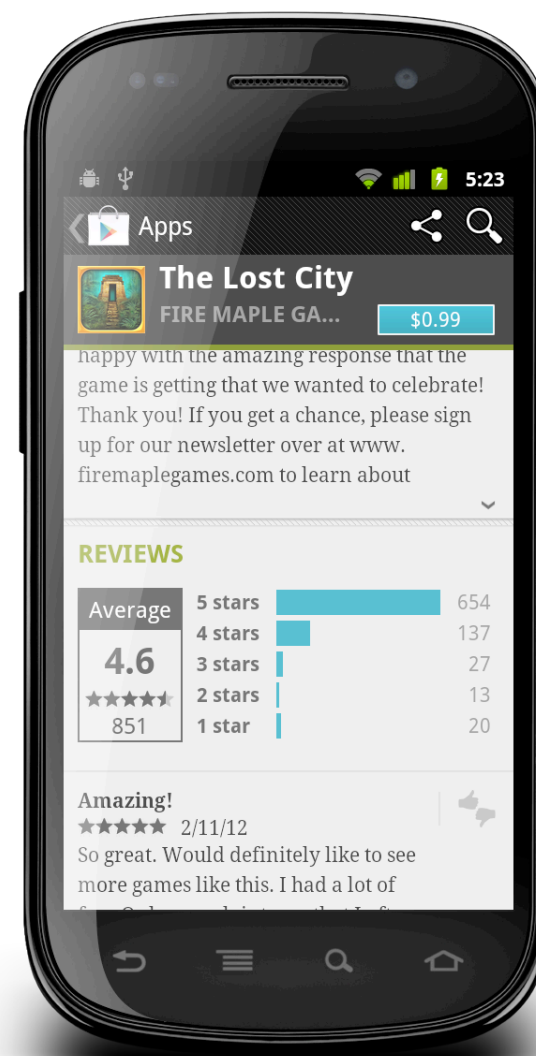
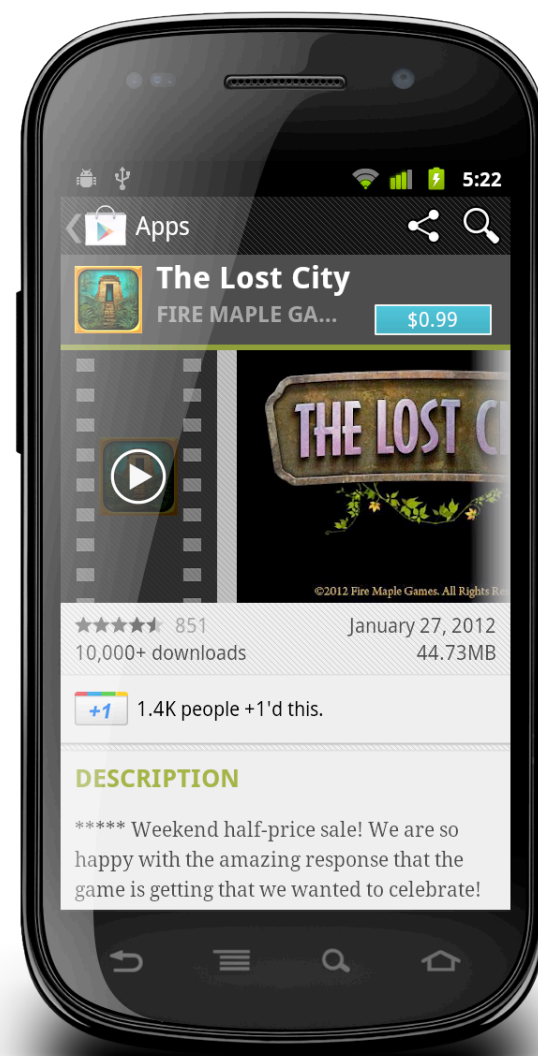


this talk is about

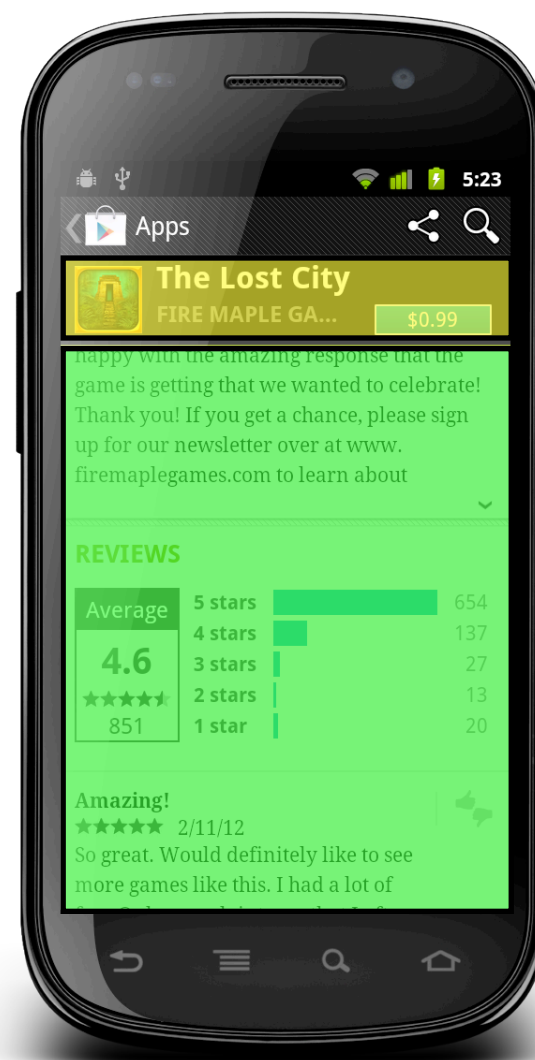
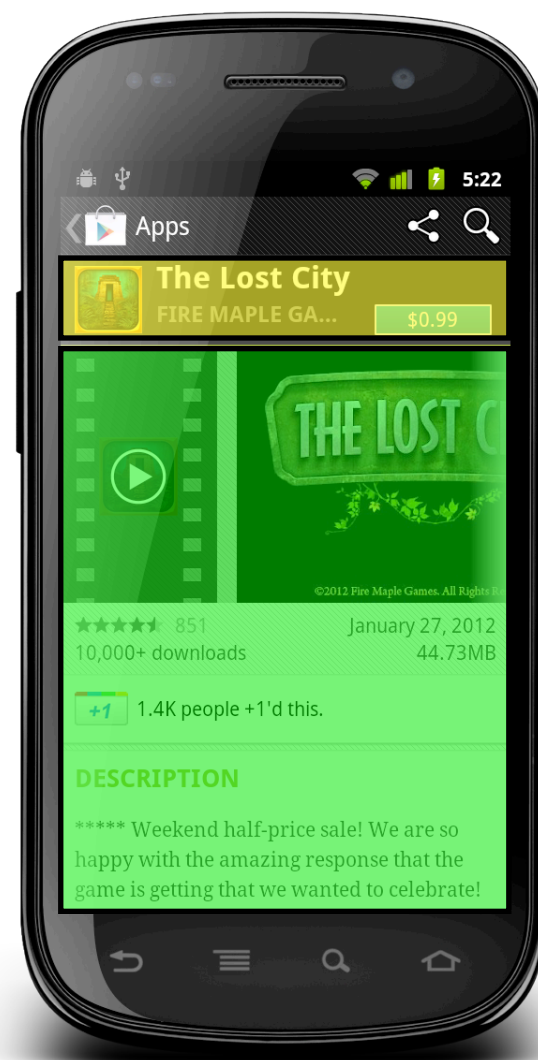
effective use of screen estate  
for displaying your content



examples

# app details page

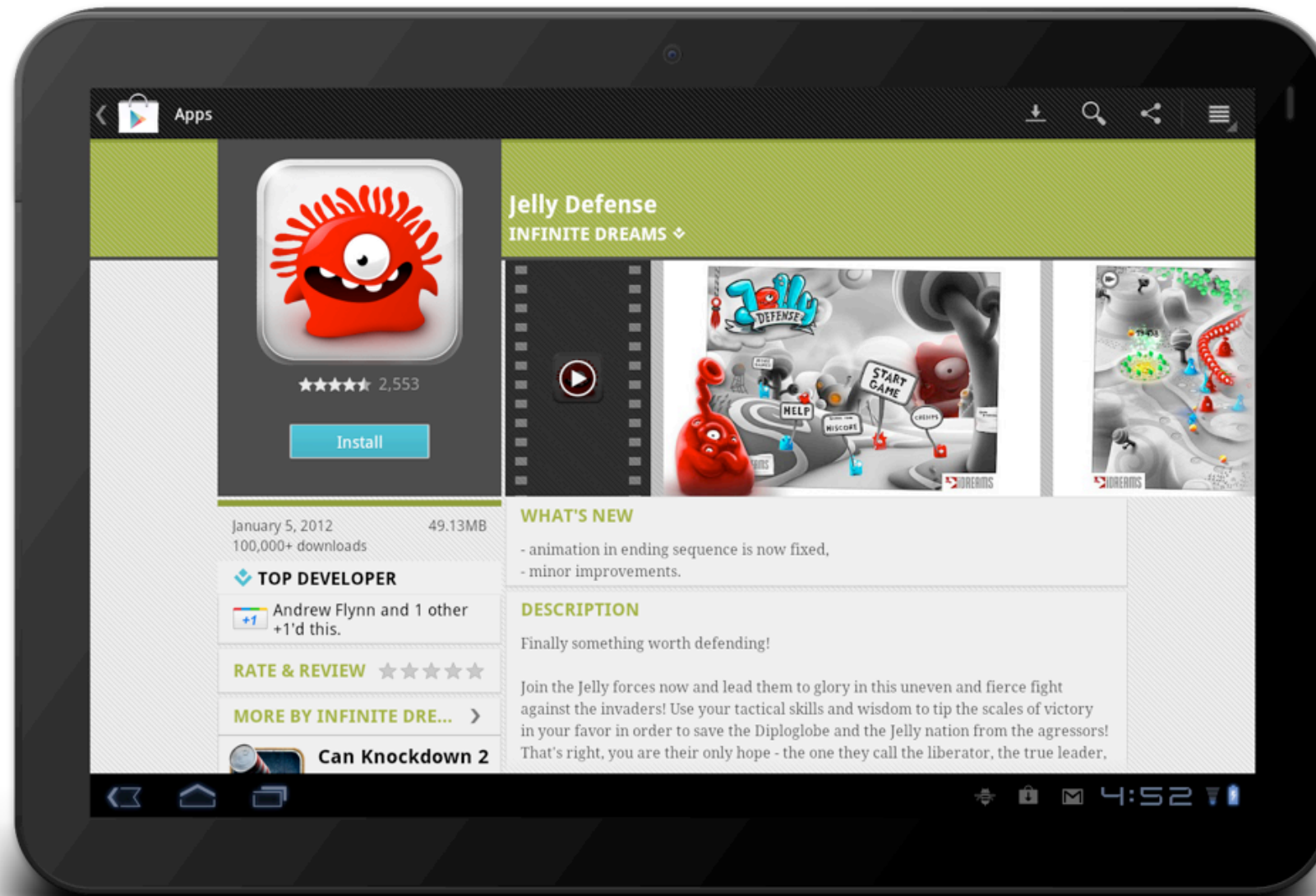


# app details page

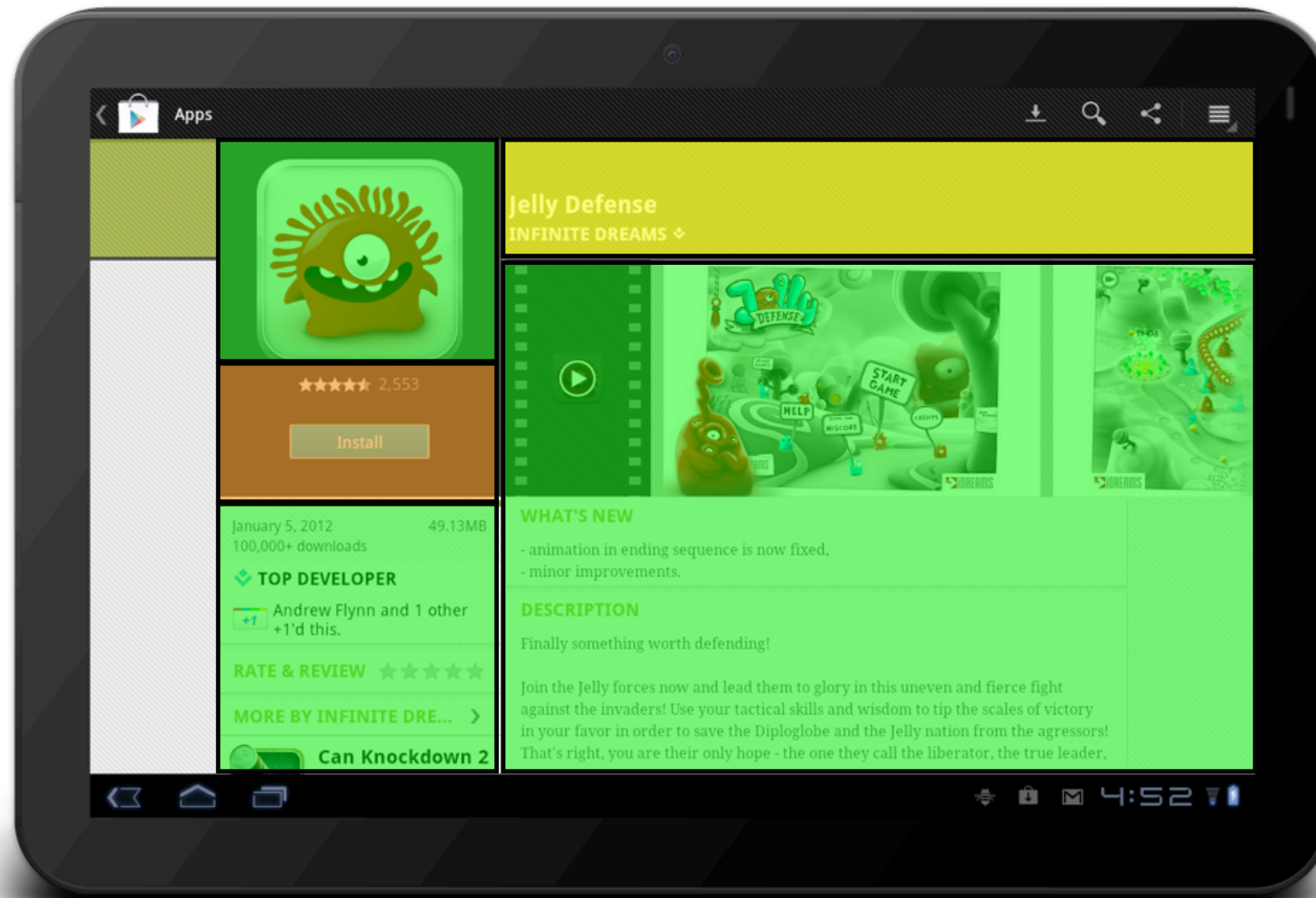





 locked  
 scrolling

# app details page

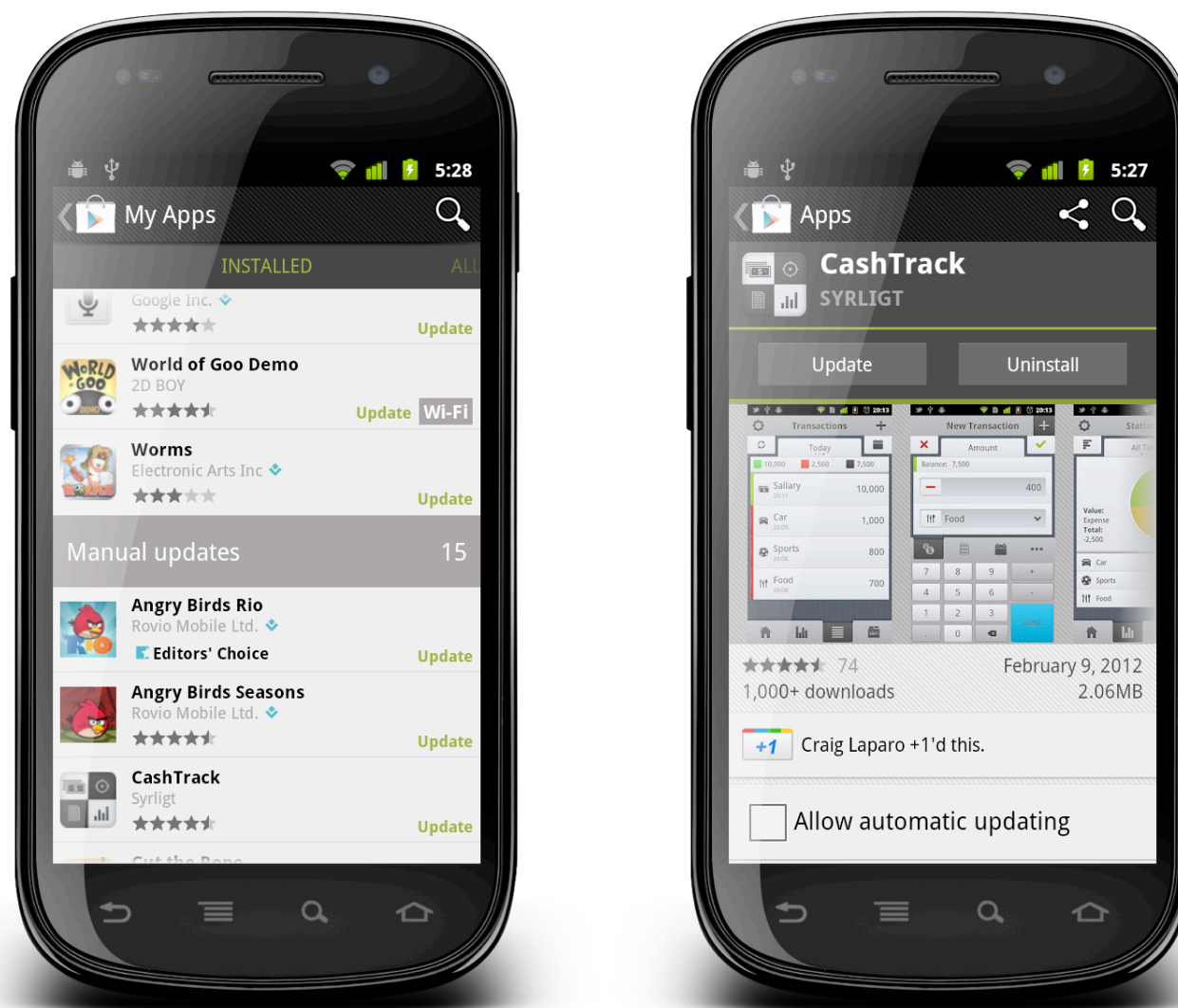


# app details page



-  locked
-  scroll-to-snap
-  scrolling

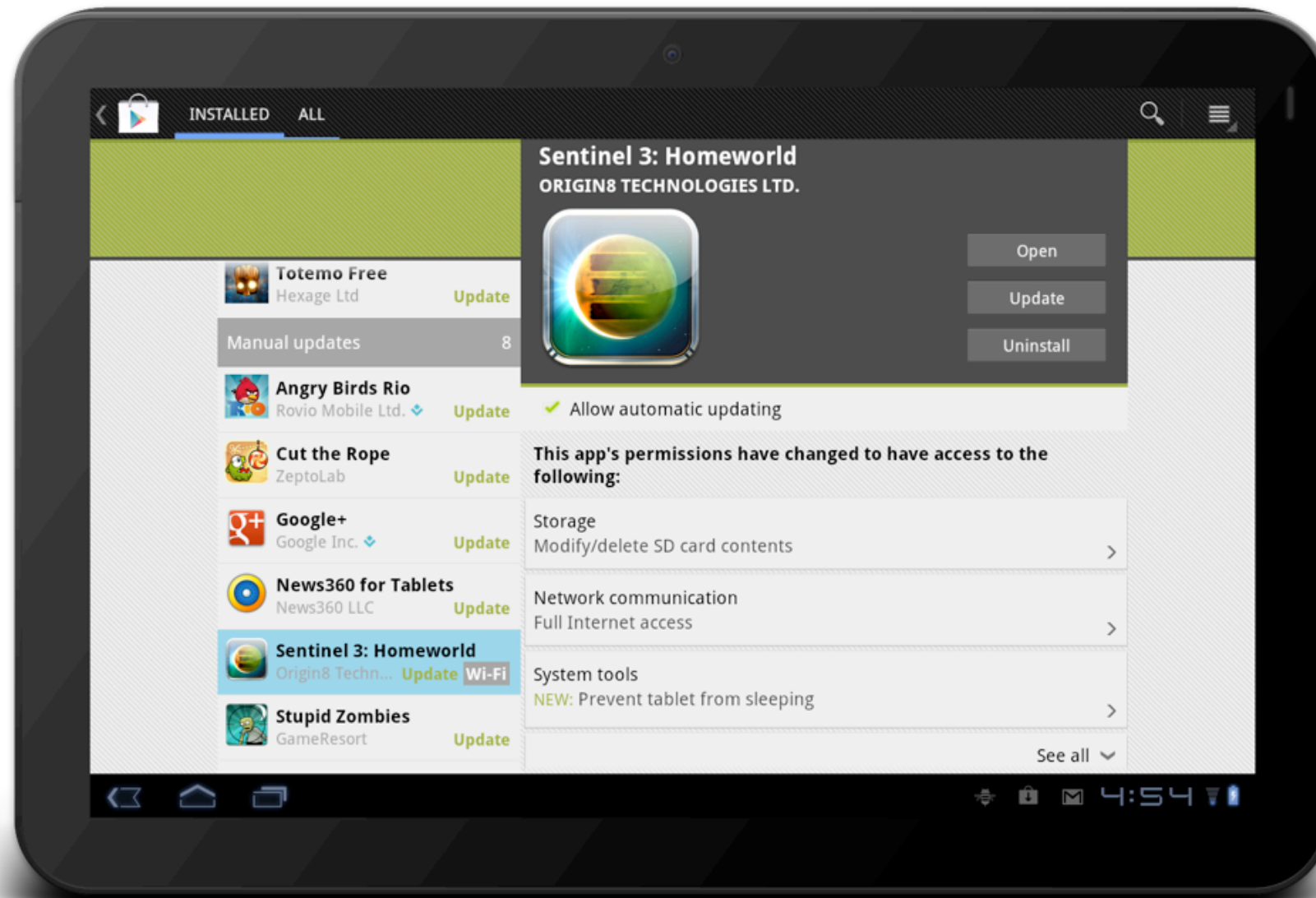
# my apps + app details



two screens



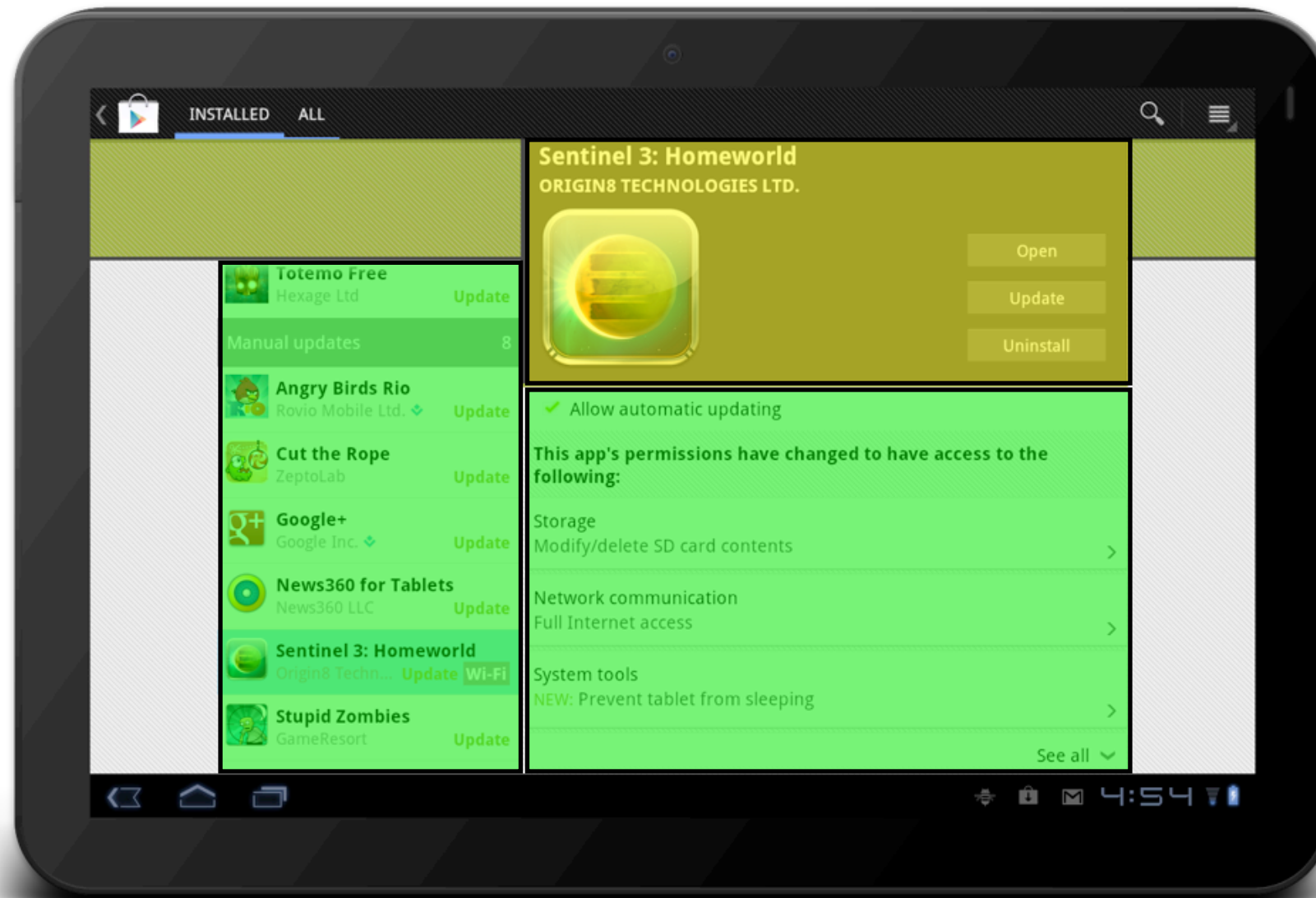
# my apps + app details



combined view



# my apps + app details



locked  
scrolling

master

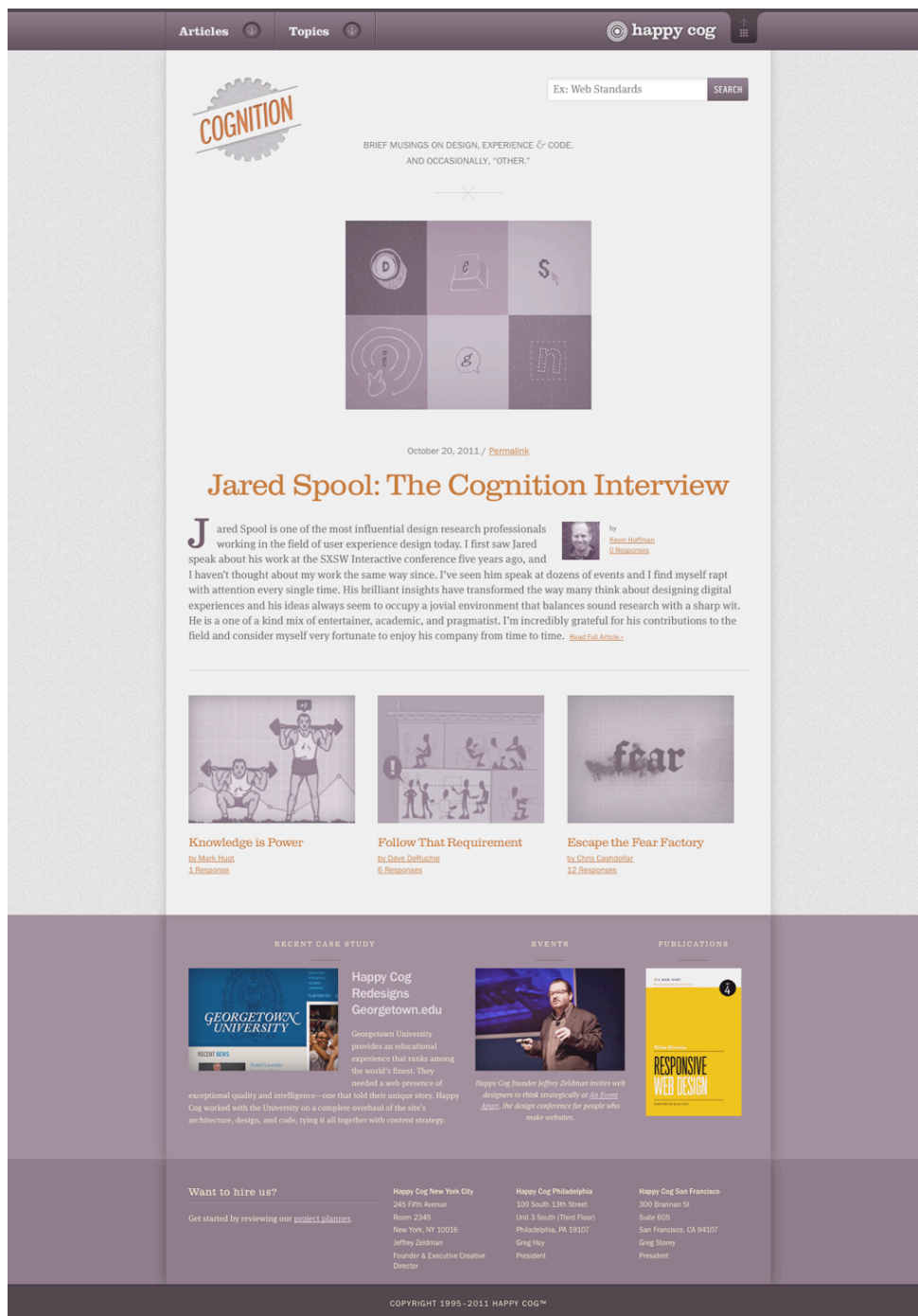
details

same content,  
same hierarchy

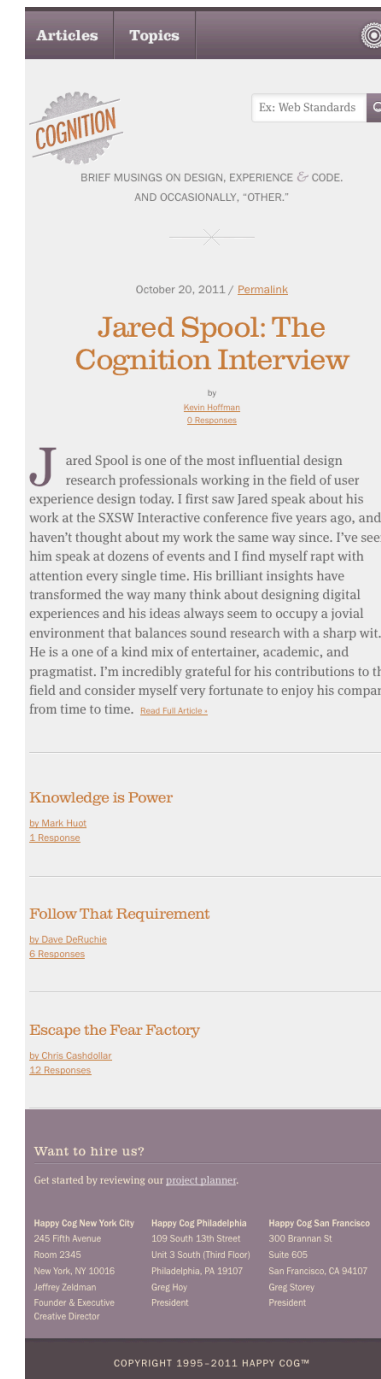
adapting to context

responsive mobile  
design

# http://cognition.happycog.com/

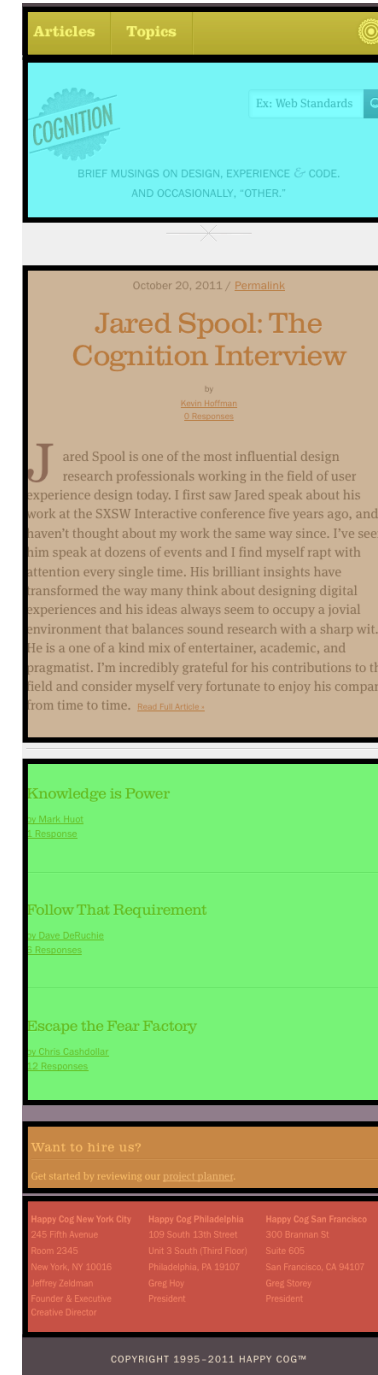
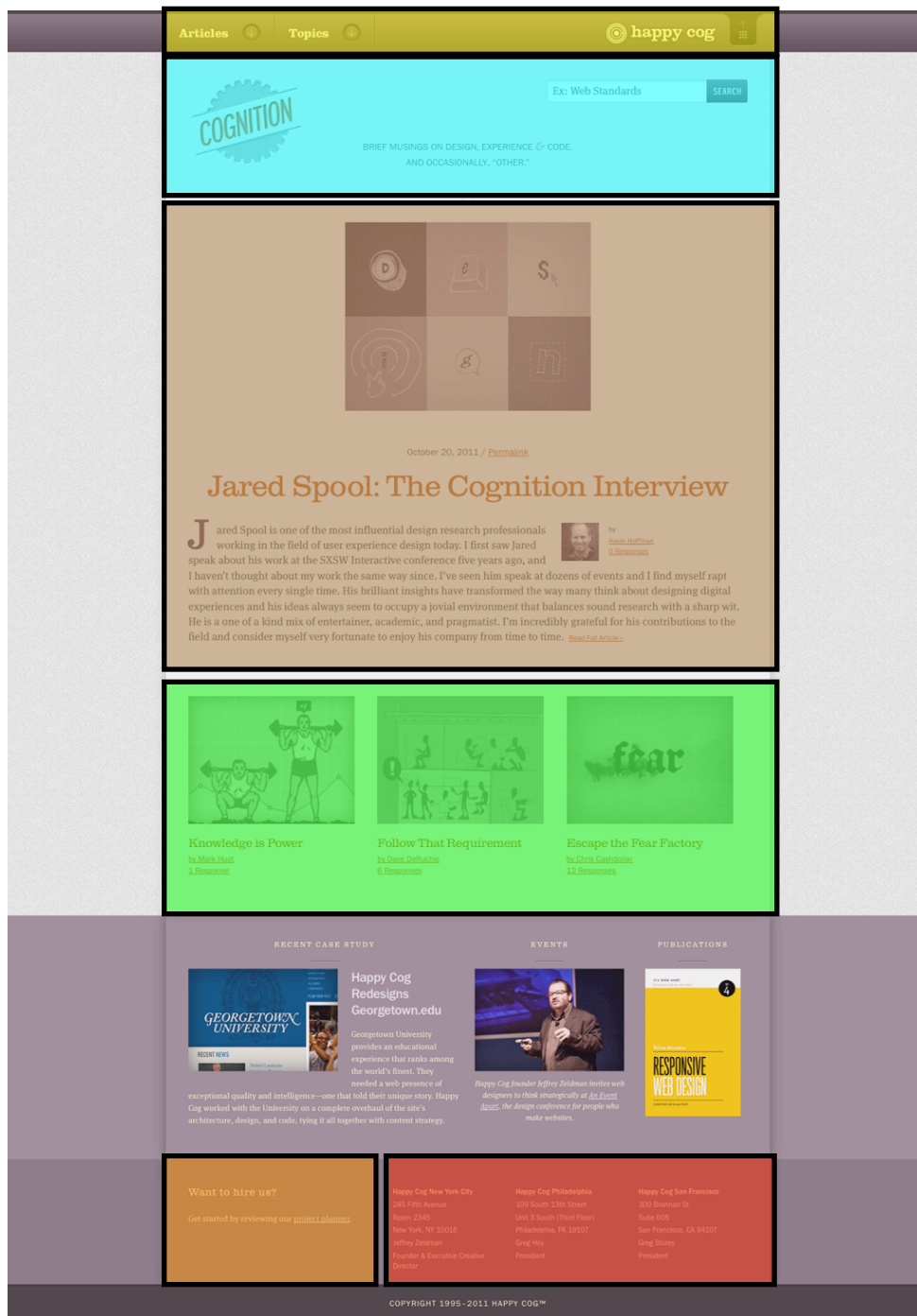


“desktop” version




“mobile” version

http://cognition.happycog.com/





# http://owltastic.com




## OWLTASTIC

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Design-y writing What & why Recent projects Old & new events Get in touch

Hi, I'm Meagan Fisher, a designer living in Brooklyn. I make websites, eat food & love owls.


### Owltastic around the web

This is just a quick update to brag about some stuff I've done lately. I've been putting off writing this post because self-promotion makes me icky, but I've had lots of caffeine this morning so I'm going to knock it out.



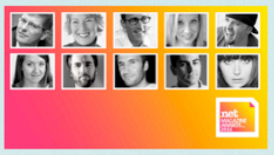
#### UNITED PIXELWORKERS TEE

When the savvy team of shirt makers at **United Pixelworkers** asked me to create a design for them, I was thrilled. I've long thought there needs to be an **official uniform for night owls**, and now we've got one. **Get yours** soon, because come October they'll be retired forever.



#### THE FLYOVER EFFECT PODCAST

The nice kids at **BitMethod** interviewed me for their nerdy podcast, **The Flyover Effect**. It was a lot of fun, even though I was over-caffinated and nervous and super awkward, which became the theme of the show. Having said that, you should **give it a listen**, if you want.



#### TOP 10 DESIGNERS OF 2011

Somehow I was nominated one of the **.net Awards Top 10 Designers of 2011**, which seems crazy to me. It's an honor to be counted among some of my favorite people, and as part of the nomination we all **did quick interviews** with the folks at .net.

You can also vote for web people at **the .net awards site**. I personally can't decide who to vote for, though I will say I've really loved **Trent's** work this year.

Posted Saturday, September 17th, 2011 • Tagged Site News • 1 Comment

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- Want
- Work

#### ARCHIVES


- September 2011
- August 2011
- July 2011
- May 2011
- April 2011
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- July 2010
- January 2010
- December 2009
- September 2009
- August 2009
- June 2009
- May 2009
- April 2009
- December 2008
- September 2008
- August 2008
- July 2008
- June 2008

#### A QUICK OVERVIEW

Raised in Florida, a new New Yorker via Boston. When not making websites, I try to write and speak about making websites.

Read more about me

#### WHAT I'M WORKING ON



Follow owl-tastic on dribbble

#### LATEST TWEET

Example texts: "I can't wait to see you for Thanksgiving. LOL, Dad." Or, "I'm so proud of you. LOL, Dad."

Follow owl-tastic on twitter

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though I was over-caffinated and nervous and super awkward, which became the theme of the show. Having said that, you should **give it a listen**, if you want.

One correction from the podcast: I said I gave a talk on mobile design before the iPhone came out. This is incorrect, since I gave the talk in 2008. Please forgive the error, I am unpracticed at talking and thinking at the same time.



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Established Nottingham 2003


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MR. SIMON COLLISON

A.K.A COLLY

Bottled for your pleasure


POTTED AUTOBIOGRAPHY



**H**ello. I'm a freelance designer, speaker, and author based in Nottingham, England. I've written a few **books**, and I do plenty of **presentations** and workshops, plus occasional **interviews**. [Read More →](#)

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**839**—Don't settle  
**838**—My recommended reading  
**837**—One minute with...  
**836**—Conferences and expectations  
**835**—Gimme Bar opens its doors

Mr. Collison is currently

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INSTAGRAM PHOTOS



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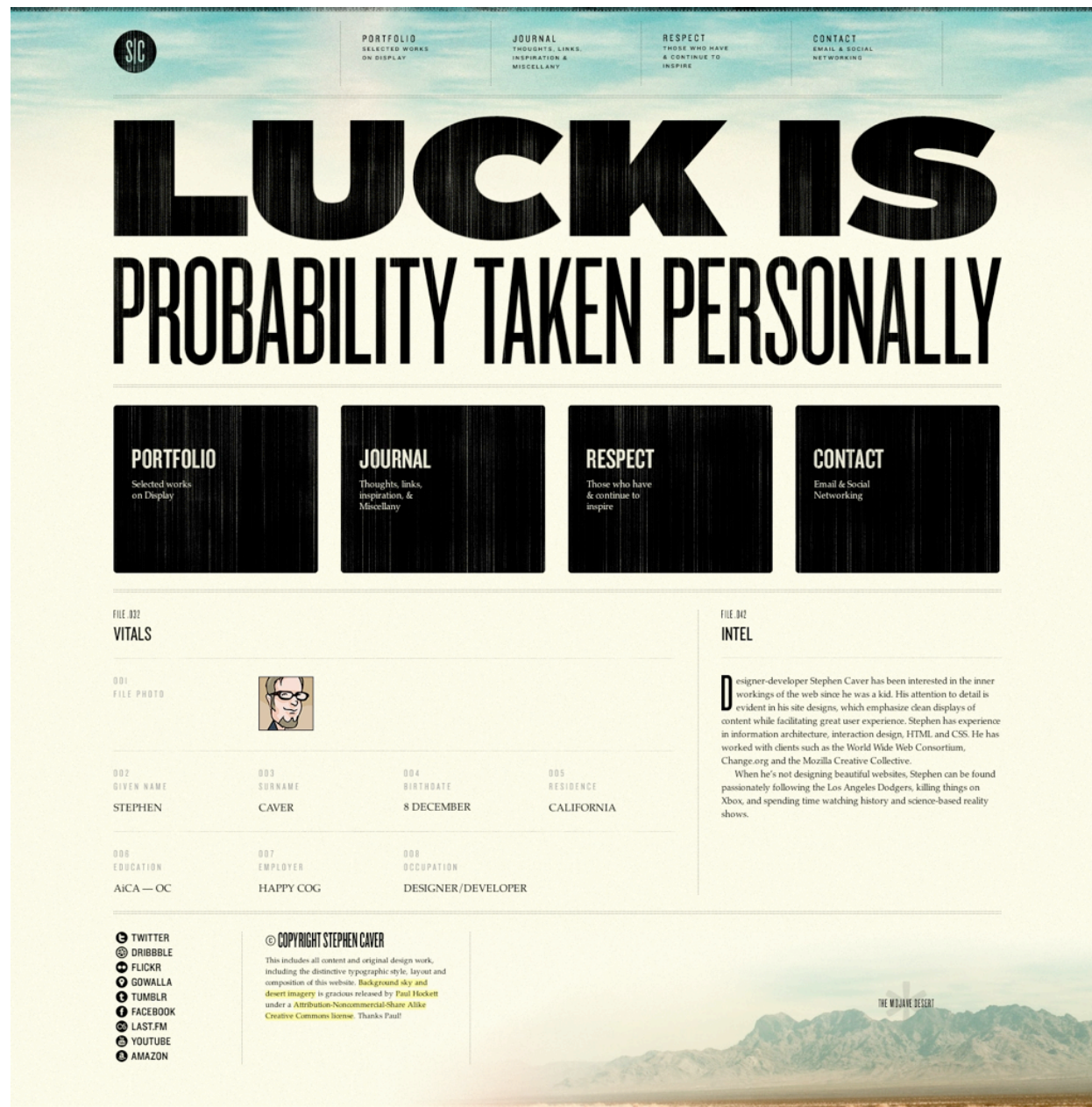
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Engineered in Nottingham, scaffolded by [ExpressionEngine](#), steam-pumped by [United](#) & kept alive with tea and roll-ups.



<http://stephencaver.com>





same content\*,  
same hierarchy

adapting to context

\* the first two sites above omit some content under small widths

# what about mobile\*?

\* given the context of the talk, “mobile” means “native Android”

# device variety



Experia Pro 3.7"



Flyer 7"



Sony Tablet S 9.4"

Archos 2.8"



Galaxy Note 5.2"



Galaxy Tab 8.9"



# device orientation

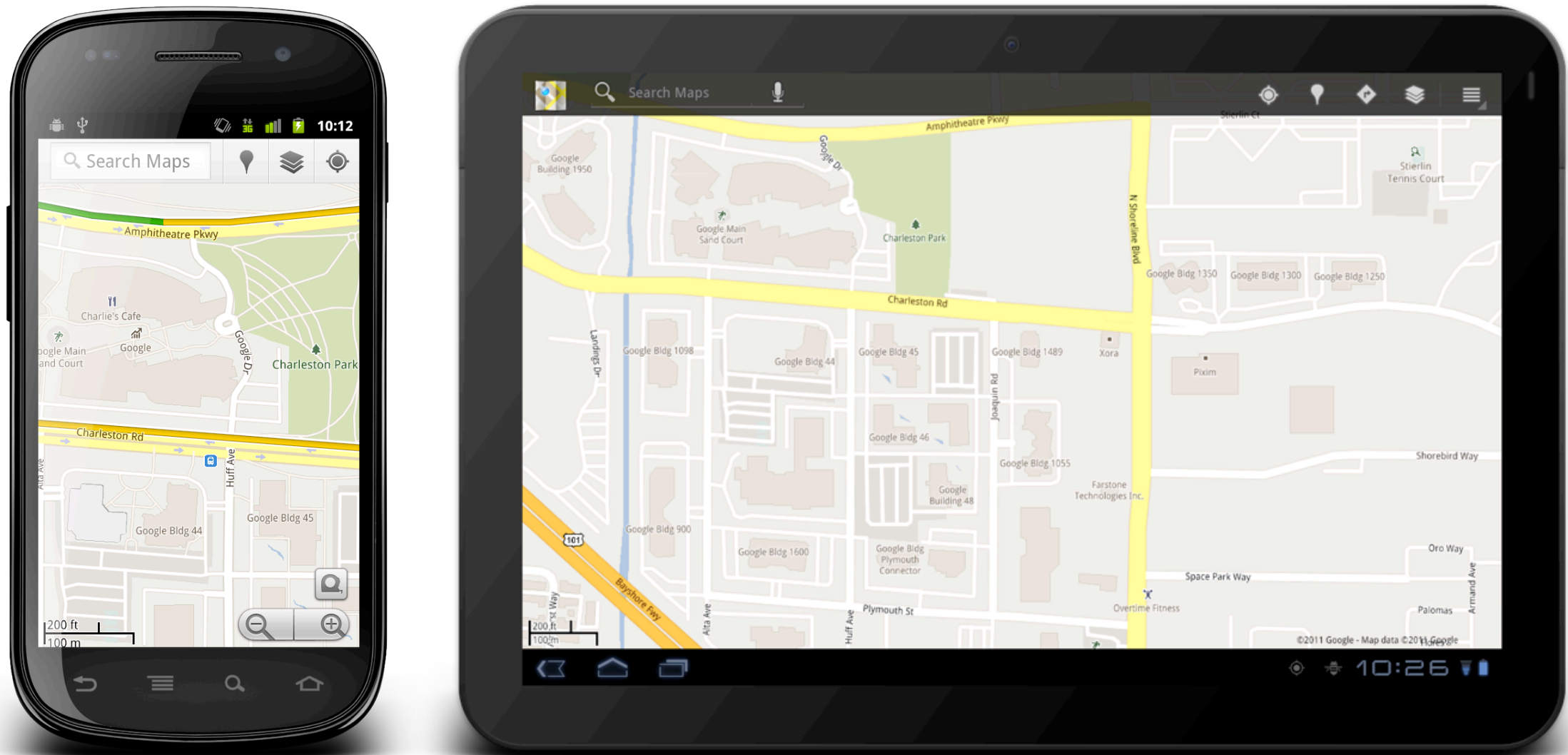


1024\*600



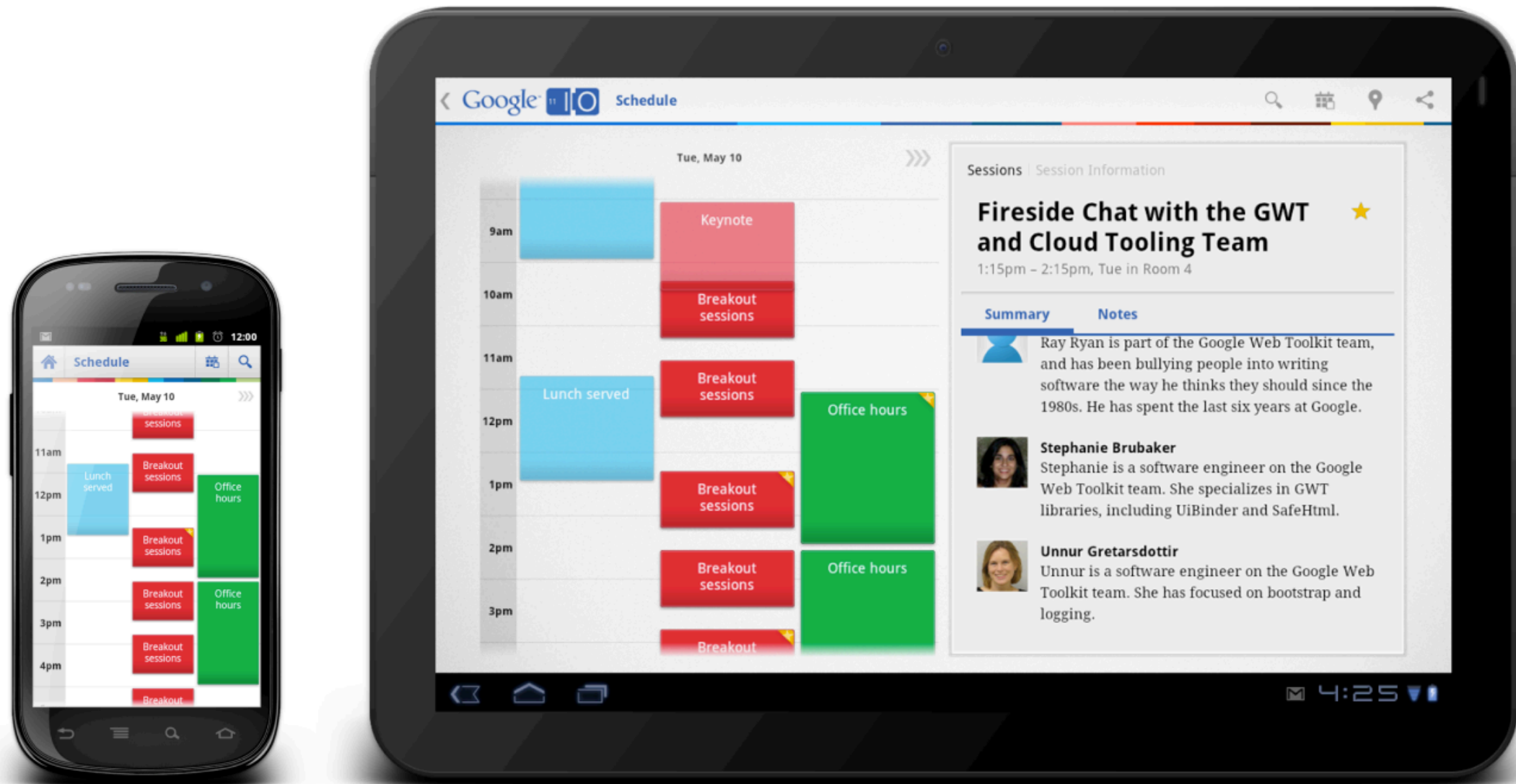
600\*1024

# canvas-based apps



“show more” of the infinite canvas

# text-based hierarchies

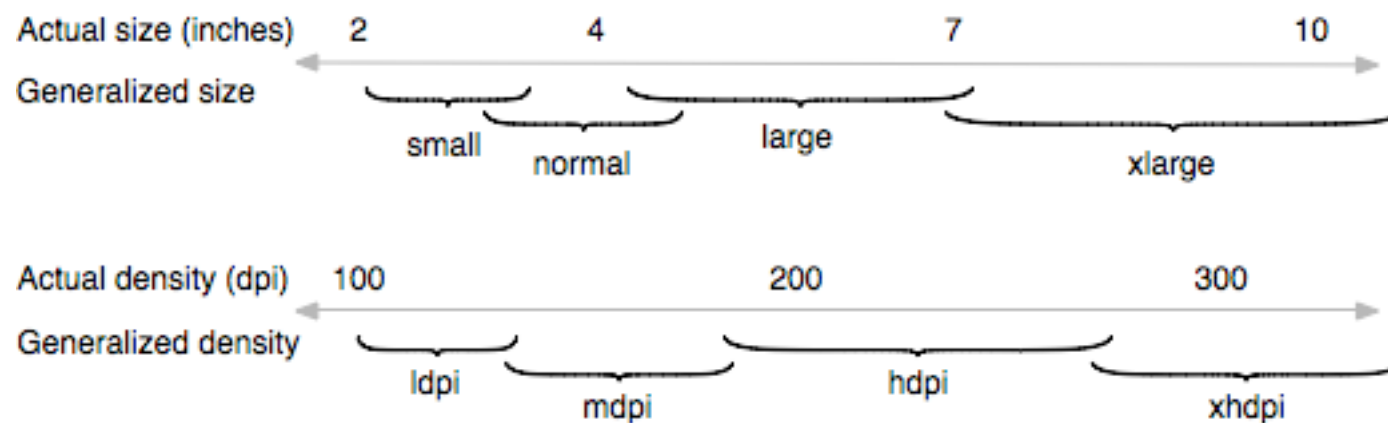


reflow or combine

# Android resource system

<http://developer.android.com/guide/topics/resources/providing-resources.html>

physical size of the device  
display density



# ~ CSS3 media queries

<http://www.w3.org/TR/css3-mediaqueries/>

- *width, height, device-width, device-height*
- *orientation, aspect-ratio*
- *resolution*



# main difference

*width, height, device-width, device-height*

CSS pixels ~ dip

ems ~ sp

# new resource selectors in Android 3.2

[http://developer.android.com/guide/practices/screens\\_support.html](http://developer.android.com/guide/practices/screens_support.html)

- *width dp*. For example, *-w600p*
- *height dp*. For example, *-h600dp*
- *smallest width dp\**. For example, *-sw600dp*

\* “survives” device orientation

granularity  
of control

start from content

no more “tablet-  
optimized” layouts

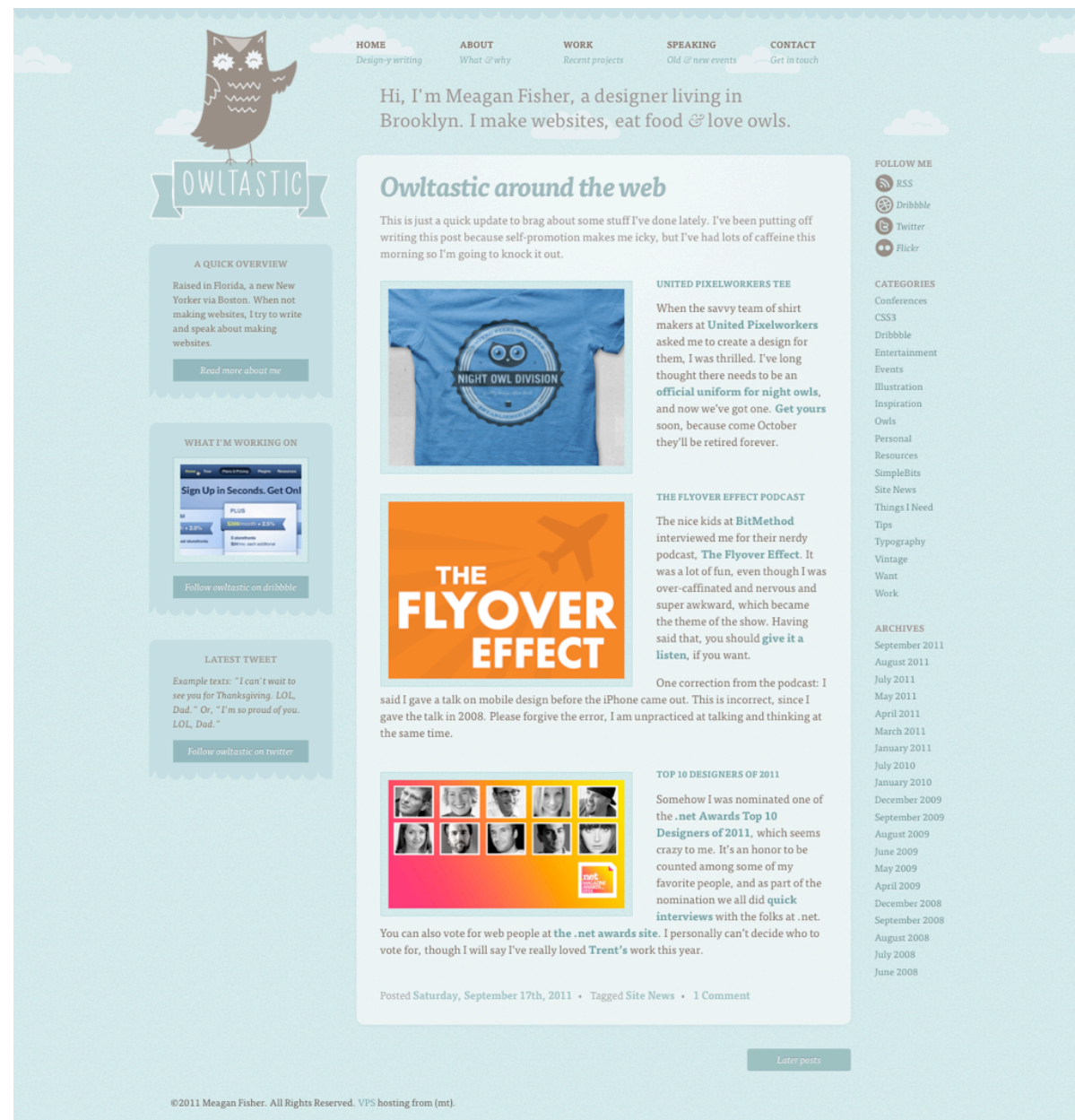
what separates a tablet  
from a phone\*?

\*“I know it when i see it” is not an answer supported by aapt

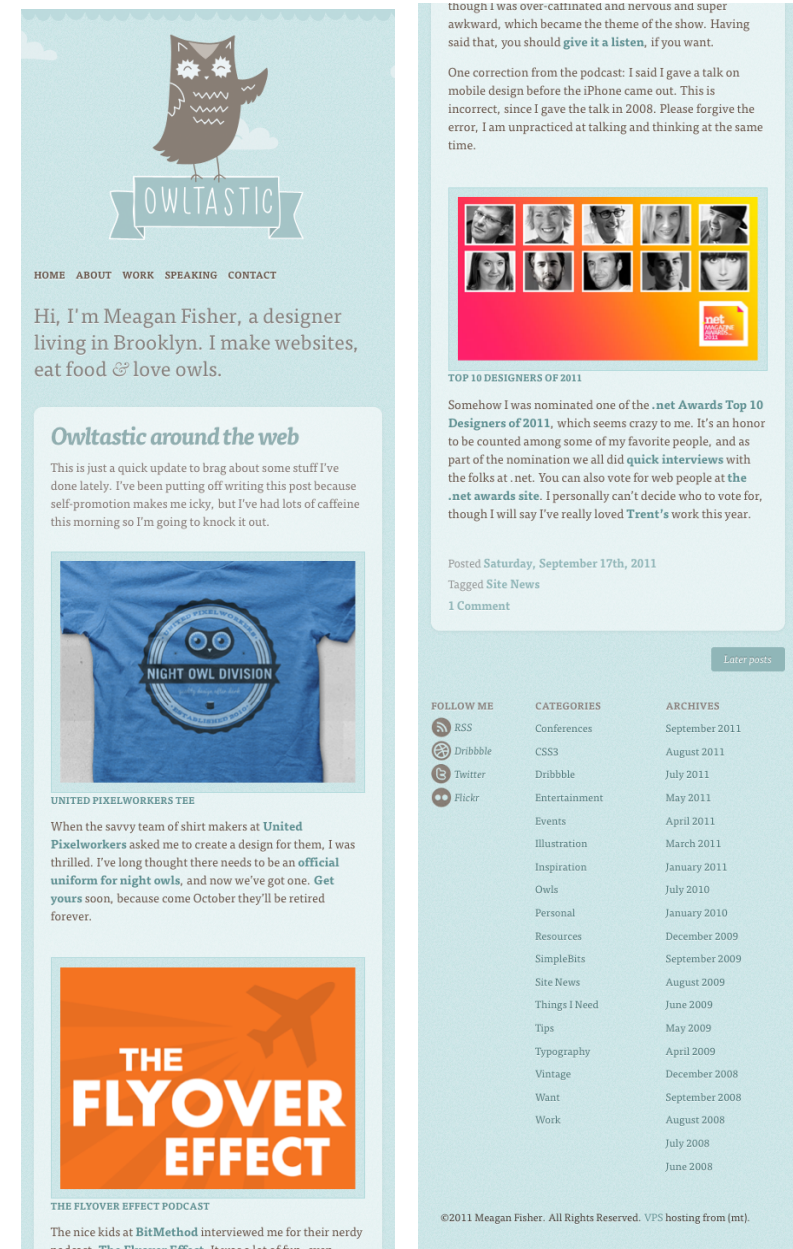
same content,  
same hierarchy

adapting to context

# switching point



“desktop” version

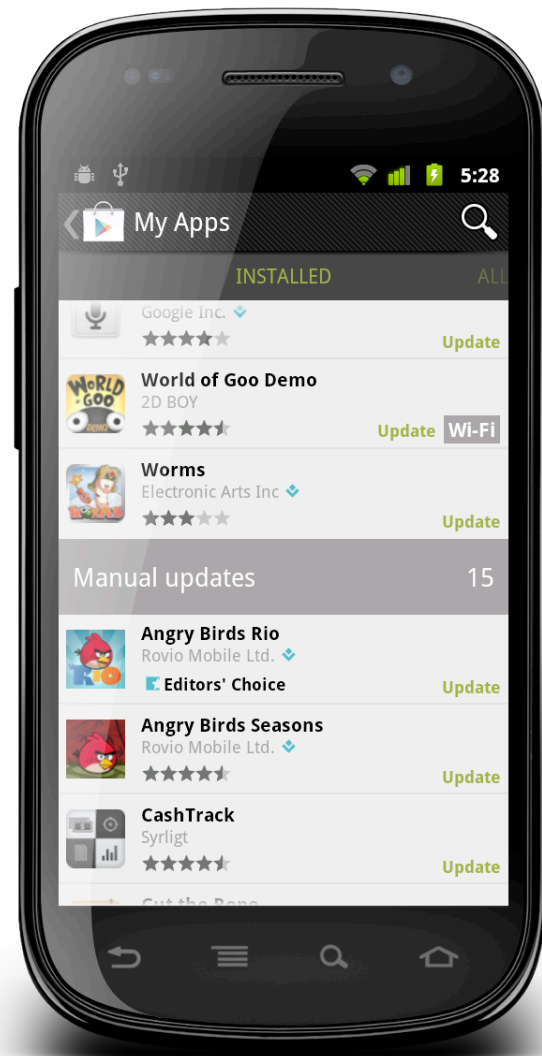


“mobile” version

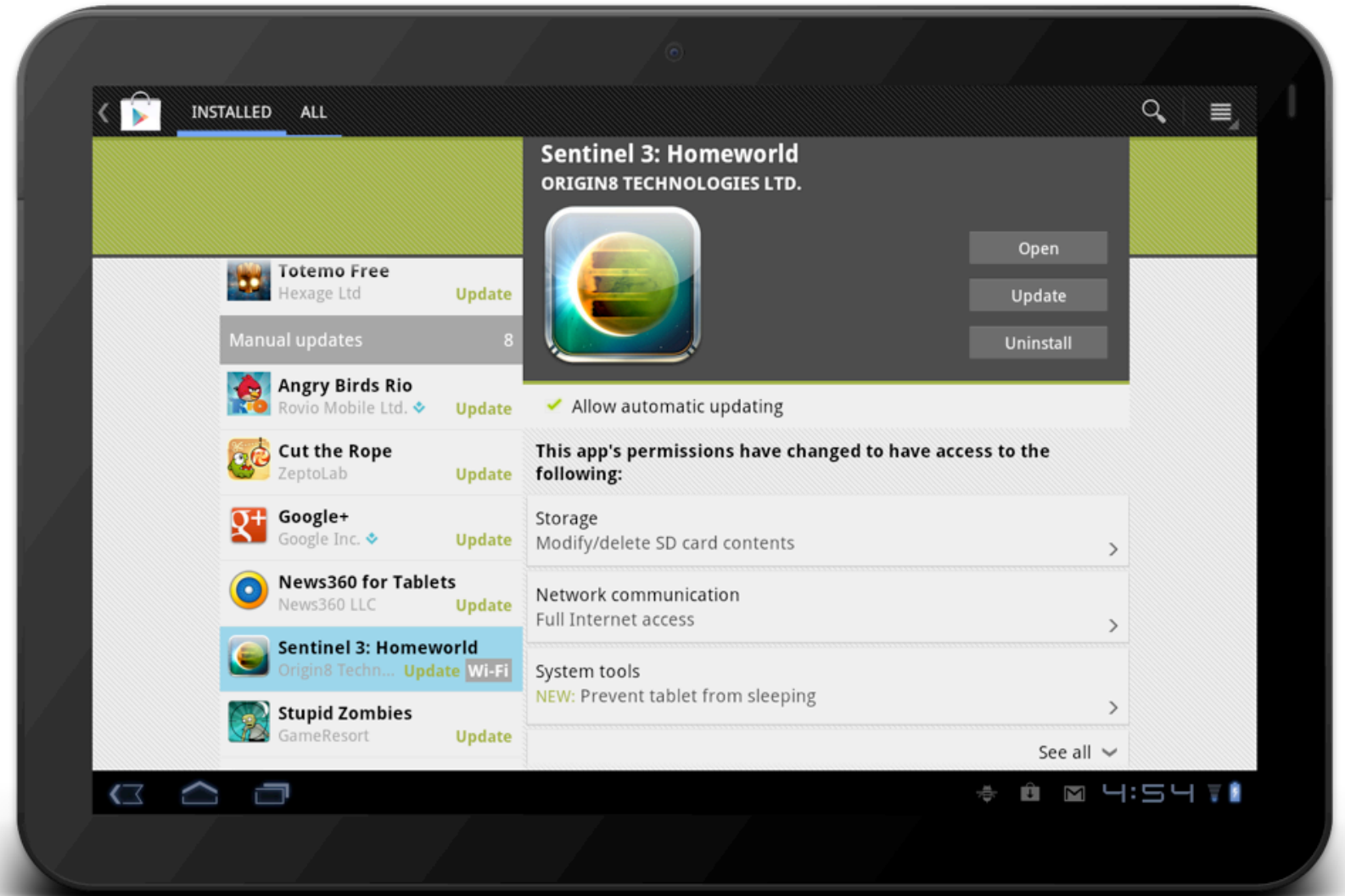
@media screen and (max-width: 480px)



# switching point



“phone” version



“tablet” version

# switching point



how much space do i need for a two-column layout?

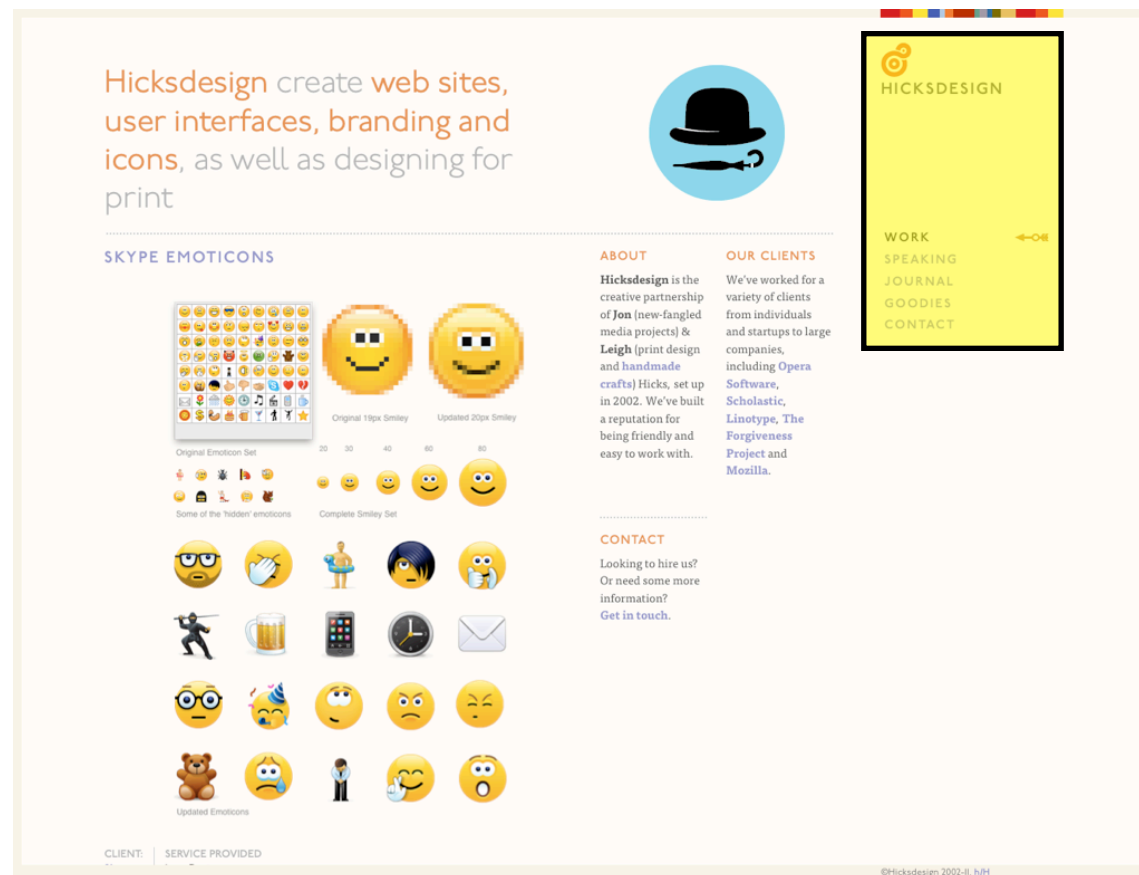
# switching point

*layout/myapps.xml*

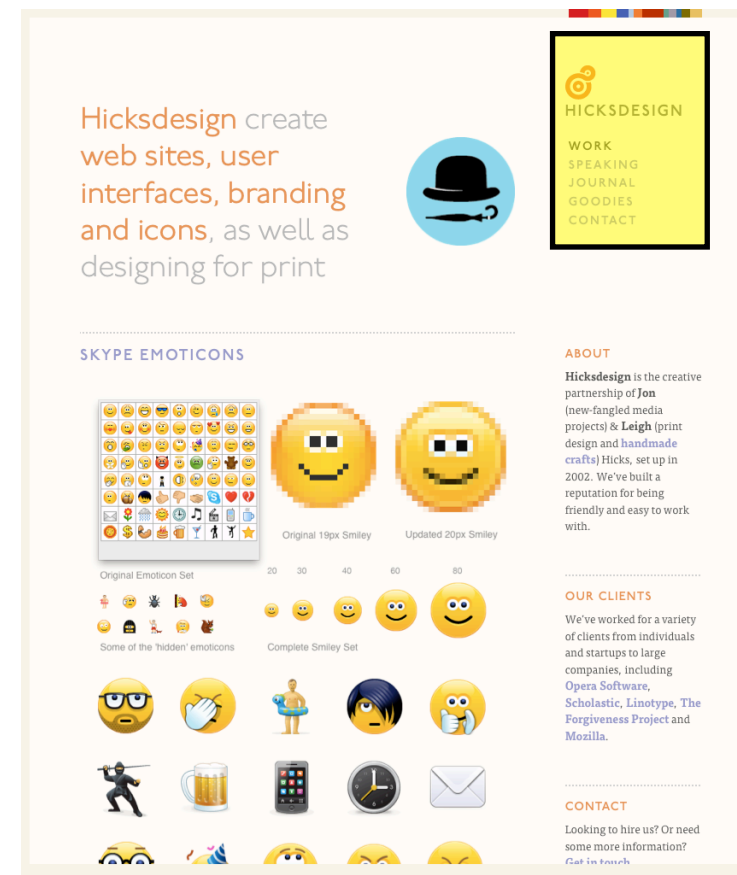
*layout-**w800dp**/myapps.xml*

# multiple switching points

<http://hicksdesign.co.uk>



4



2



1

# multiple switching points

*layout/myapps.xml*

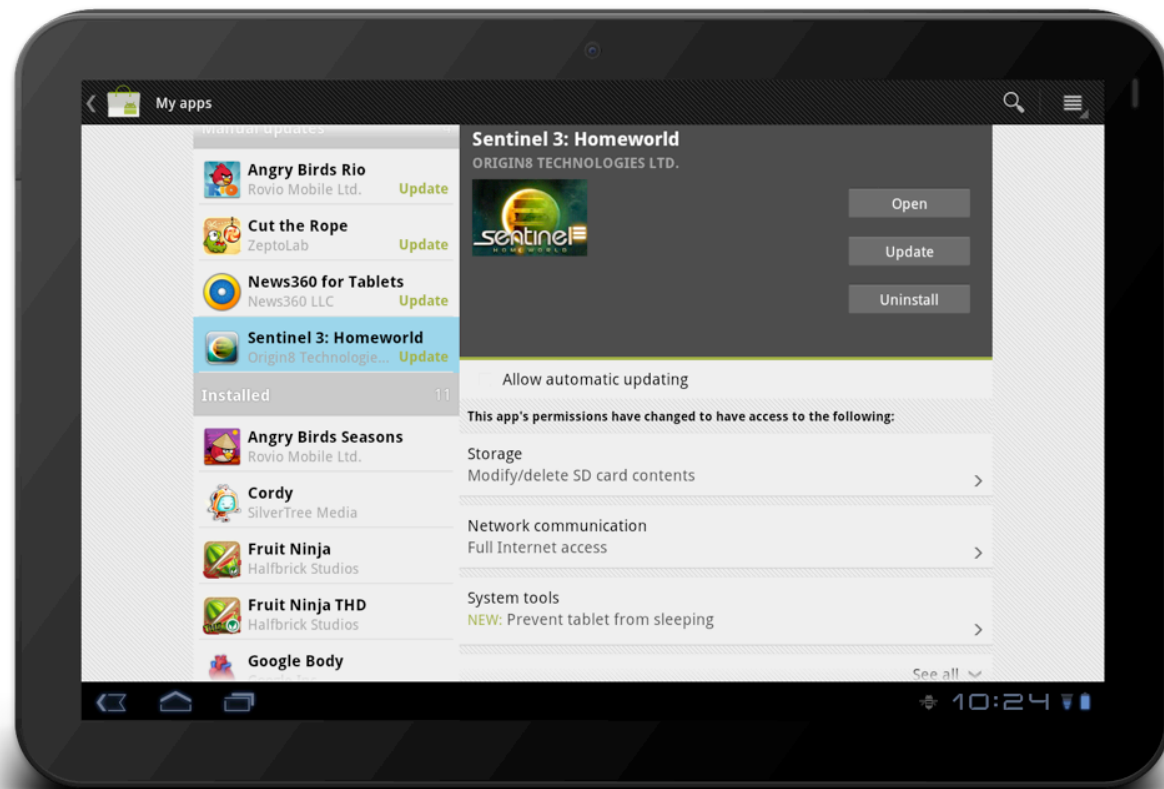
*layout-**w600dp**/myapps.xml*

*layout-**w1000dp\***/myapps.xml*

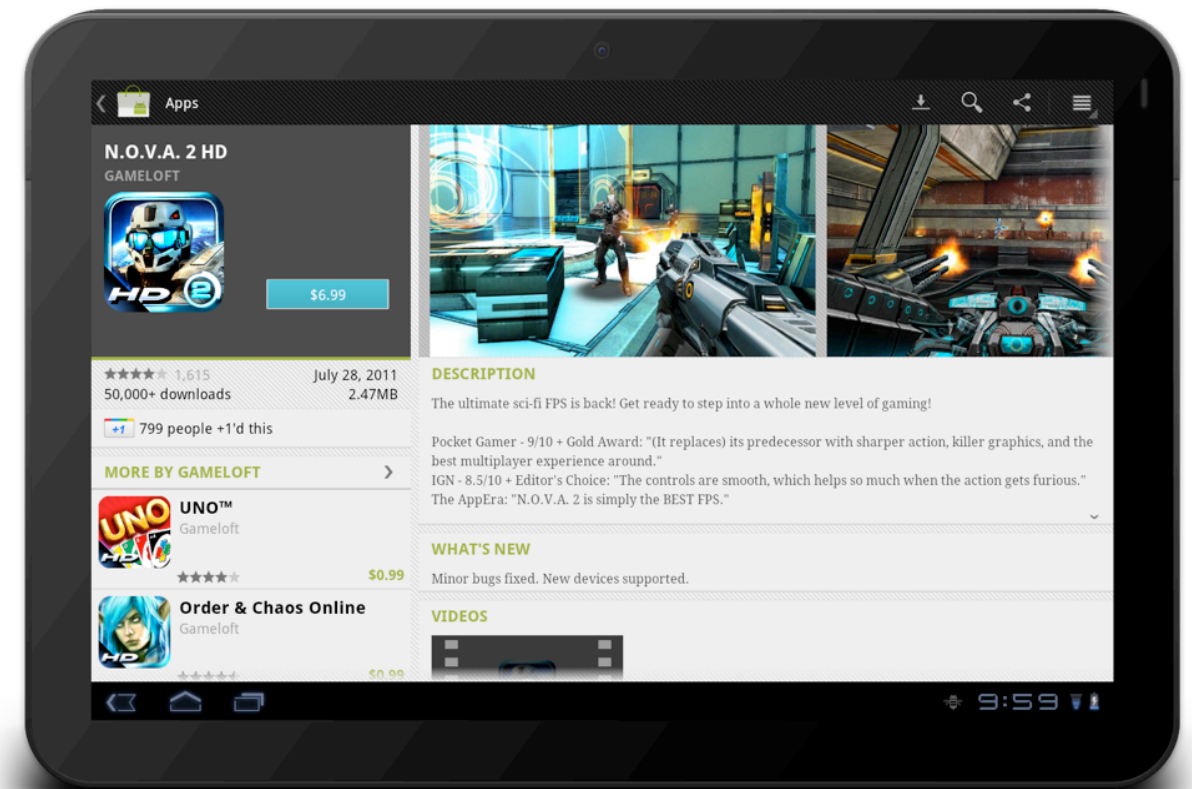
\* onwards to -w10000dp on the Android JumboTron closest to you



# different switching points



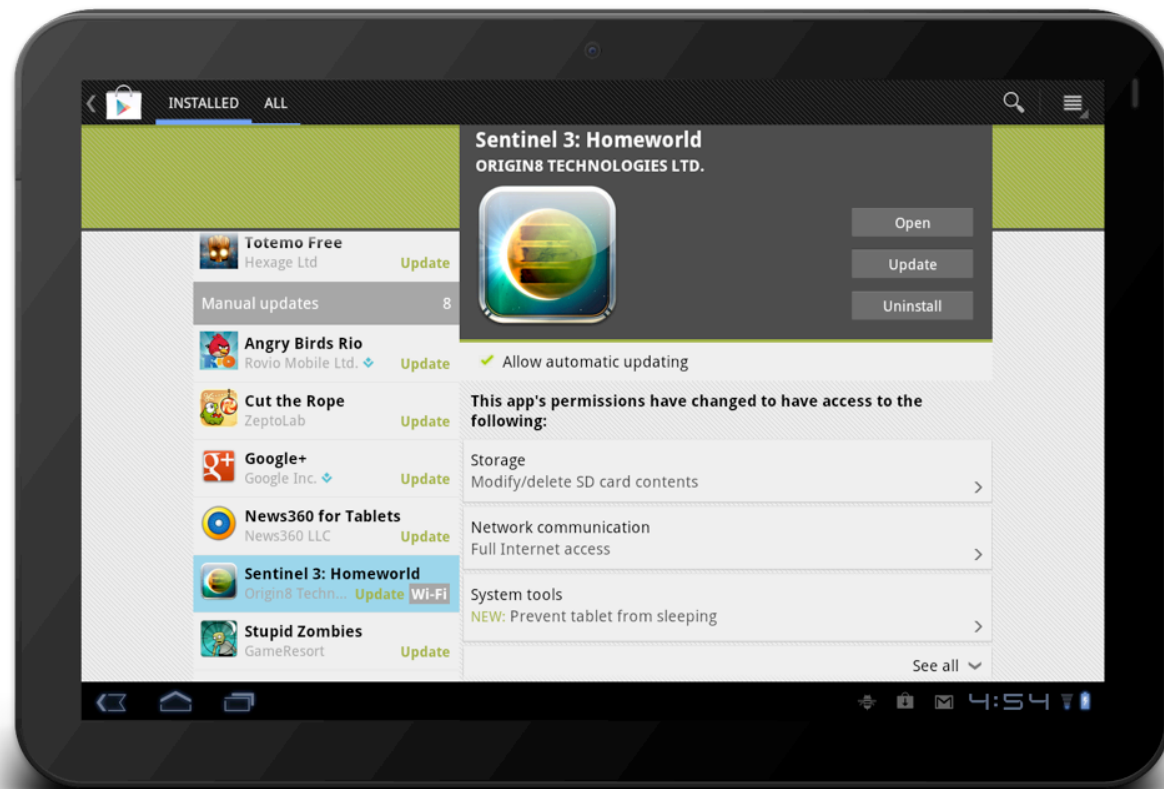
*layout-w800dp/myapps.xml*



*layout-w1000dp/details.xml*

\* From older releases of Android Market

# unified switching points



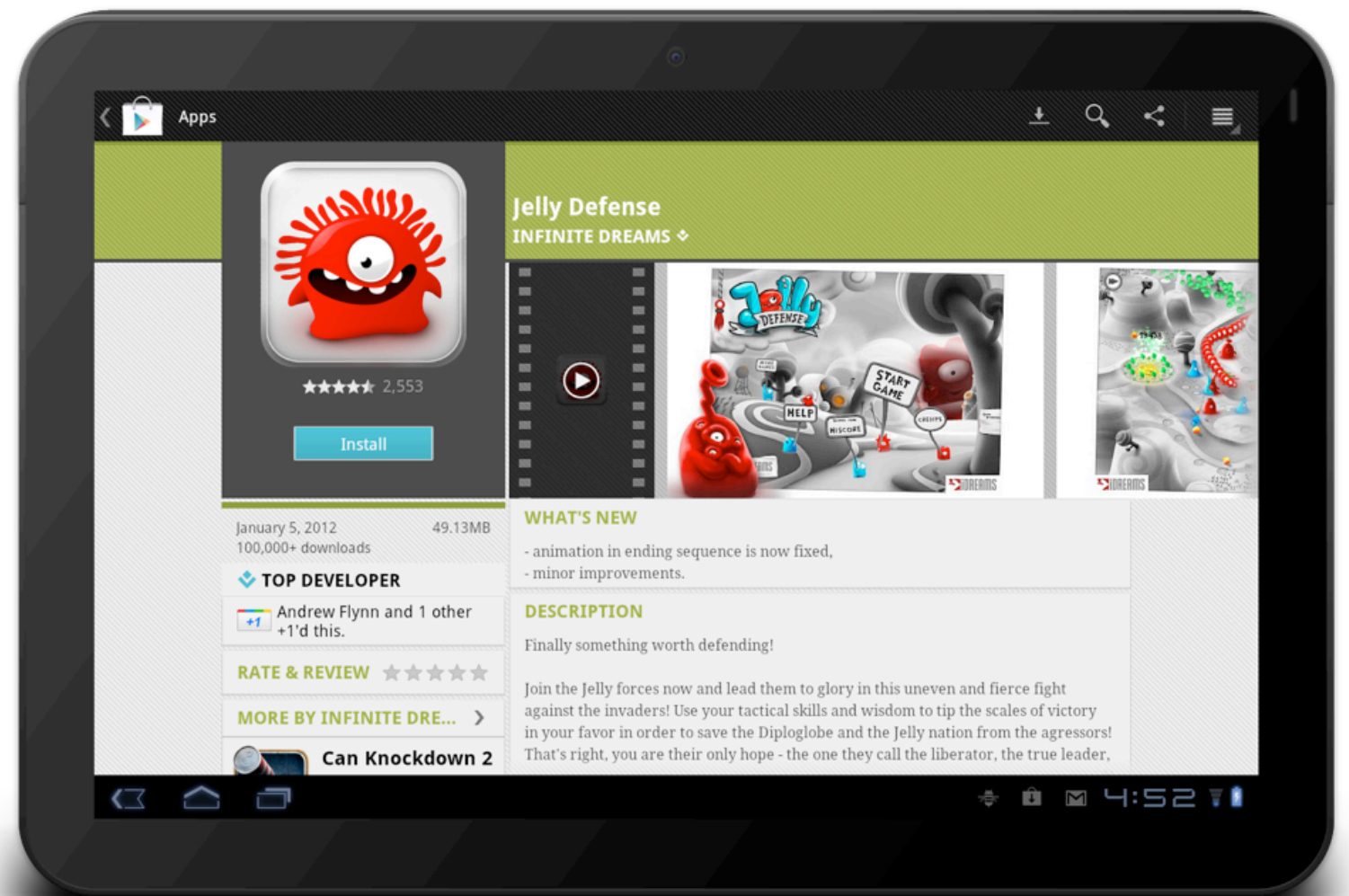
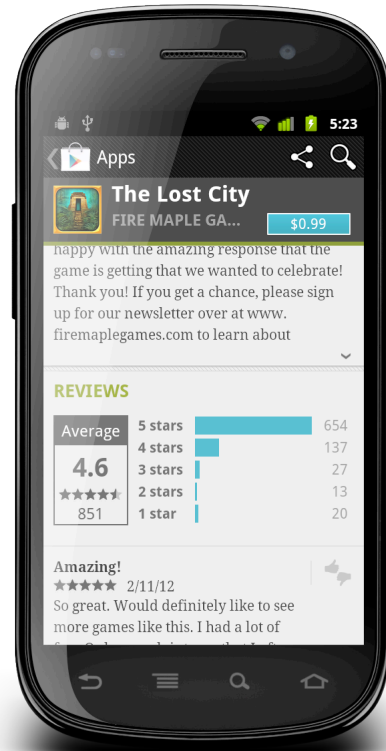
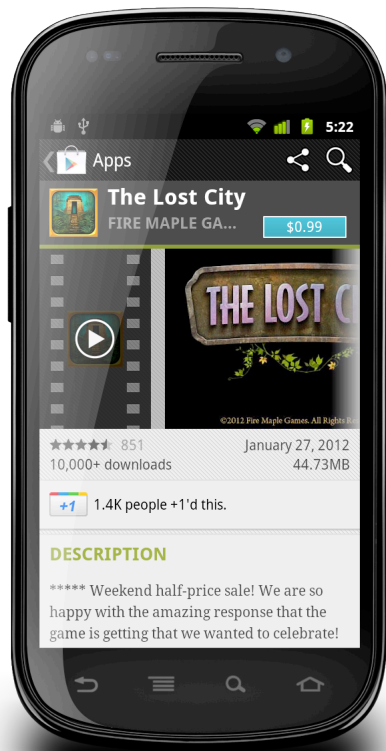
*layout-w800dp/myapps.xml*



*layout-w800dp/details.xml*

\* Unified in Google Play 3.5

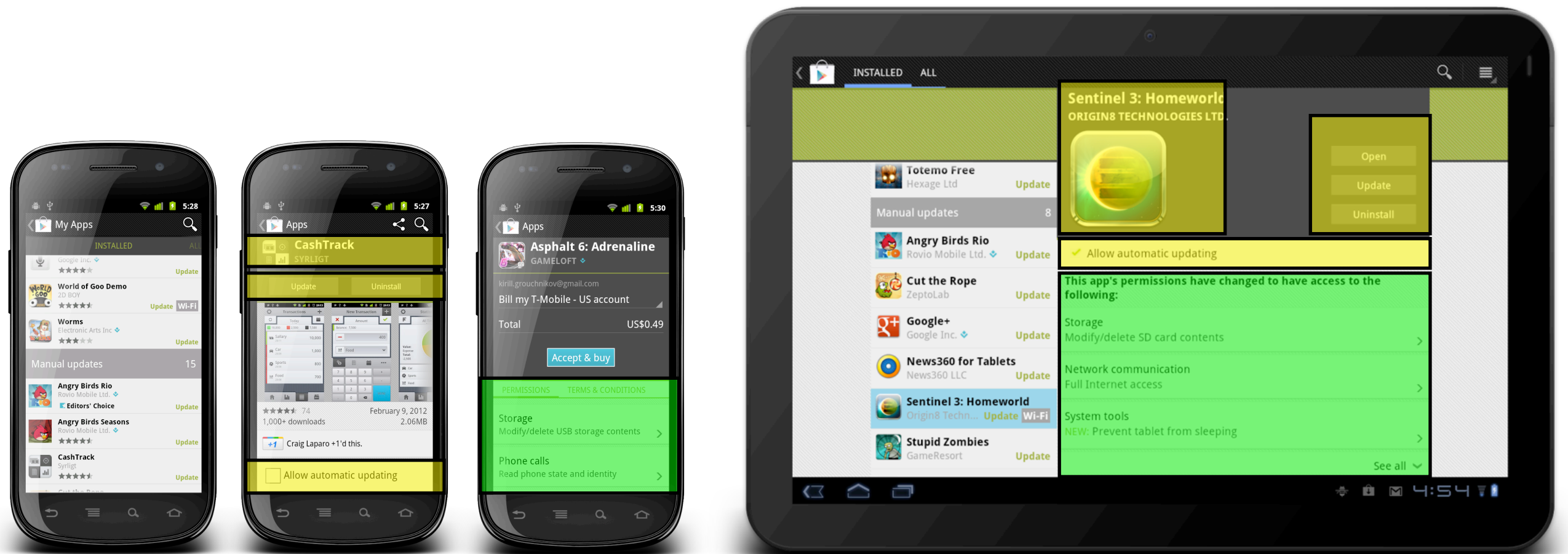
# switching point



how to preserve content hierarchy?  
where do content blocks go?  
what is locked and what scrolls?

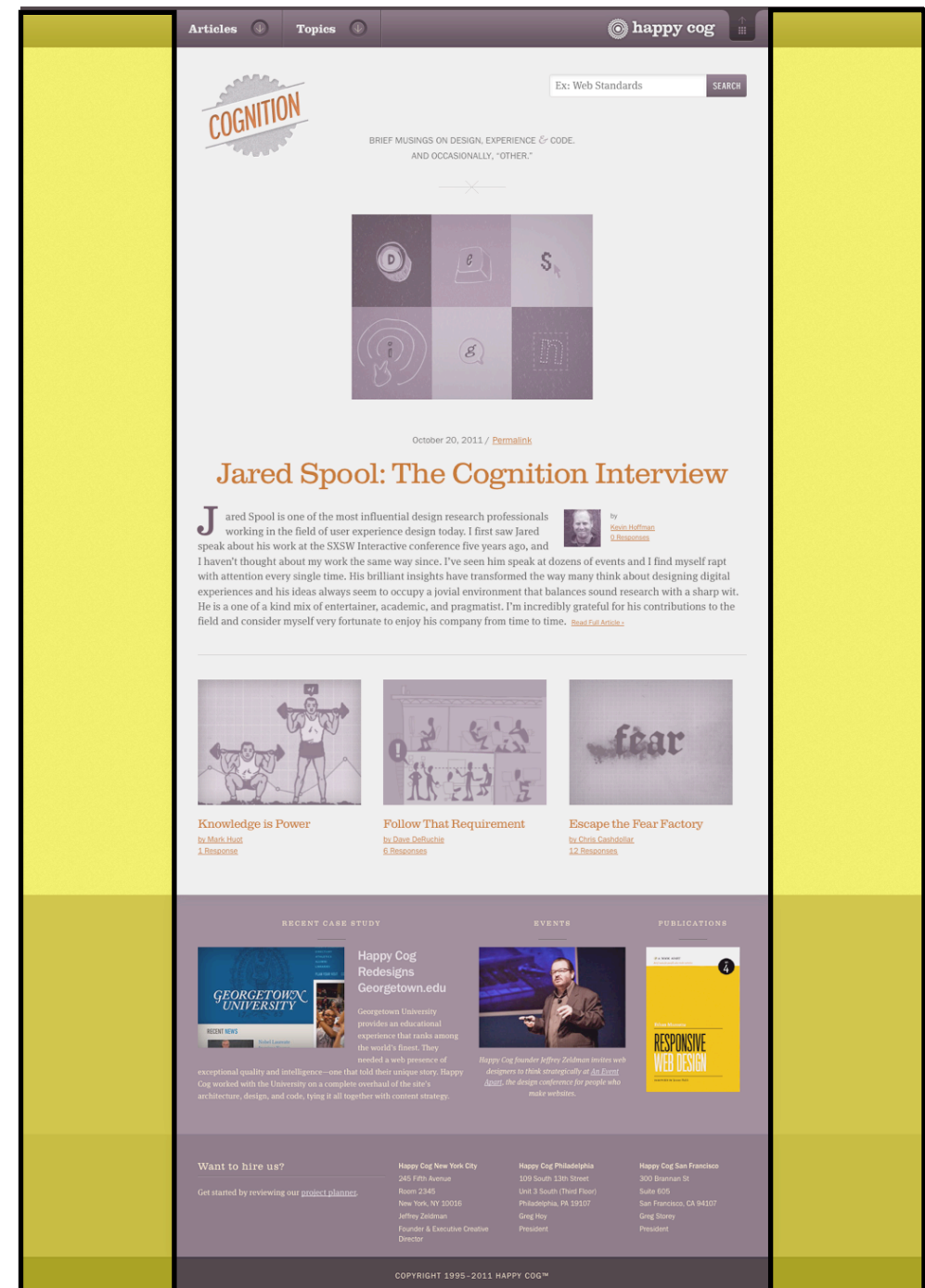
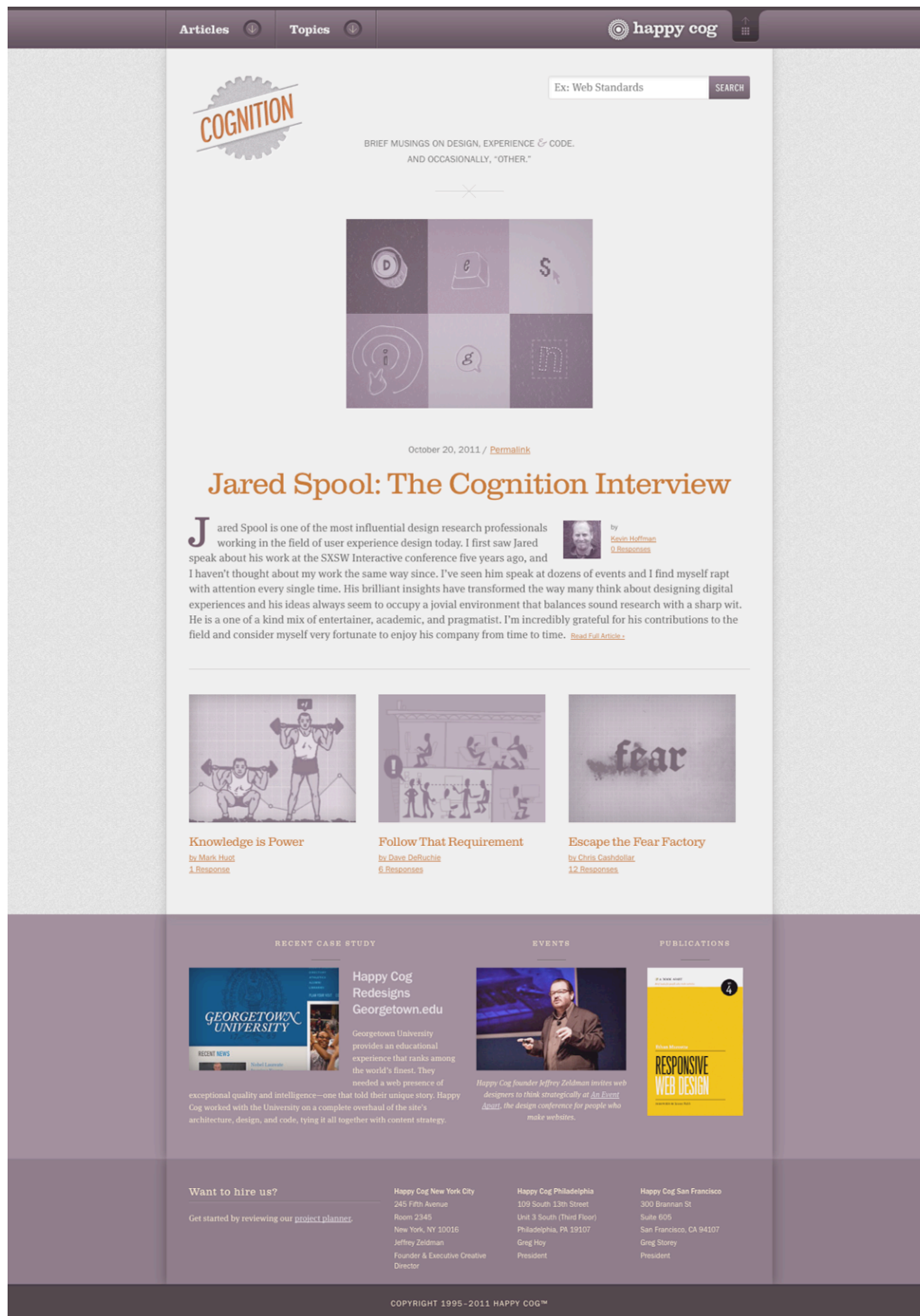


# switching point



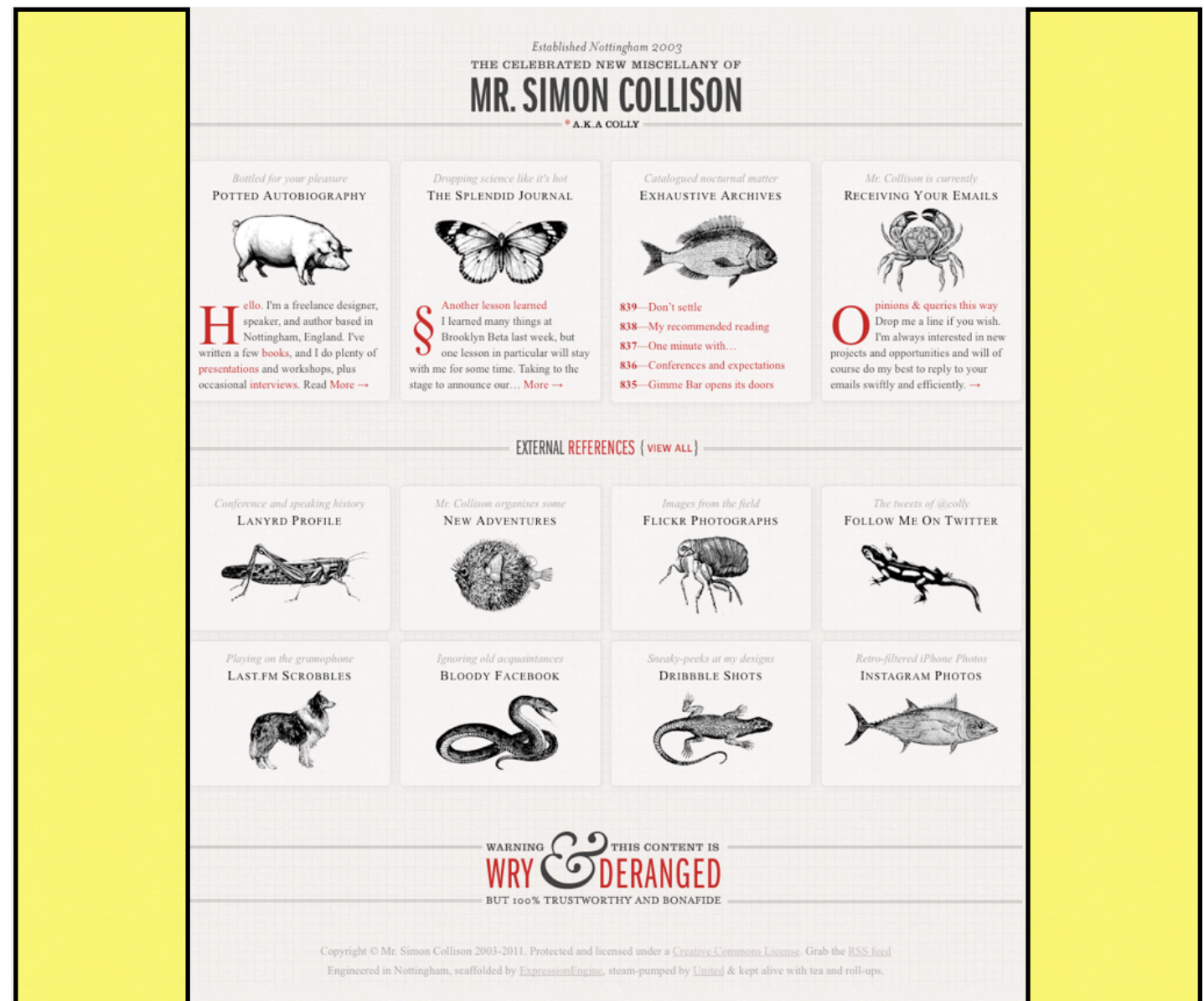
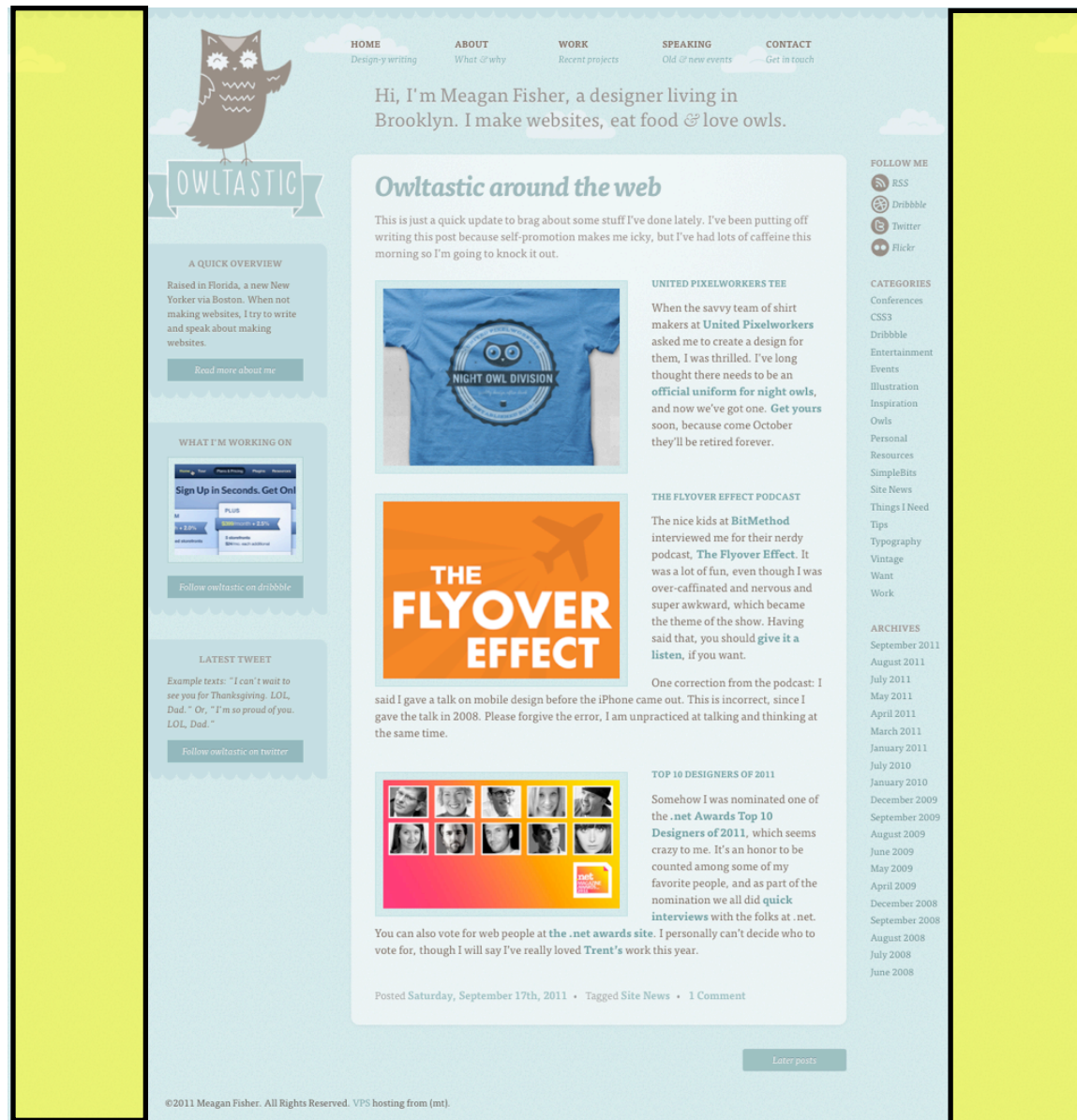
why show permissions?

# margin point



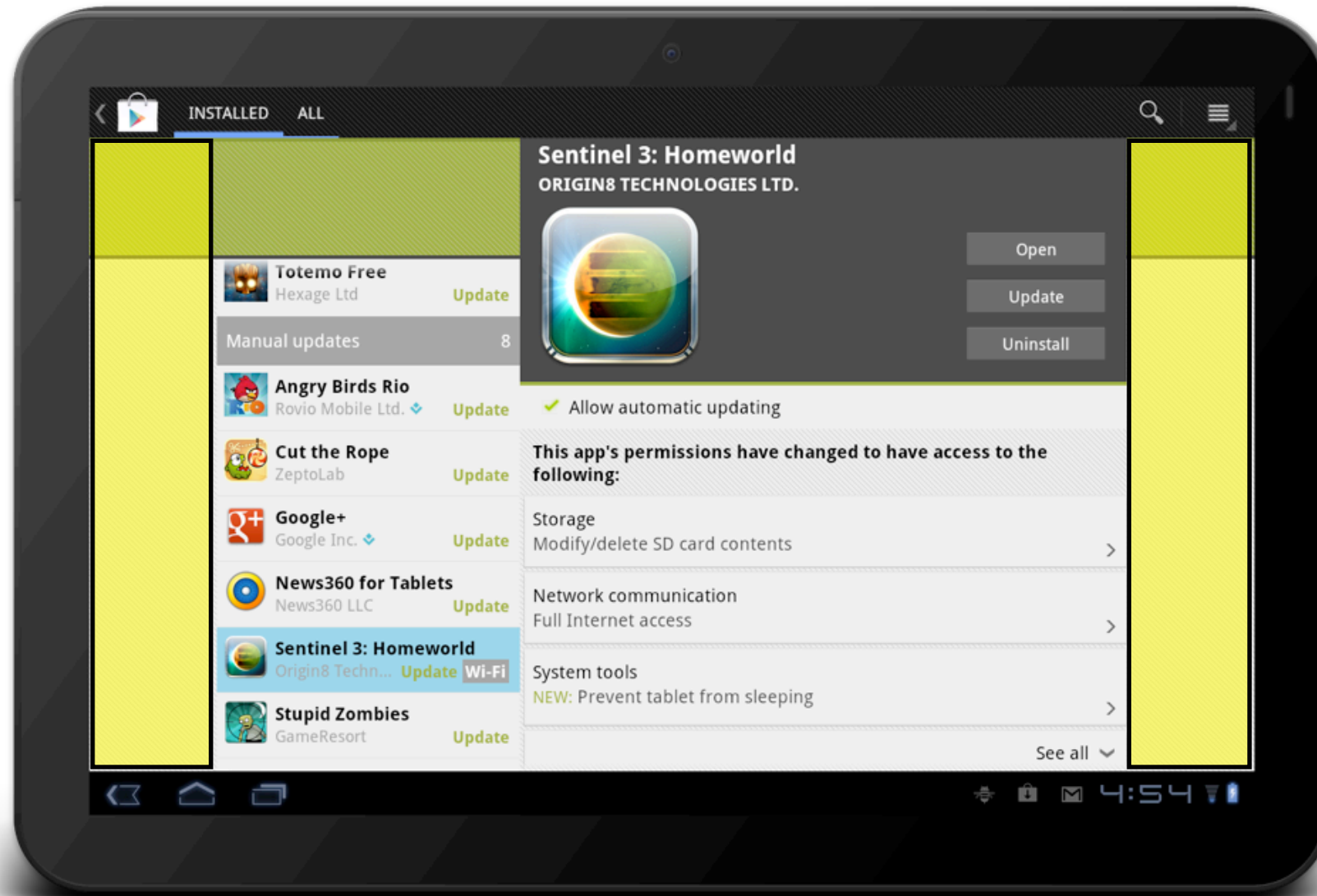


# margin point



what is the optimal “consuming” experience?

# margin point



what is the optimal “consuming” experience?

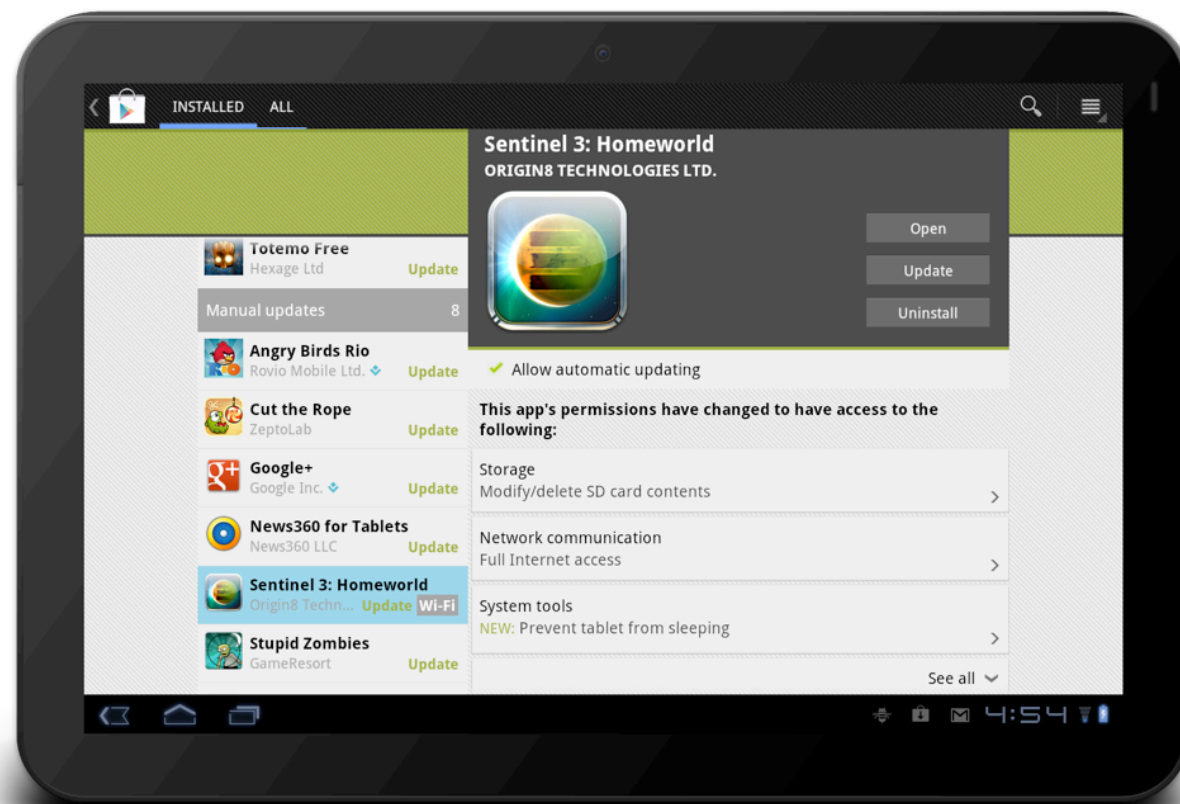


# margin point

Xoom:  $1280 \times 800dp$

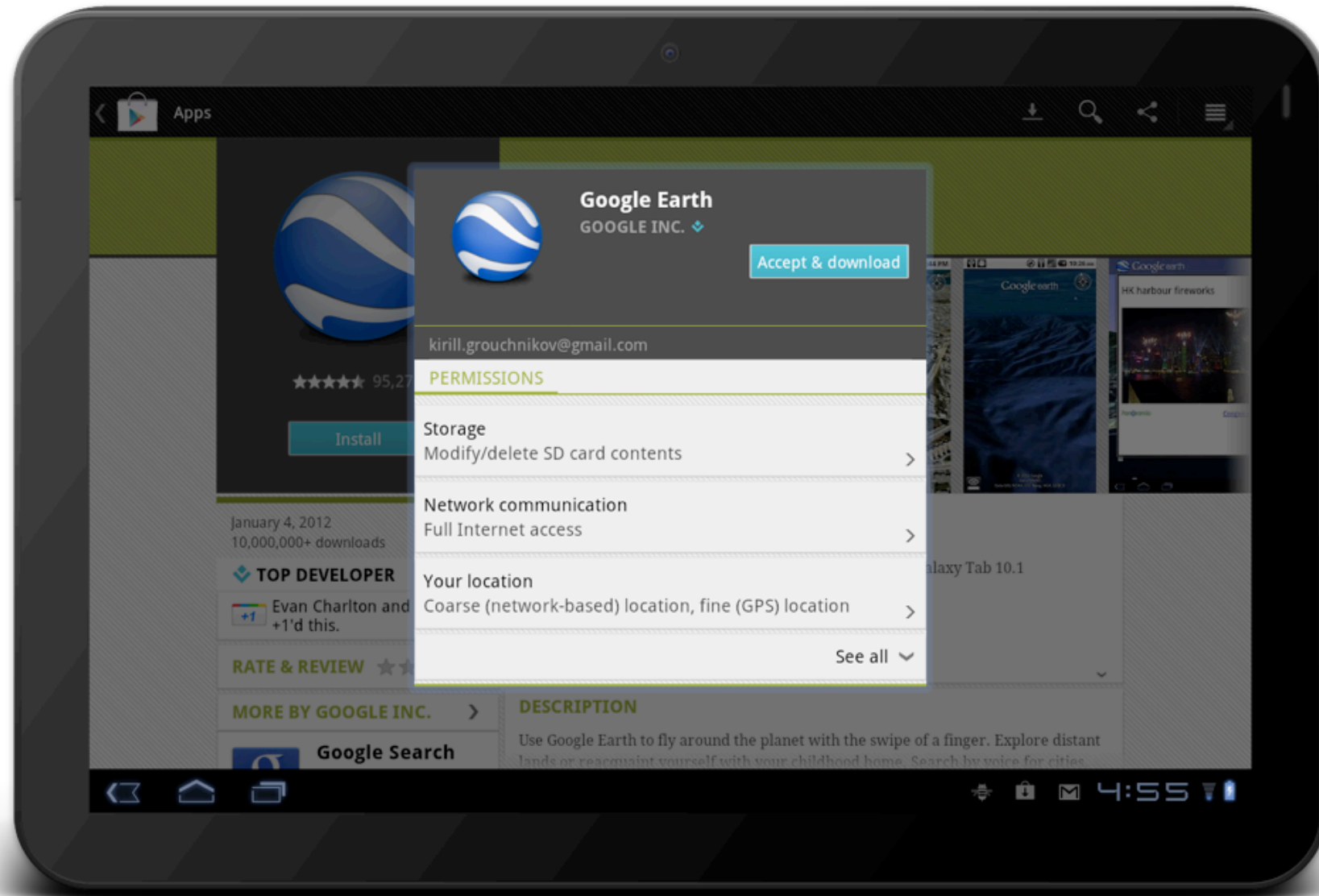
switch point =  $800dp$

margin point =  $1000dp$



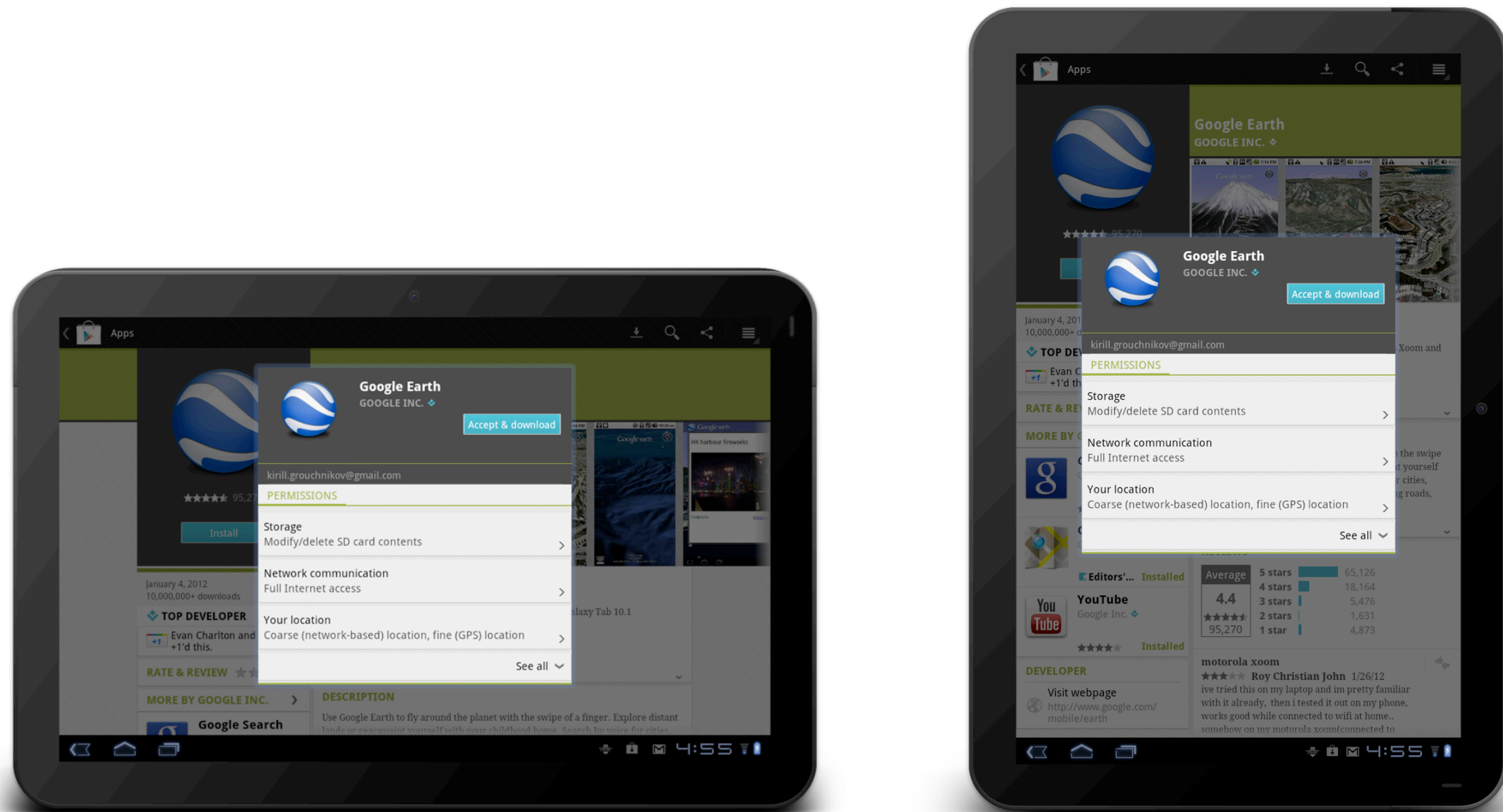
does everything go  
into  $-wNNNdp$ ?

# purchase dialog



sparse content - use *DialogWhenLarge*

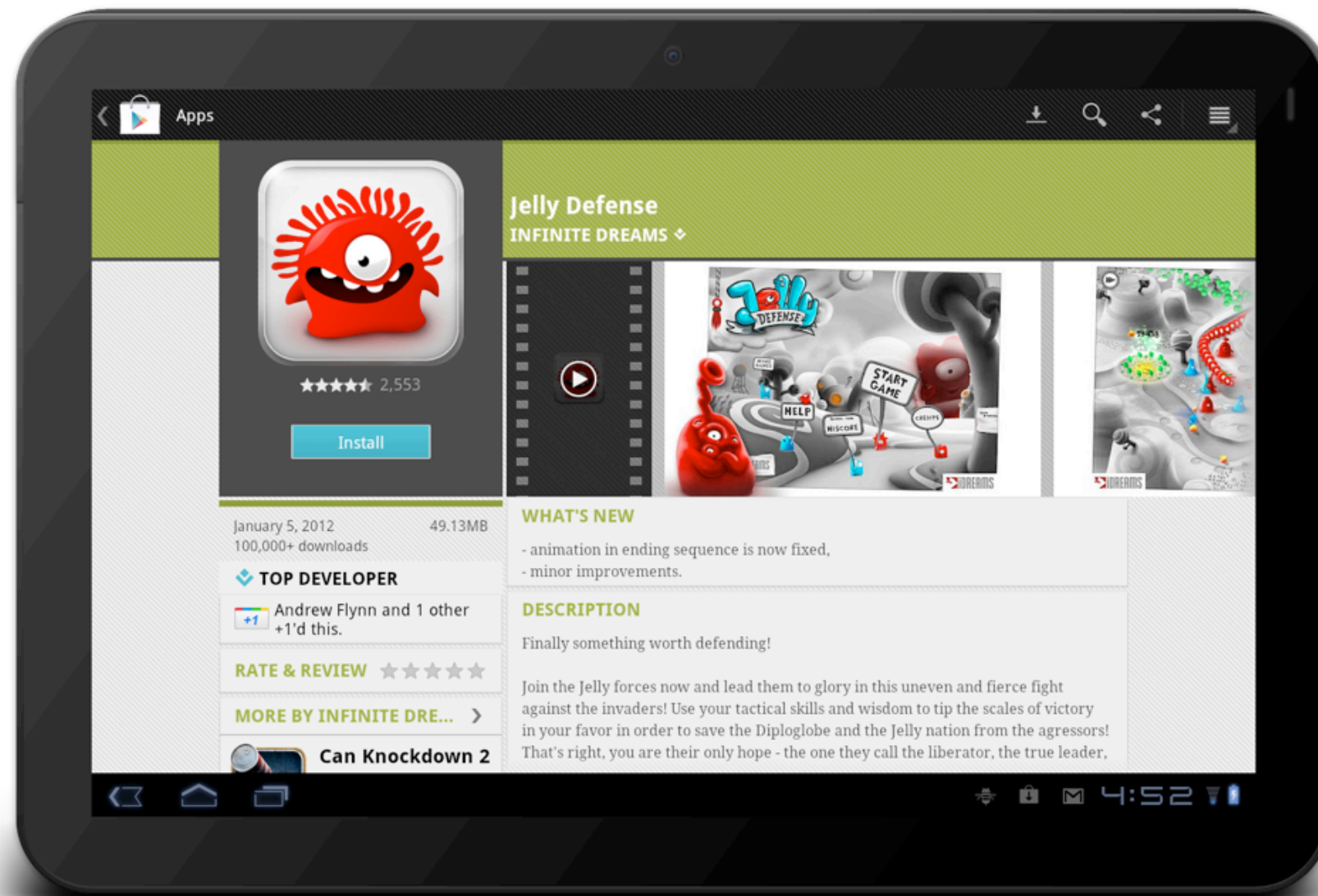
# purchase dialog



theme defined in *values-sw600dp*

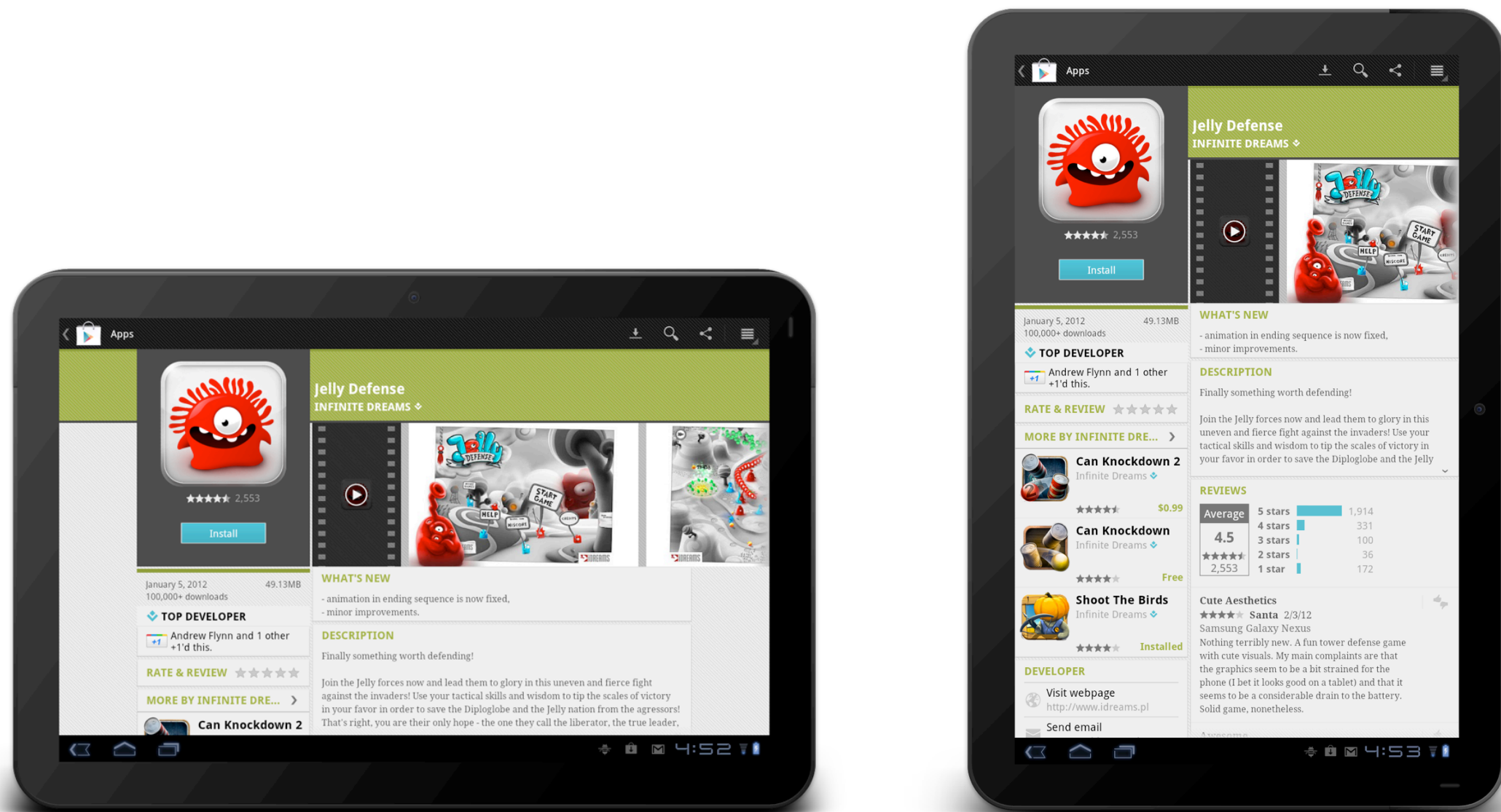


# font sizes



same *sp* values look too small  
we use larger values on bigger screens

# font sizes



sizes defined in *values-sw600dp*

# recap



Experia Pro 3.7"



Flyer 7"



Sony Tablet S 9.4"

---

Archos 2.8"



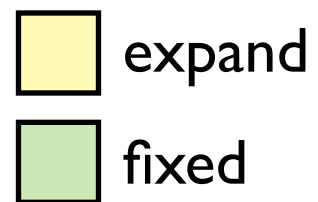
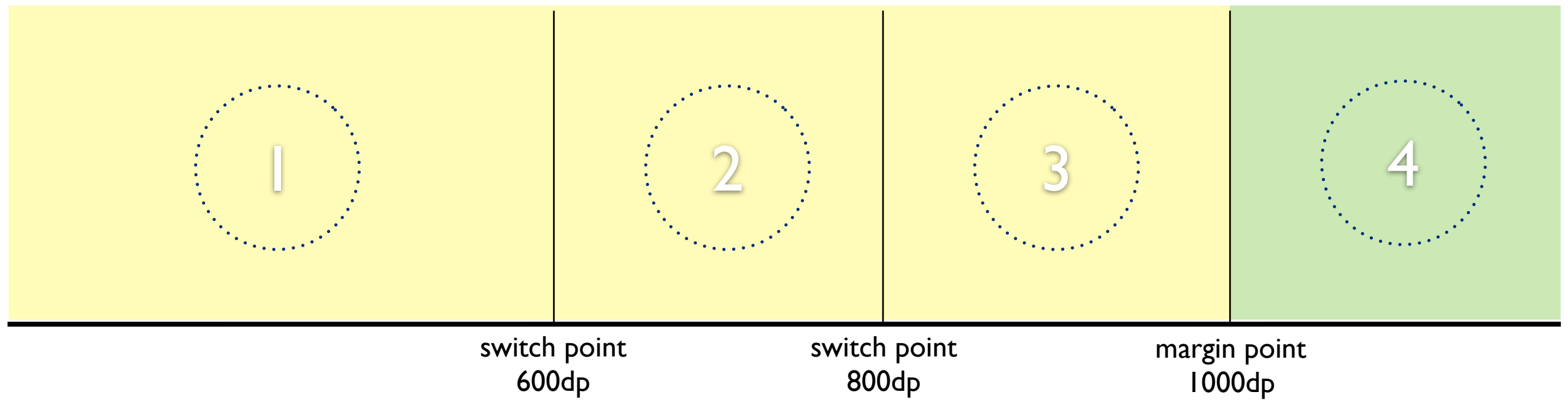
Galaxy Note 5.2"



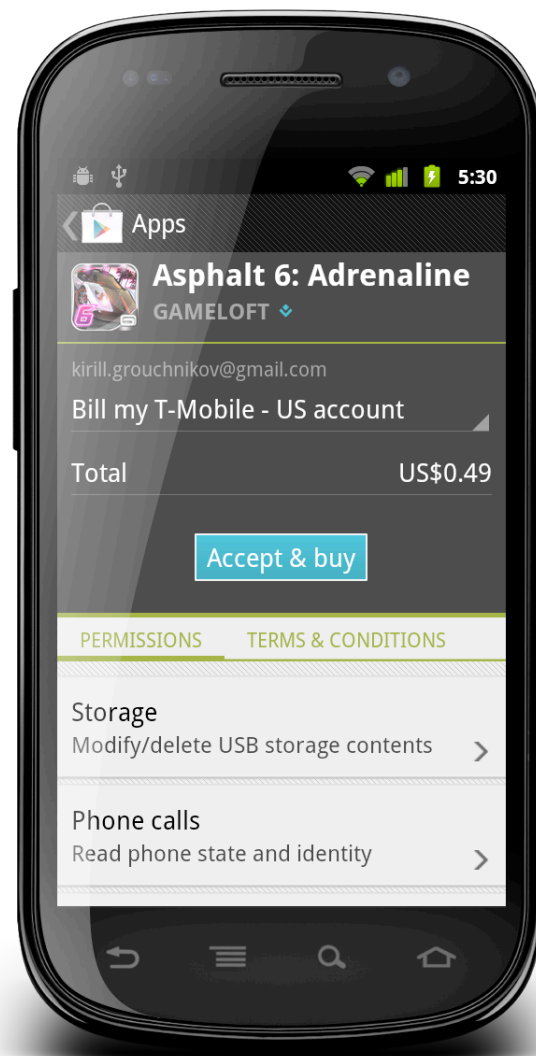
Galaxy Tab 8.9"



# recap

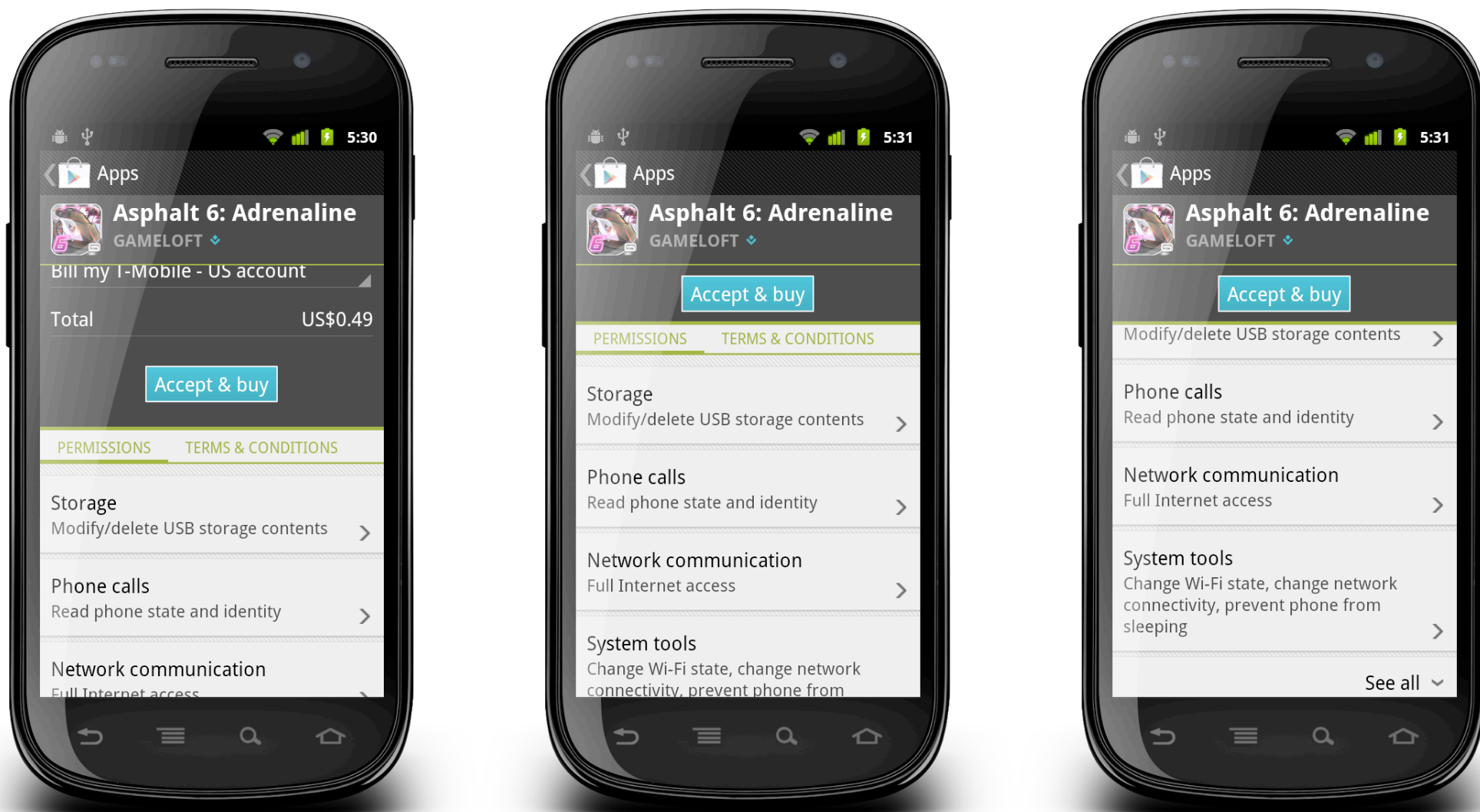


# synchronized scrolling



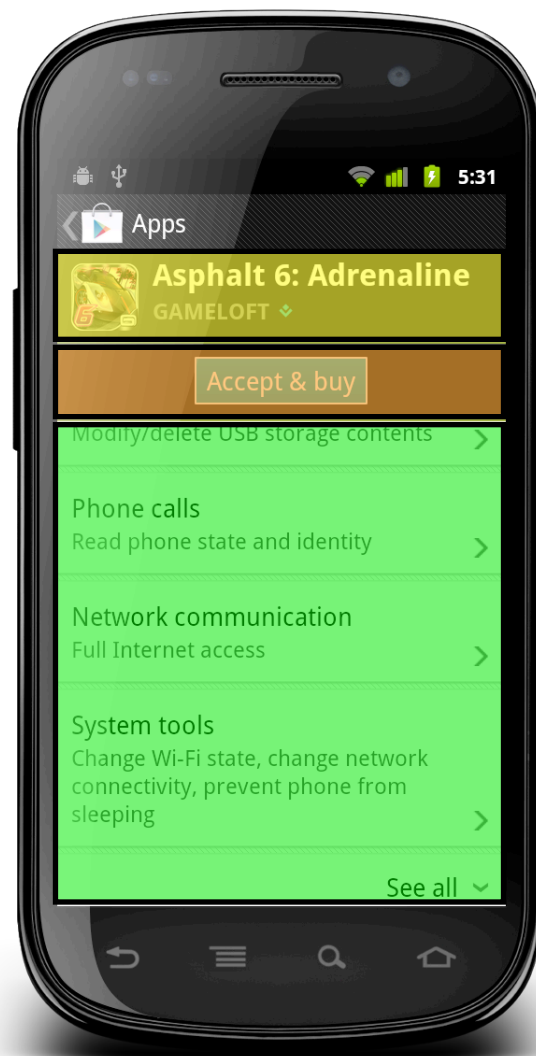
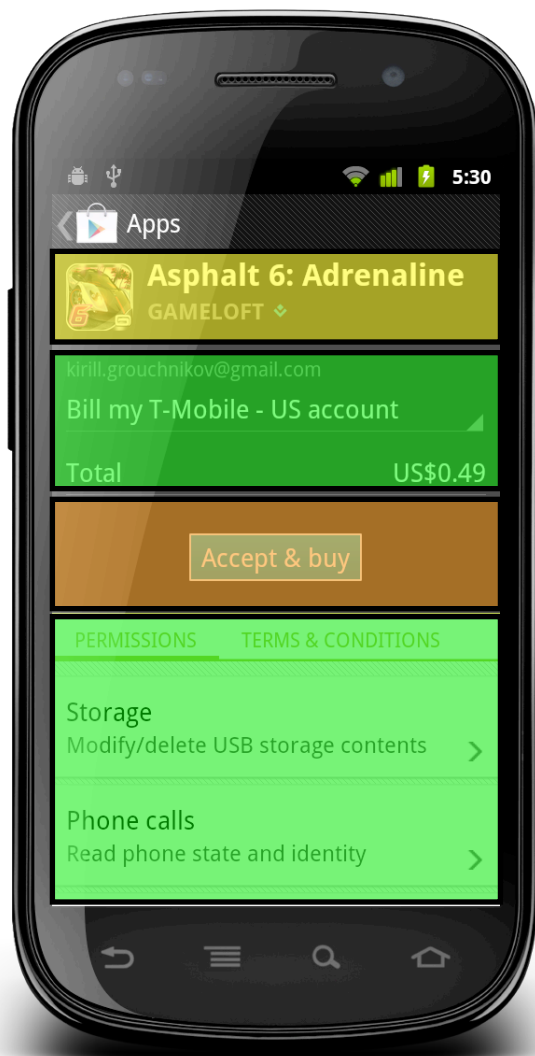





# synchronized scrolling\*



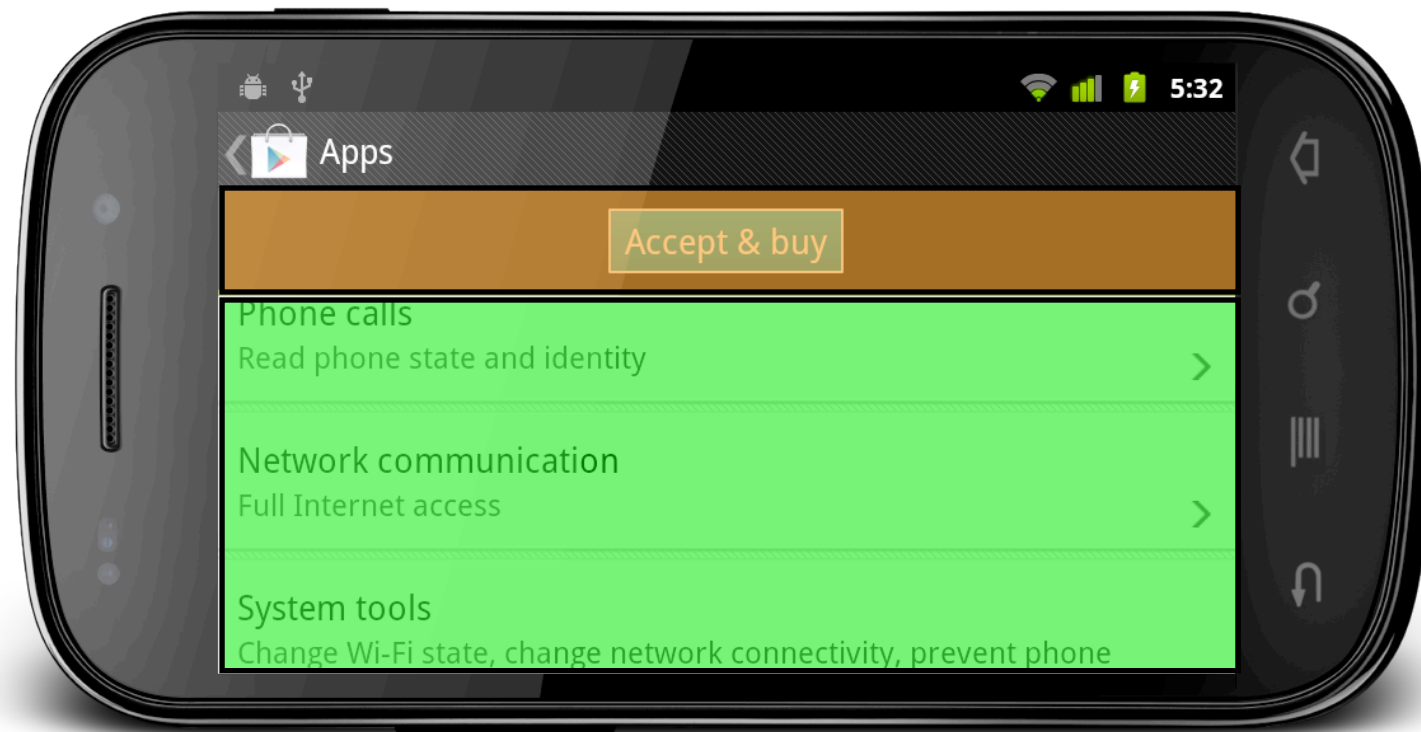
\* follow the light blue button



# synchronized scrolling



-  locked
-  scroll-to-snap
-  scrolling

# synchronized scrolling



-  scroll-to-snap
-  scrolling



responsive mobile  
design

effective use of screen estate  
for displaying your content

same content,  
same hierarchy

adapting to context

# Q&A

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