

Data Settings Designs

(MVP and V1)

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Try it out!

**Data Saving mode should be available in
Settings on your latest Android build**

Problem & opportunity

Excerpted from

PRD

User feedback highlights that users recognize Duo's high quality, however that comes at the cost of higher data usage.

- Users in developed markets skew towards generous, unlimited data plans and are more likely to be less sensitive to usage
- In contrast, users in developing markets skew towards prepaid plans, purchasing and rationing data packets by the week or day

We can offer different kinds of users control over their quality / data consumption and help more users experience the simple, high quality video communication that is just right for their personal, economic circumstances This can:

- Re-affirm the 'high quality' Duo brand, extending this perception to low data usage scenarios
- Create a sticky reason for users of other video calling apps to switch to and prefer Duo
- Unlock new users of video calling altogether, by reducing the data required to make a high quality video call

User needs

Users in certain markets, like Brazil and Philippines, care acutely about how much data they use on mobile devices and how much it costs.

We can allow users more discoverability and transparency in how they control the data they use with Duo, adapting to their needs and lifestyle, and thus enabling longer and more frequent calls on Duo.

User stories

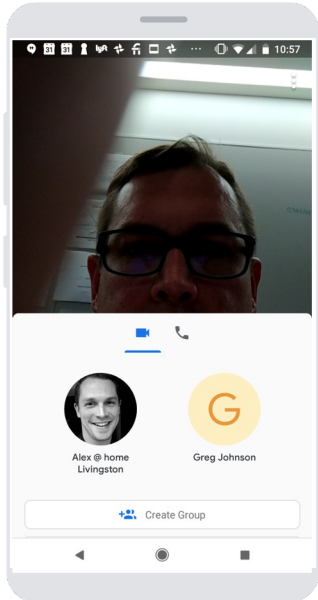
- User A is on a prepaid plan, and wants to minimise data usage when they're making calls on a cellular connection to reduce cost
- User B makes video calling at home on wifi, but is in a busy household where others are using the network at the same time (eg. netflix, gaming). He wants to minimise data usage on wifi to not take up the house's available bandwidth (Note: very common emerging markets use case where neighbouring houses will often share a single wifi access point)
- User C is on a cellular connection, video chatting with her kids who are showing off their latest lego creation. She wants to increase the quality of the video *during the call* so she doesn't miss out on this special moment.

Proposed MVP solution

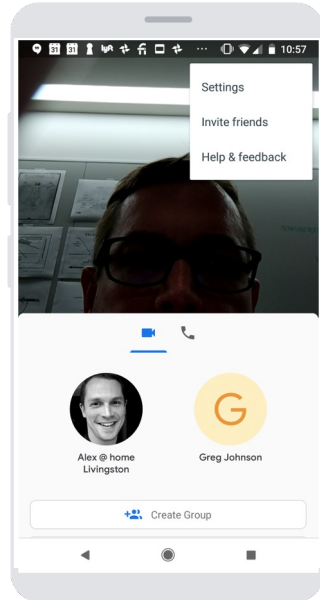
- Global settings as universal place to change before call and in-call
- Show quality degradation by using “live preview”
- Active reminder for people who turn on “Data limit” during call
- If setting “Data limit” is off, users can change it during call but as P2 option
- If caller’s “Data limit” is on we will notify callee that quality is degraded (need research)
- “Data limit” on would have different parameters for different countries based on expectations
- We’re not going to show data information after call

Current data settings in Duo

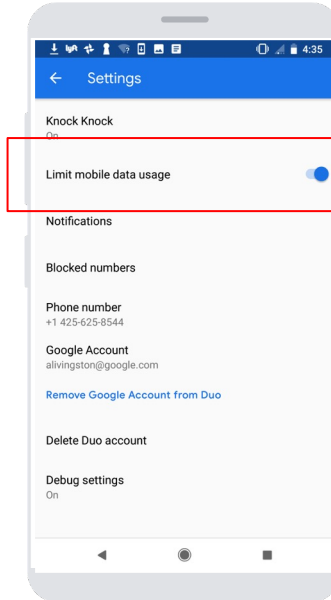
App open



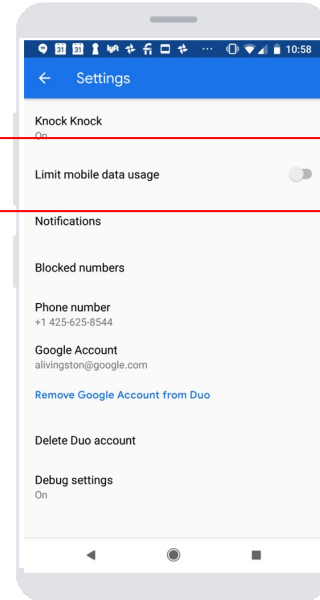
Settings open



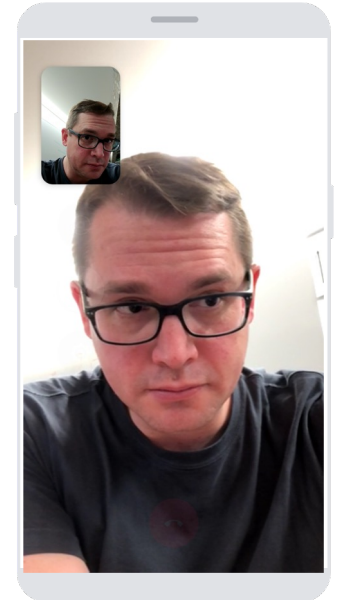
Current Limit Data control. Not clear what it means or is doing



ON/OFF

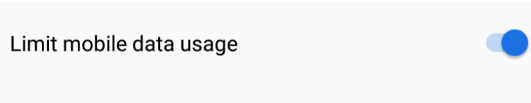


Making a test call, effect of Limit Data not implemented on one sided control



How we can improve data settings

Language is unclear and lacks information on what is actually happening “under the hood”



Settings are by default ON, but the effect and data usage are not apparent



To take have an impact, settings have to be symmetrical for caller and callee on each call



Open questions on current statistics

- Because it's on by default, how many people disable this in settings?
- How many people disable this in settings in specific countries that we are targeting?
- Do we have any data on patterns of users who disable and enable this feature multiple times?
- Do we have data on retention of users who enable or disable this feature?

Why *not* a granular slider?

- It conflicts with Duo's principle of simplicity
- It's not clear what the visible effect would be
- It can create multiple unnecessary states of users
- It has a level of granularity that is unmotivated from our research

Continuous (Active)



Sliders work best when the specific value does not matter.

- Nielsen Norman Group

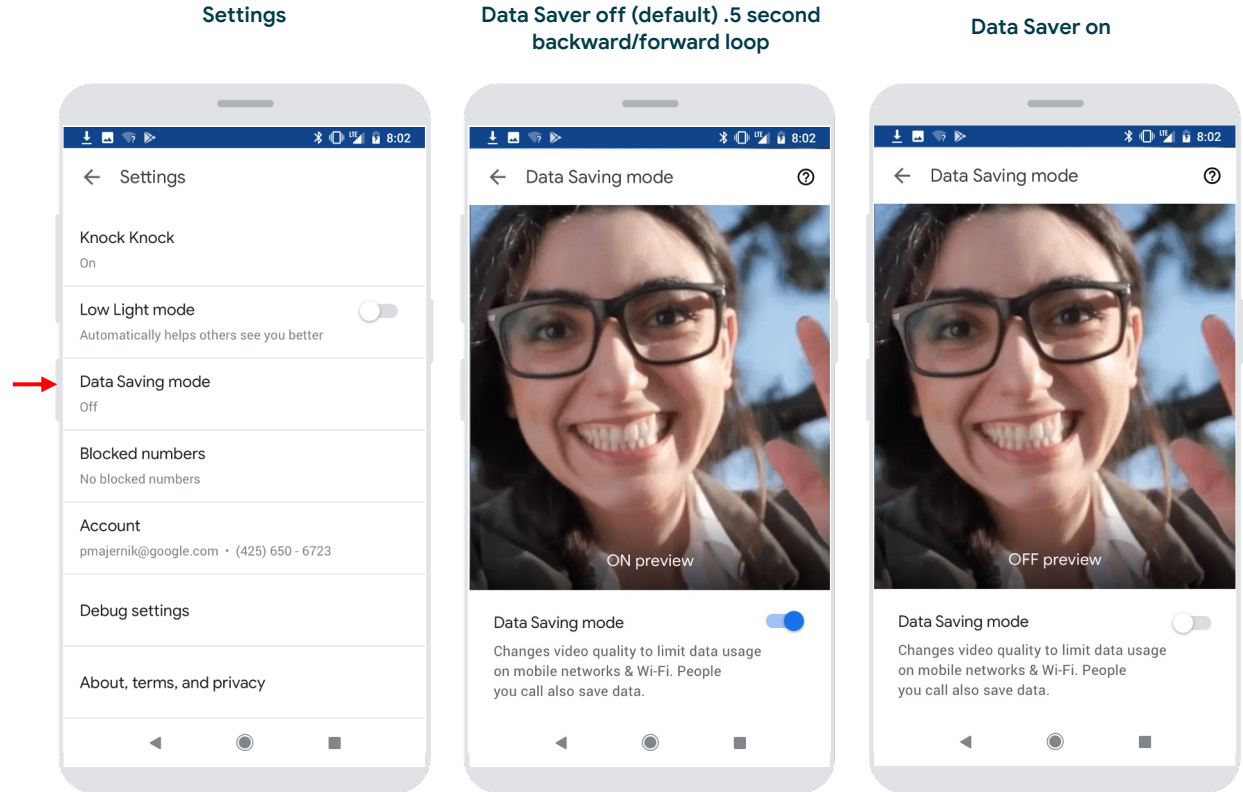
MVP Designs

User adjusts Data Saving globally in Settings

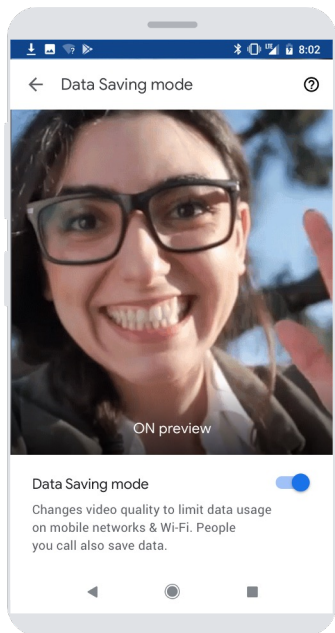
When not in a call, the user opens Settings. They can adjust data limits, and can preview the effect on the picture to inform their preferences.

Rationale

We will show an example preview to approximate to users how the picture will be affected. While showing a 'live preview' my be added in the future, today throttling data limits on and off may not have any visible effect. An example preview lets us control this and lets users make more informed trade offs.



The nitty gritty



Essentially, we are restructuring the model of the default state to an OFF default model for mobile, while keeping bitrate the same. This offers particular users most concerned with data usage far more control and impact (150kbs), while for the most part leaving the quality for Data Saving OFF the same. We differentiate on Wifi as well, because in certain markets there exist Wifi plans with a pay per amount structure.

Duo's current limits

Save data **ON** (default) Save data **OFF**

150 kbs

512 kbs

1.7 mbs

New limits

Save data **ON**

Save data **OFF** (default)

Data Saving mode **off** - **Mobile** network: **512** kbps

Data Saving mode **on** - **Mobile** network: **150** kbps

Data Saving mode **off** - **Wifi** Network:

1.7 Mbps

Data Saving mode **on** - **Wifi** Network: **384** kbps

Press for the Data Saving mode MVP launch

[Androidpolice.com](https://www.androidpolice.com) 4/10/19

Google Duo rolls out better data saver mode for mobile and WiFi connections

9to5google.com 4/10/19

Google Duo rolling out Data Saver feature, sacrifices video quality to limit data usage for both parties

[Phonearena.com](https://www.phonearena.com) 4/11/19

Change to Google Duo app saves users from overages and throttled data speeds even when using Wi-Fi

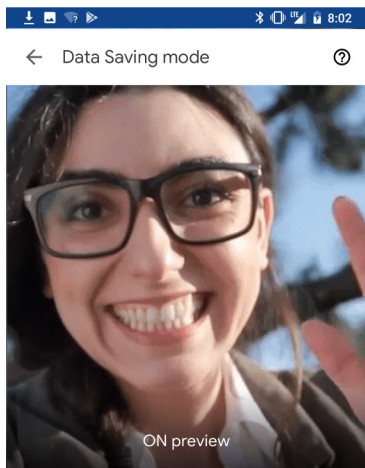
[Theapplegoogle.com](https://www.theapplegoogle.com) 4/11/19

Google Duo Adds Data Saving Feature For Android

V1 Designs

Multiple data setting options

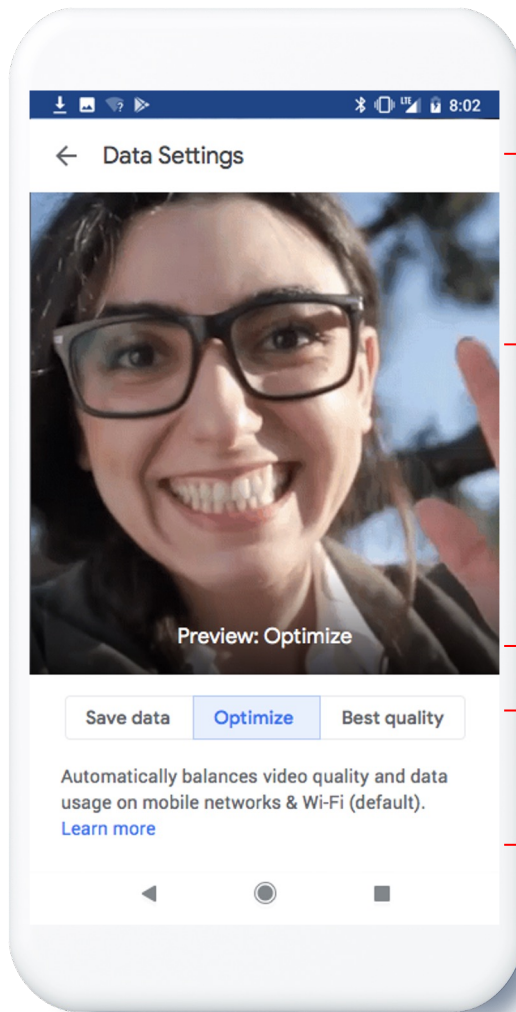
Data Settings V1 changes



MVP - reference



V1 - new



“Data Saving mode” becomes “Data Settings” - scaling to three settings and maybe more

Same Preview design as MVP w/ different resolutions

Repeating setting label over preview, mitigating against segmented buttons that truncate on large text phone settings

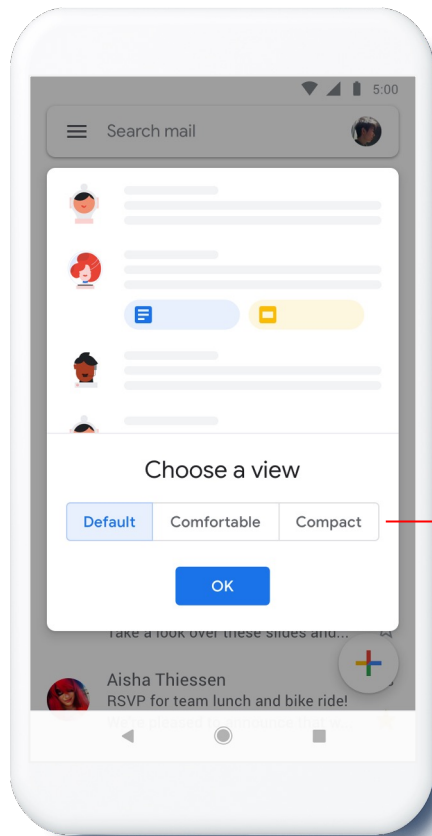
Segmented button sanctioned, spec'd, and in use by Gmail mobile density picker

“Learn more” moves to bottom for better user visibility and follows conventions we still use

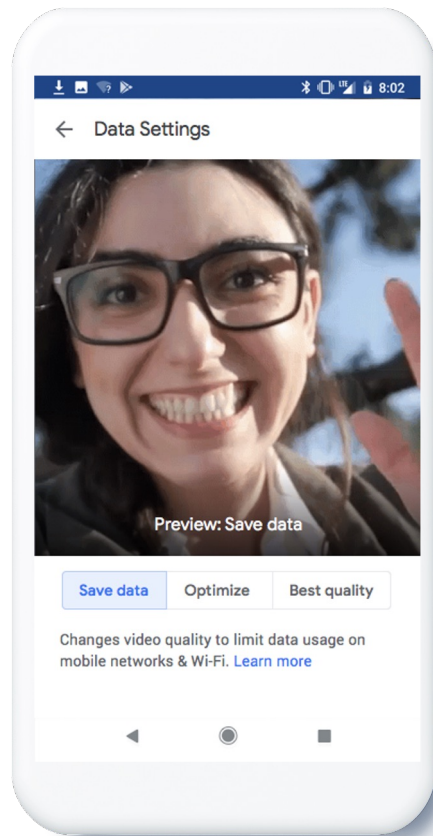
Conforms with a standard

Rationale

There is no need to reinvent the wheel, especially shipping fast and gathering data for continual improvements. We needed a three option segmented control. Gmail's current implementation of this, which also has controls and a preview of their effect, can be repurposed precisely for Duo.



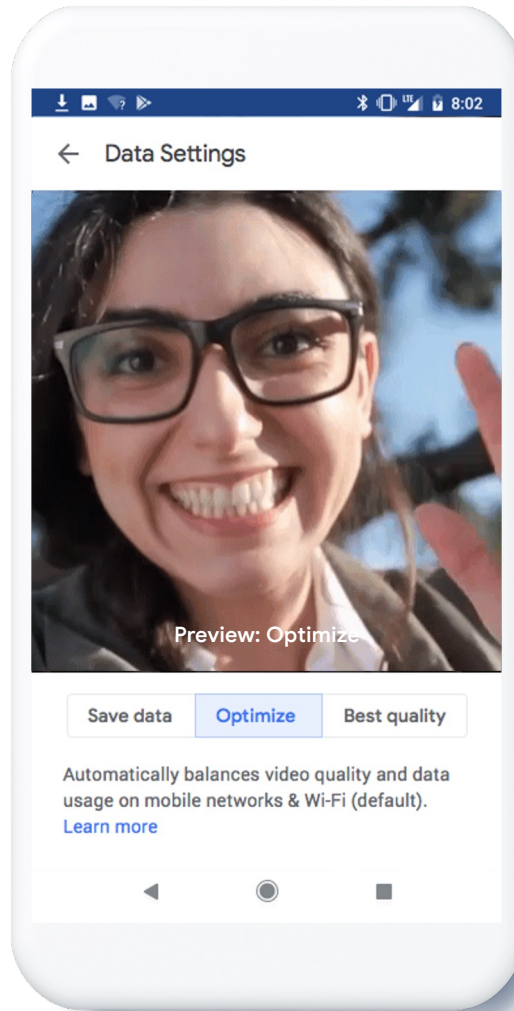
Gmail layout picker



Duo

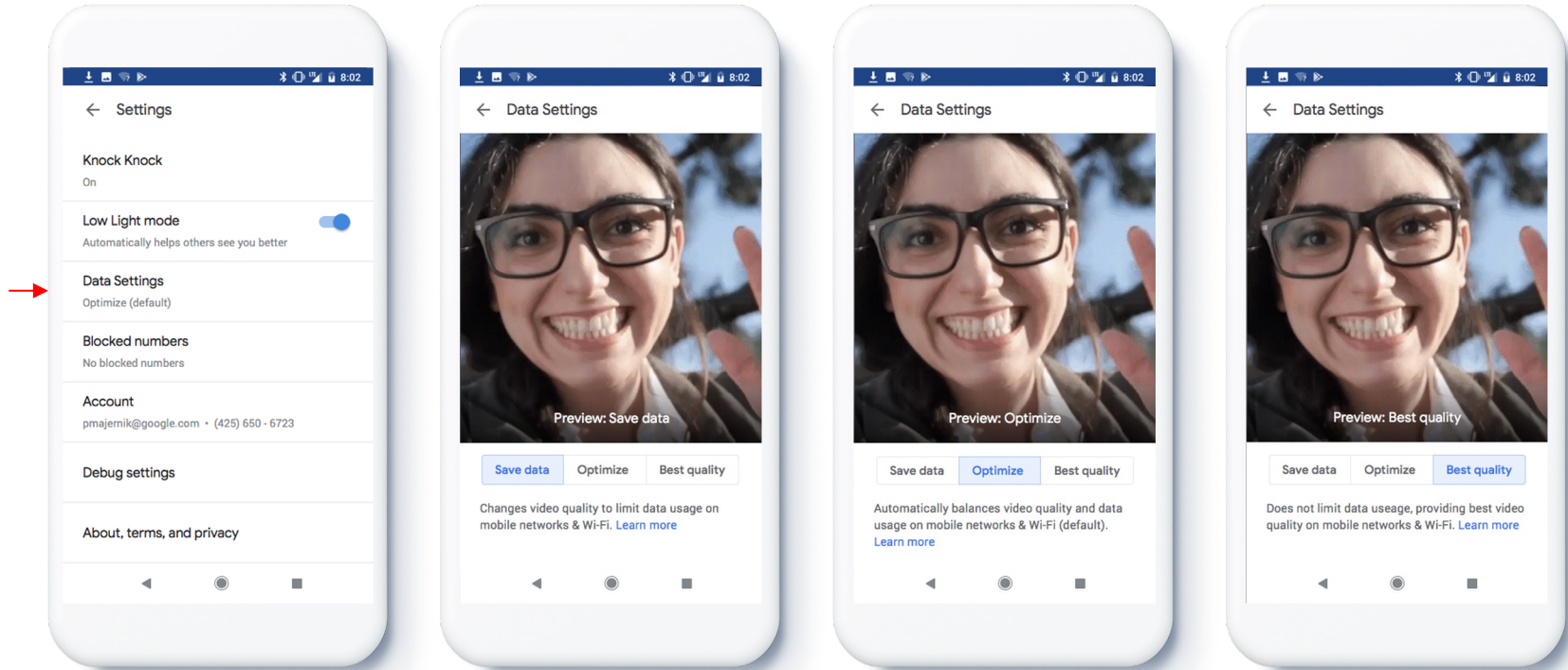
Illustration

(GIF for illustration only;
see build on device for
actual preview)



GIF

Data Settings - Chooser



Users can quickly jump to preview each setting and its effect on picture

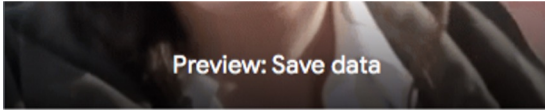
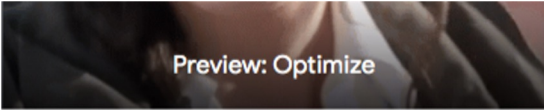
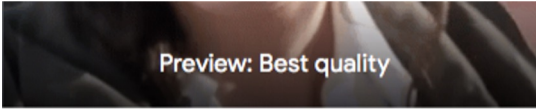
Settings language

Rationale

The language and especially the segment labels each are intended connote positive effects for the user group distinct interests and concerns.

For the most increased data limit, instead of “Low resolution”, “Lower quality”, or even “Limit data”, we decided on “Save data”, a phrase hypothetically comforting to users with a limited data plan (with testing to come).

Unlimited data conversely attracts those with value prop tailored to people with unlimited data plans and a focus on ‘best picture always’.

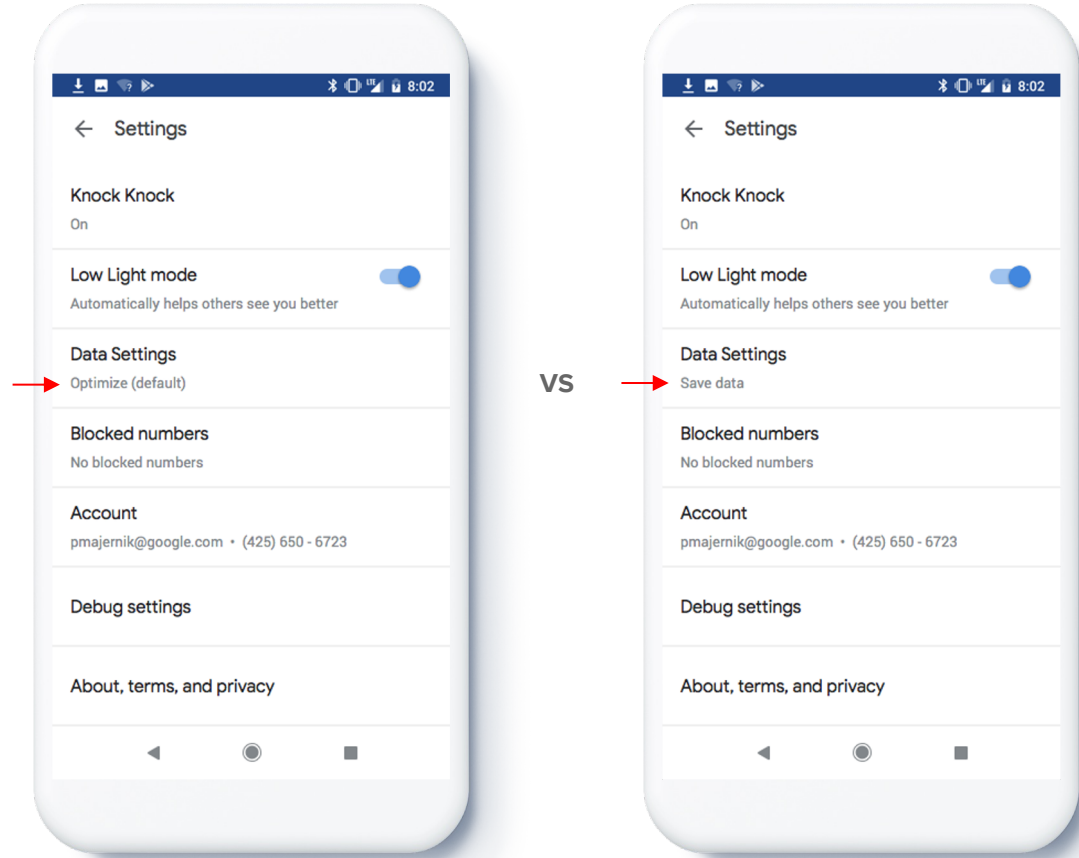
		
<input checked="" type="radio"/> Save data	<input type="radio"/> Optimize	<input type="radio"/> Best quality
Changes video quality to limit data usage on mobile networks & Wi-Fi. Learn more	Automatically balances video quality and data usage on mobile networks & Wi-Fi (default). Learn more	Does not limit data usage, providing best video quality on mobile networks & Wi-Fi. Learn more

Data Settings

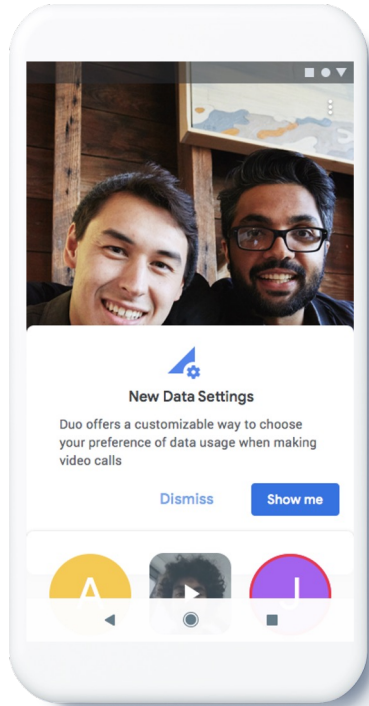
“Optimize” as default

Rationale

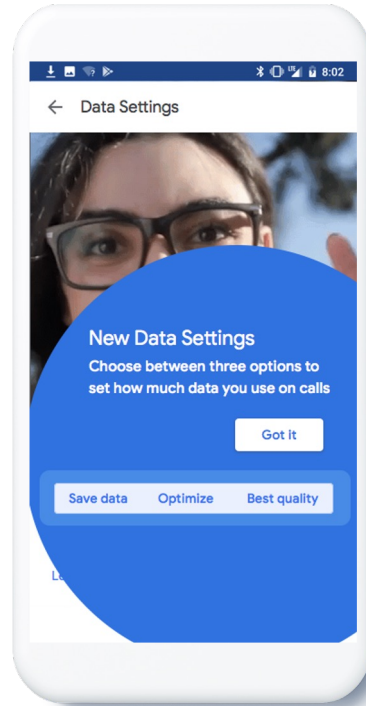
The default state upon feature launch will be “Optimize”, as it sacrifices little quality and meets most users’ needs. Testing will inform future decisions and designs. Instead of a “Reset” button, which would be overkill for three settings, we will hint at the suggested optimal setting here with the text “(default)”, and possibly in the preview UI.



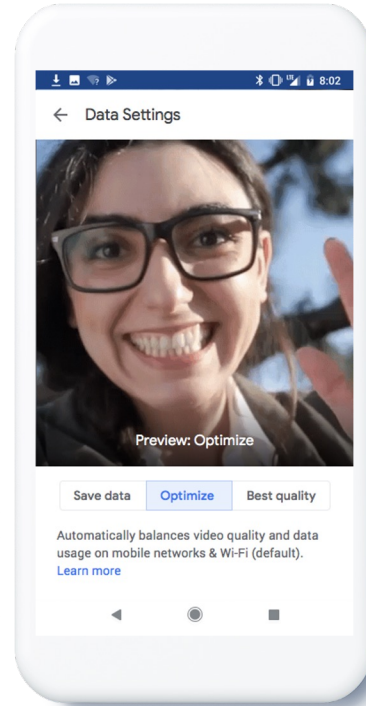
Promotional & first-run education



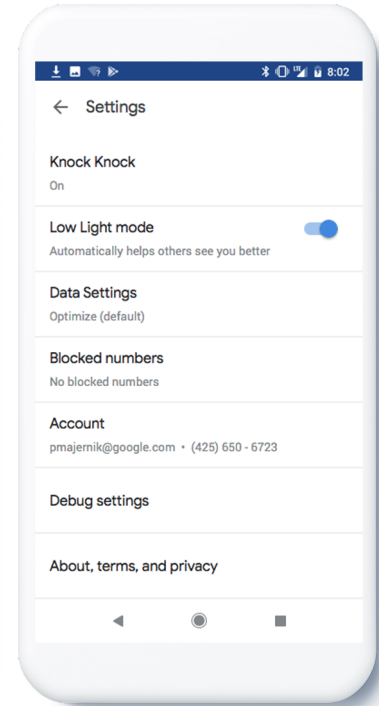
Clicks "Show me" from homescreen launch



Adapted GrowthKit edu UI - Clicks "Got it"



Lands in Data Settings



Navs back through Settings UI, reinforcing how to change later

Next steps

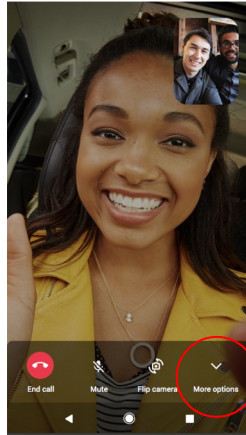
Data Settings entry point flow

Future implementation with new in-call controls

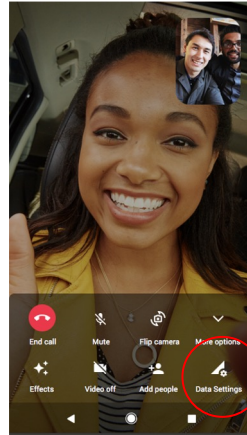
* In-call designs by zhoubaoliang@



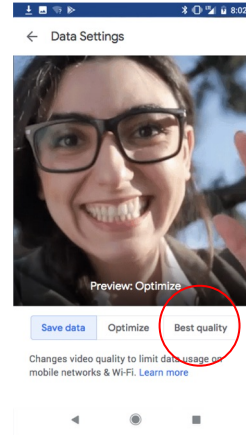
During a call;
Taps to invoke
controls



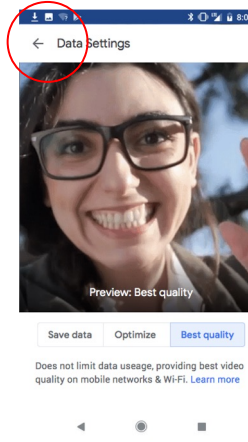
Taps to invoke
second control layer



Taps Data Settings



Changes setting
from "Save data" to
"Best Quality"



Previews effect;
clicks "Back"

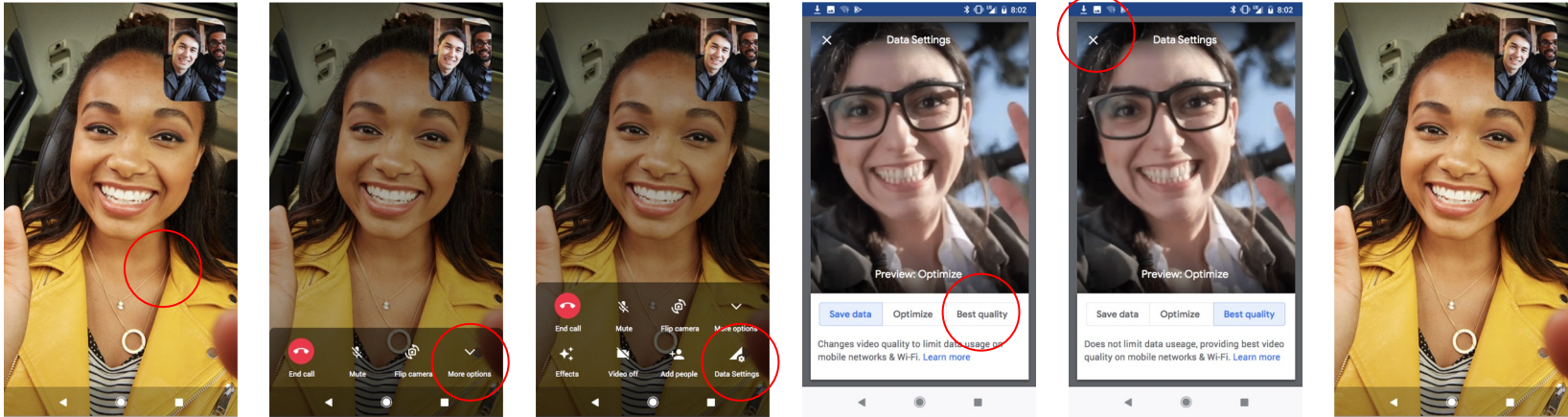


Returns to call;
(bypasses interim UI)

Data Settings entry point flow

Future implementation with new in-call controls - ALT

* In-call designs by zhoubailiang@



Changing Data Settings while in a call - an inset overlay version with a dismiss “X” button and hint at the call in background; differentiated from navigating to Data Settings normally

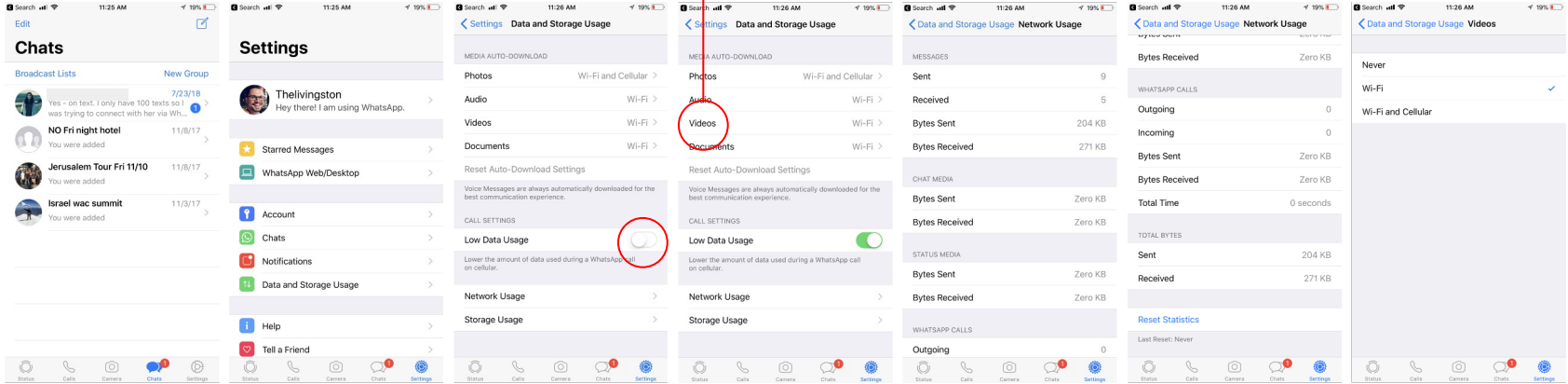
Appendix goodies



Data and apps audit

What's out there

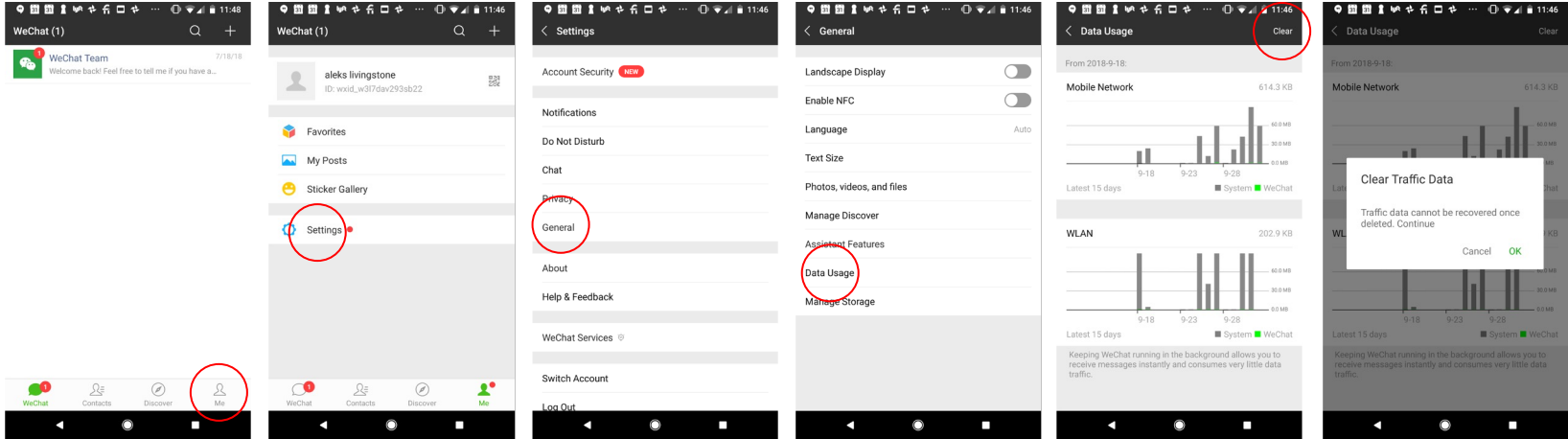
WhatsApp - iOS



Scrolled down

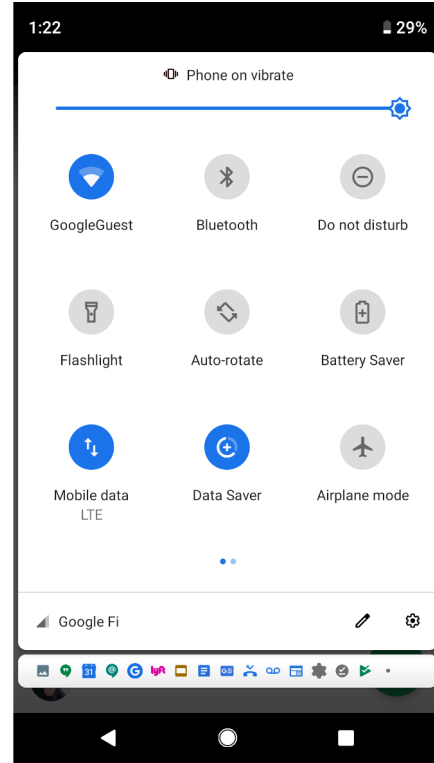
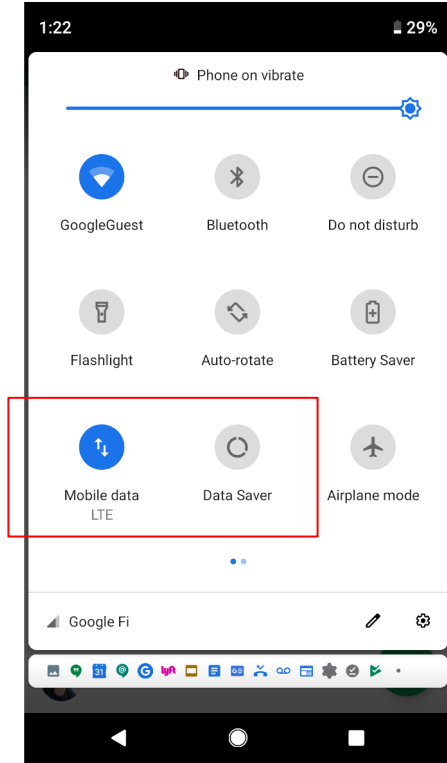
What's out there

WeChat - Android



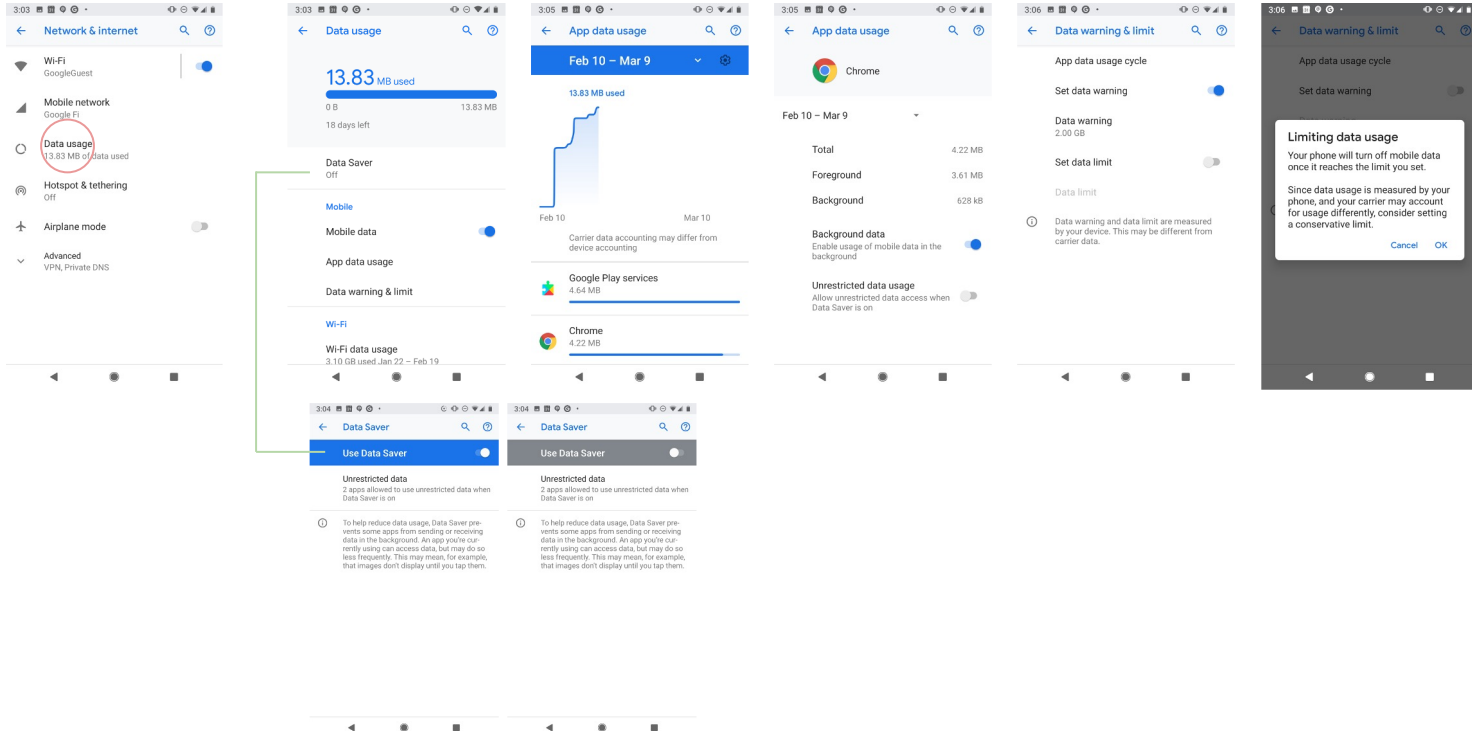
What's out there

Android data toggles



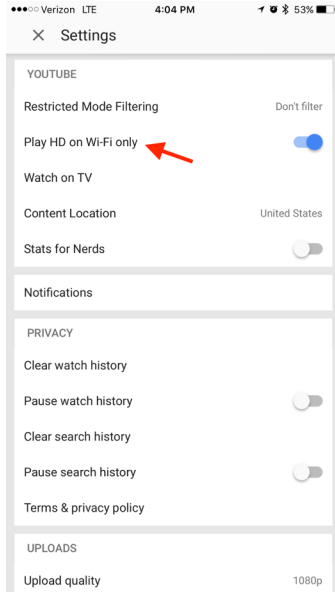
What's out there

Android data usage settings

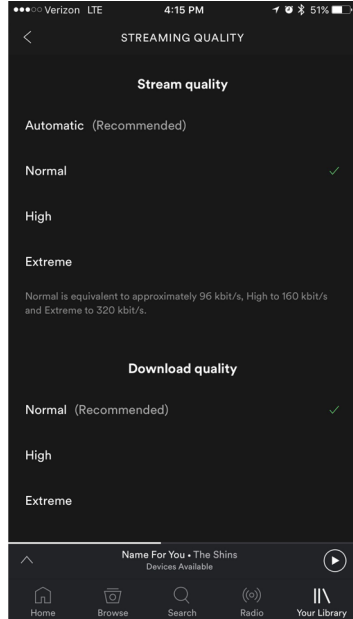


What's out there

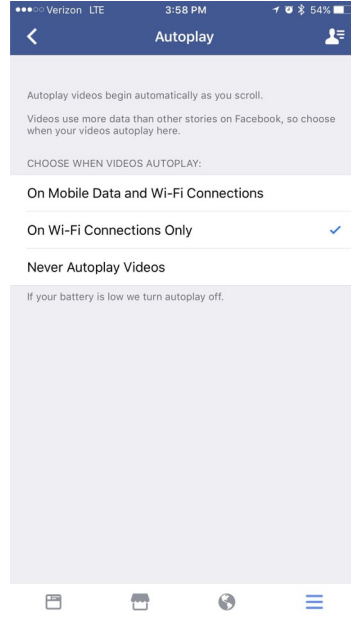
Data settings models in 'data heavy' apps



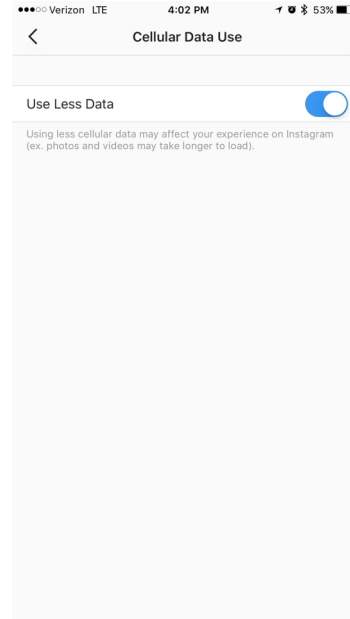
YouTube



Spotify



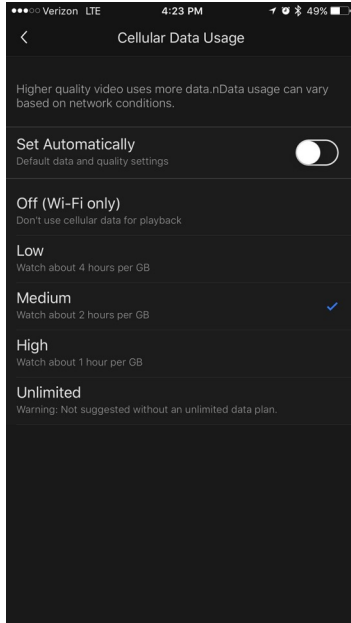
Facebook



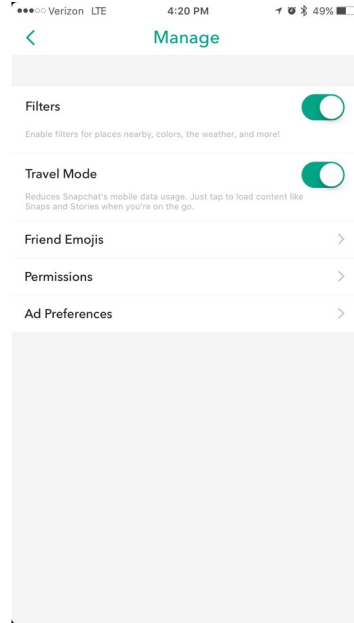
Instagram

What's out there

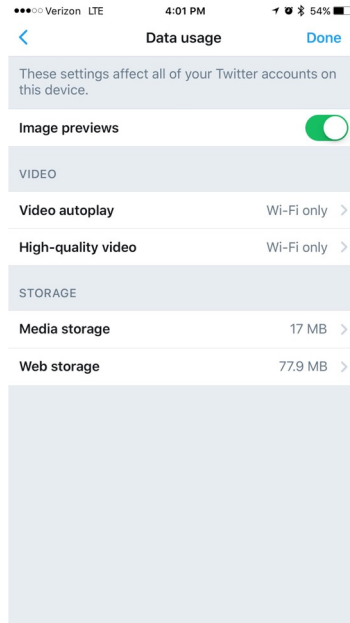
Data settings models in 'data heavy' apps



Netflix



Snapchat



Twitter



Iconography

Google Material Icon audit



Device: data usage



Actions: settings input antenna



Action: perm data setting



Actions: settings cell



Device: signal cell alt



Communications: cell wifi



Image: grain



Communications: import export



Image: tune



AV: high quality

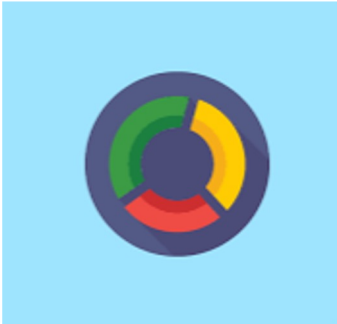


Image: compare

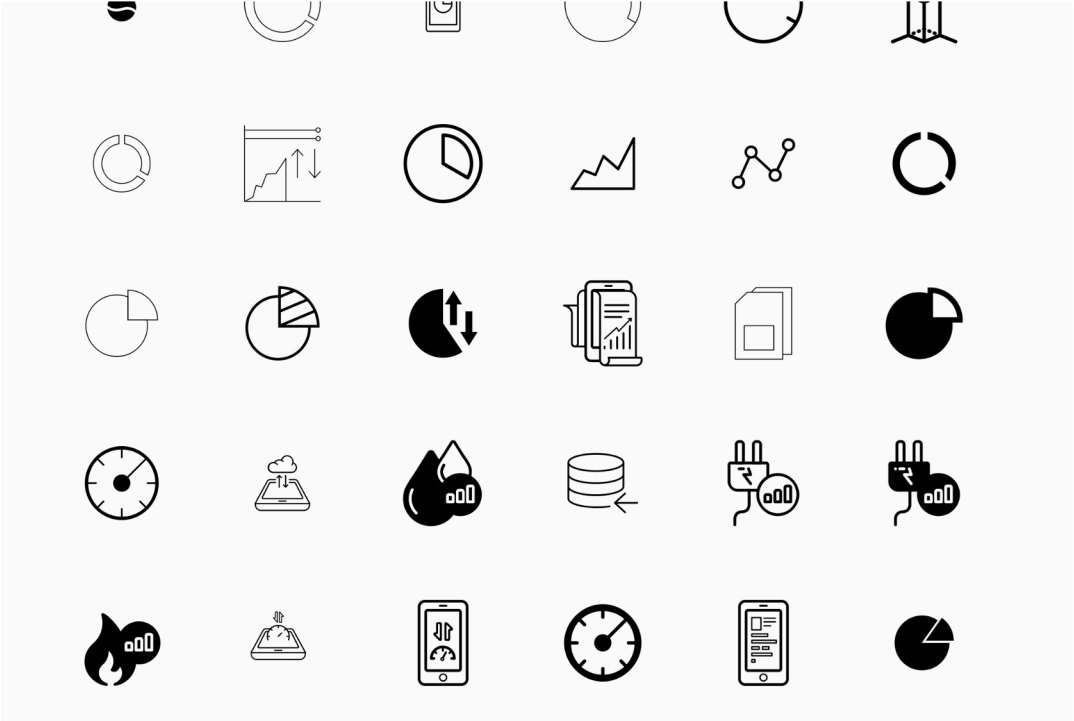


Notification: network check

“Data Usage” icons in the wild

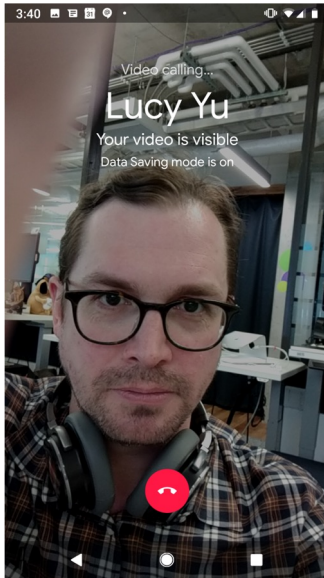


“Data Usage” icons in the wild

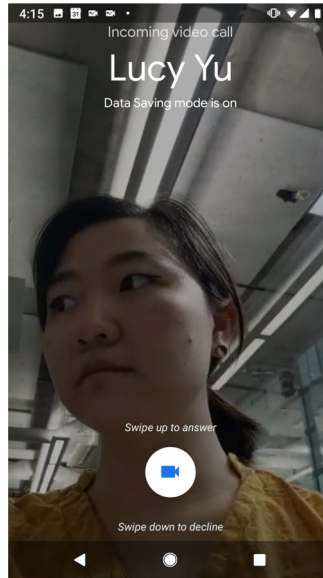


Iterations & ideas

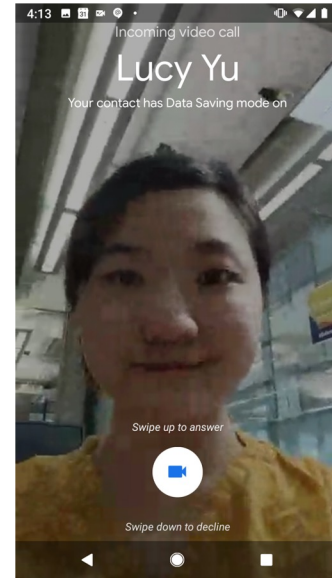
Reference: Today - Data Saving mode notifications (as of 032719)



Calling - I have
Data Saving mode
on



Receiving - I have
Data Saving mode
on

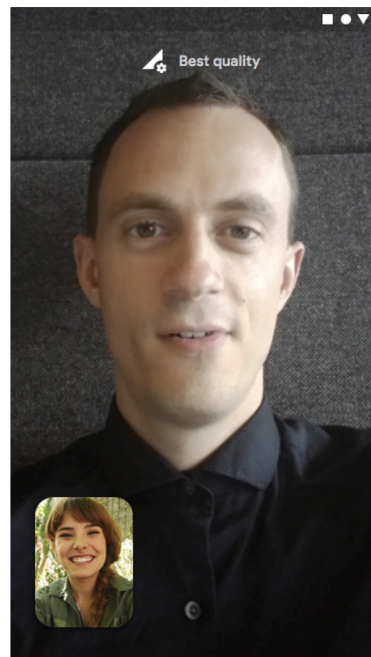
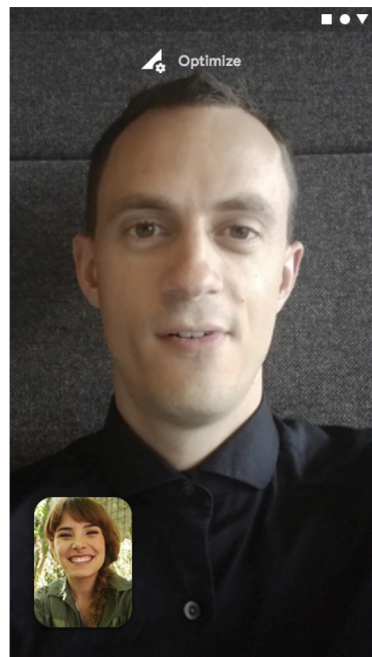
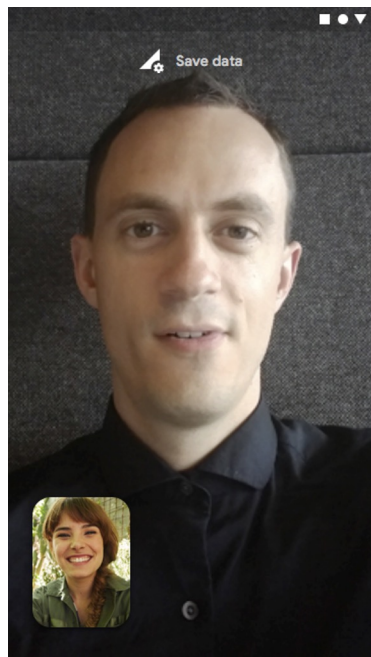


Receiving - They
have Data Saving
mode on

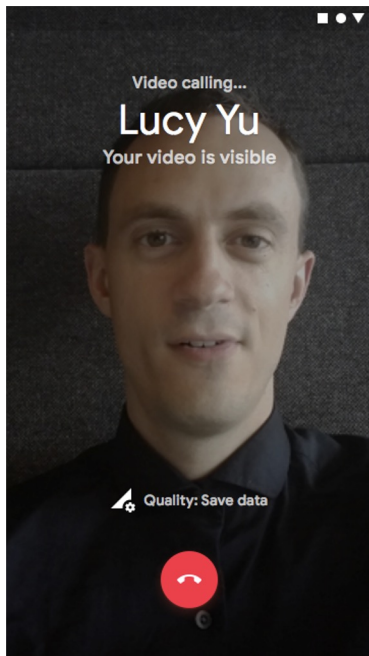
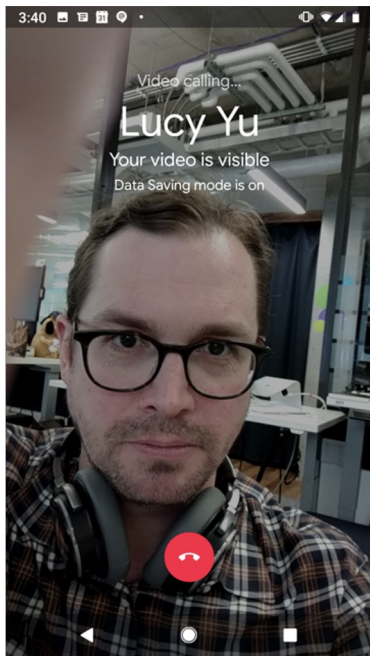
1 Outgoing - connected call

Toast

3 seconds

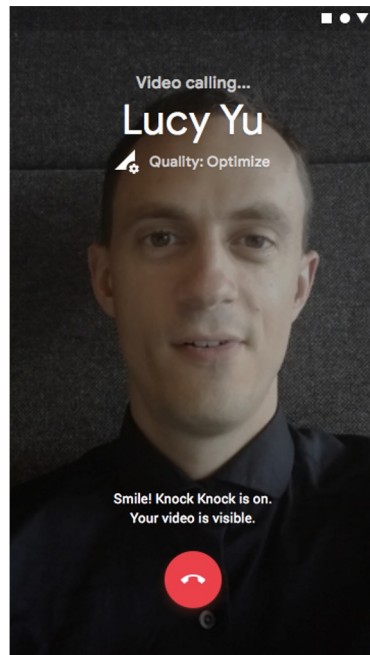
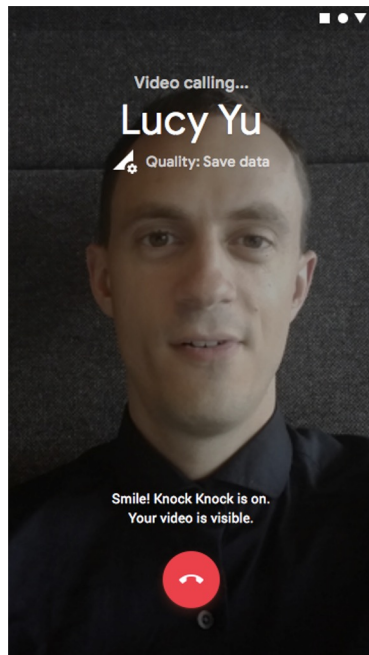
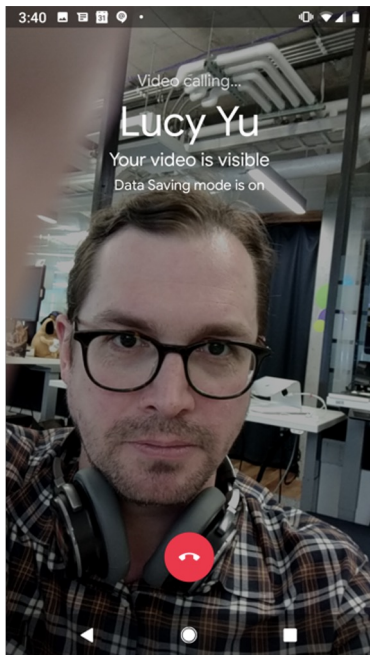


1 Outgoing call



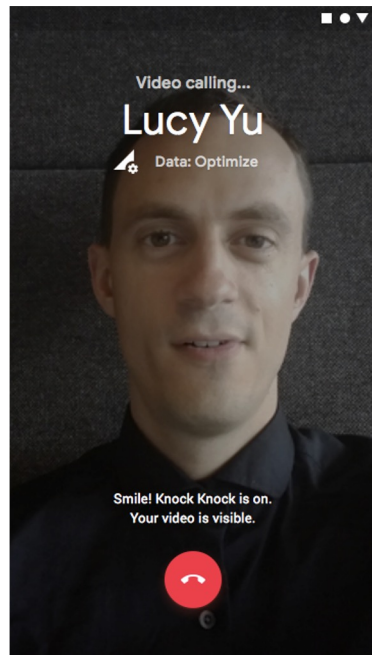
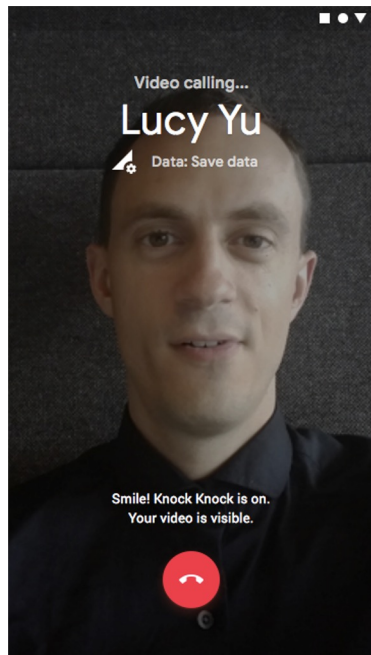
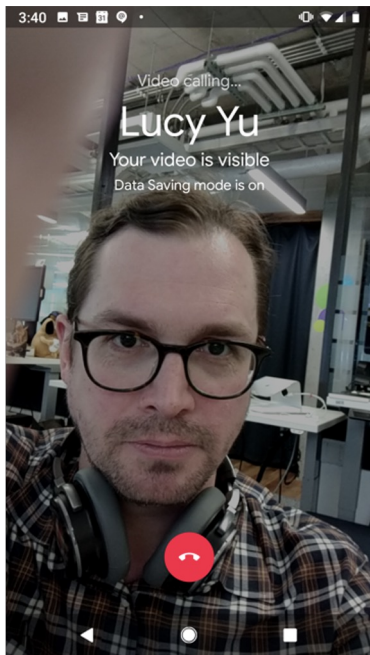
Current build

2 Outgoing call



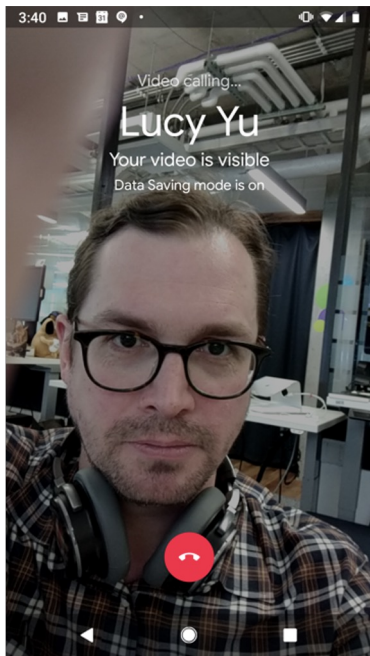
Current build

3 Outgoing call

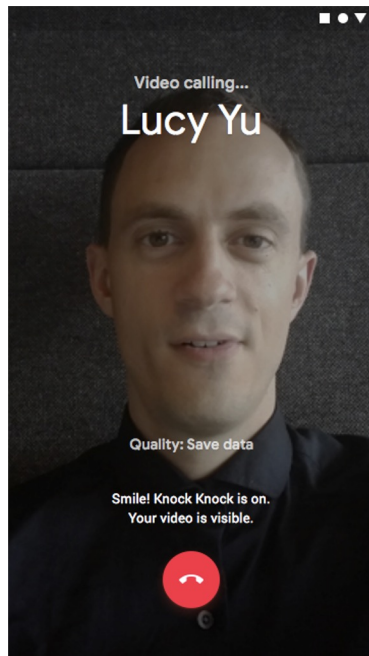


Current build

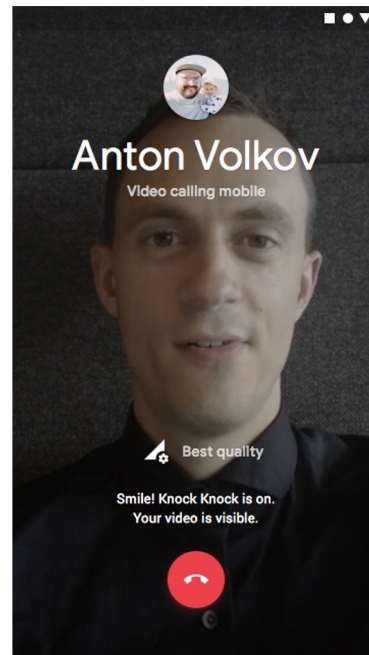
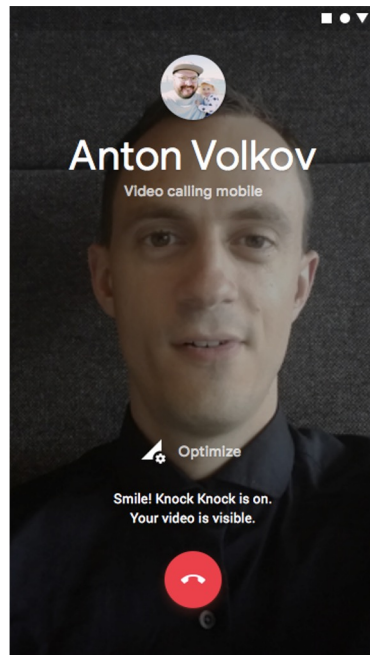
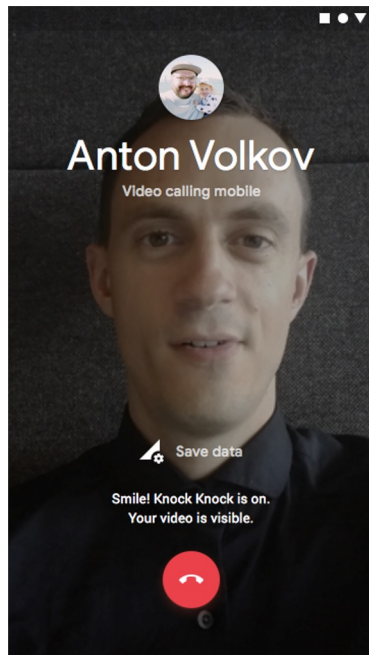
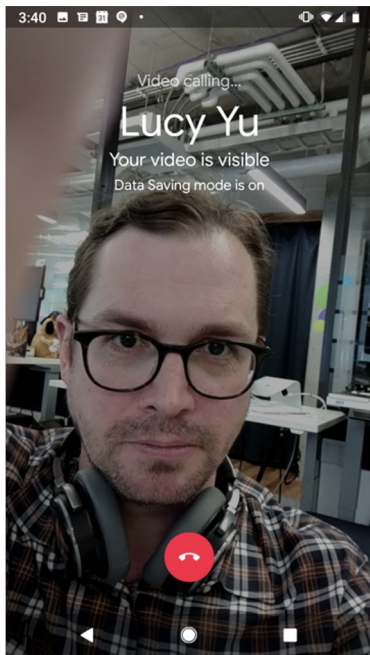
4 Outgoing call



Current build

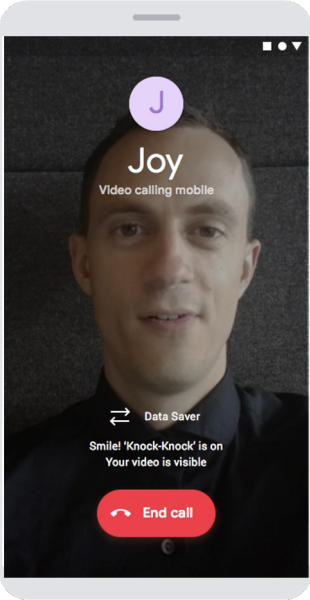
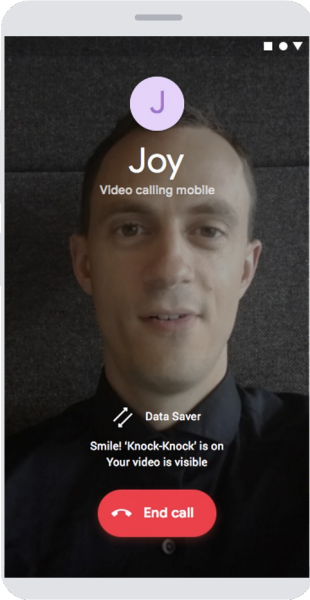
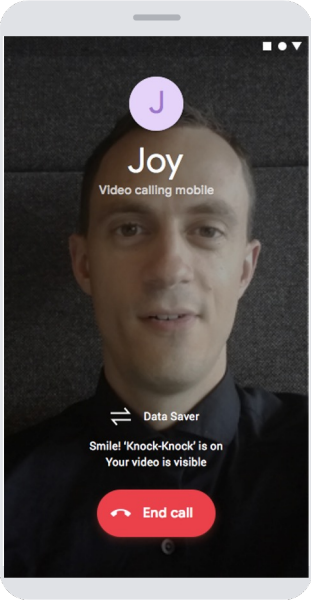
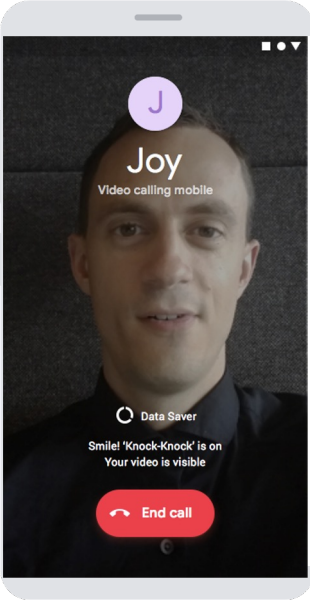
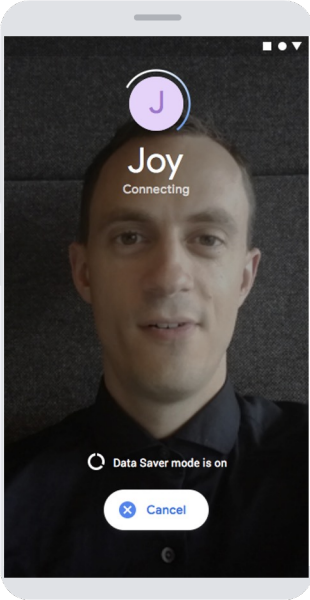


5 Outgoing call



Current build

Alt icons



Data Settings - Picker

Added 'advice' language for to help users choose

