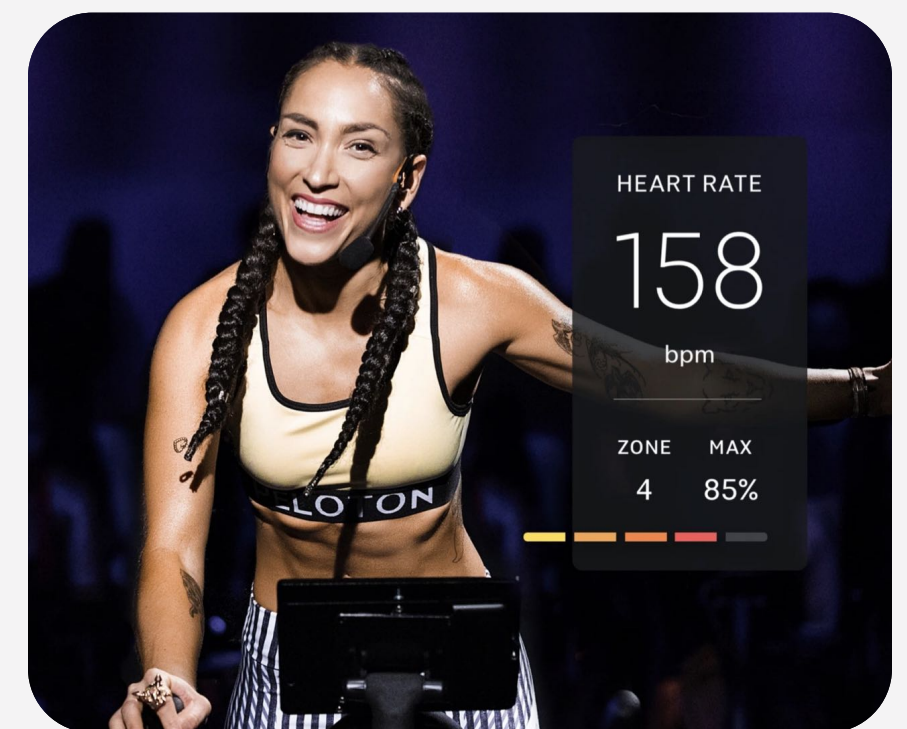# Self-Determination Theory (SDT)

The Building Blocks of Motivation

Why do video game designers, workplace behaviour experts, and exercise coaches all gravitate to this one theory?

Because motivation is relevant to all kinds of behaviour.

SDT gives practitioners a framework to design for people's universal motivations. In this lesson, you will learn about the three basic needs and how to design for motivation that lasts.

By the end, you'll have the blueprint for a perpetual motivation machine that's powered by the drives we all have.

Also, because it works.

Here are some impressive and diverse results practitioners have achieved by leveraging SDT:

✓ Workplace rewards that meet our three psychological needs raise productivity and retention (Landry & Whillans, 2019)

✓ Exercise programs designed with SDT principles increased attendance and internal motivation (Edmunds, Ntoumanis, & Duda, 2007)

✓ Immersive video game experiences and intuitive game controls increased gamers' motivation, which predict their game enjoyment and intentions to play again (Ryan, Rigby, & Przybylski, 2006)
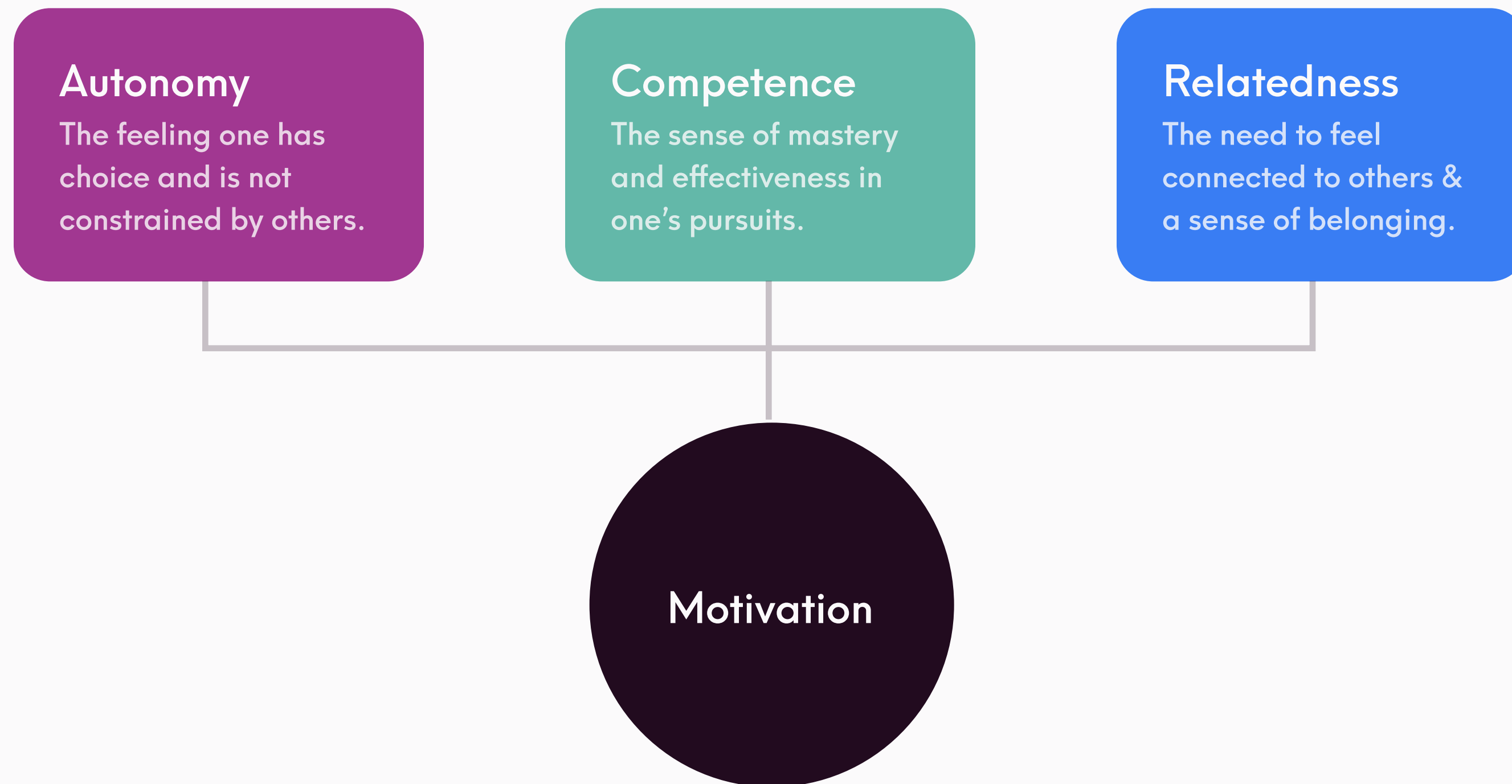
The proper question is not, 'how can people motivate others?' but rather, 'how can people **create the conditions within which others will motivate themselves?'**

Edward Deci, co-creator of SDT

with Richard Ryan

Self-Determination Theory

SDT conceptualizes 3 core psychological needs that relate to motivating human behavior: autonomy, competence, and relatedness.

Autonomy
The feeling one has choice and is not constrained by others.

Competence
The sense of mastery and effectiveness in one's pursuits.

Relatedness
The need to feel connected to others & a sense of belonging.

Motivation

Deci & Ryan (1985)

What is Autonomy?

Autonomy is the need to make decisions for yourself and feel a sense of agency.

Voting, choosing your meals, and setting career goals are all ways to exercise your autonomy.

Dimmer, Please!

People who have control over their lighting have better moods and rate themselves as performing better (Newsham et al., 2004)

Having control over office temperatures is related to higher productivity in workers (Boerstra, Loomans, & Hensen, 2015).

What is Competence?

Competence is the need to possess, demonstrate, and increase knowledge and skills.

When we learn something new, improve at our craft, or are recognized for our achievements, we feel competent.

Dissembling Legos can Destroy your Motivation

In an experiment by Dan Ariely and colleagues, two groups built Lego structures.

In the first group, the researcher thwarted their competence by dissembling the Lego each time.

The second group accumulated their finished Lego creations as an example of their mastery.

Taking apart the Legos demotivated people: they stopped working much sooner on other, real work tasks (Ariely, Kamenica, & Prelec, 2008).

What is Relatedness?

Relatedness is **the need to belong** to and receive support from groups that you care about.

When we're included or when we make a new close friend, we meet our need for relatedness.

The Healing Power of Hospital Roommates

In an experiment with heart bypass patients, people with a recovering roommate spent less time in the hospital than those with no roommate.

Paired up patients had less anxiety, walked more, and recovered faster than patients staying by themselves. (Kulik, Mahler, & Moore, 1996).

Deep Dive: Autonomy

Here, we'll cover:

• Real examples of designing for autonomy

• Dos and don'ts for using autonomy to motivate

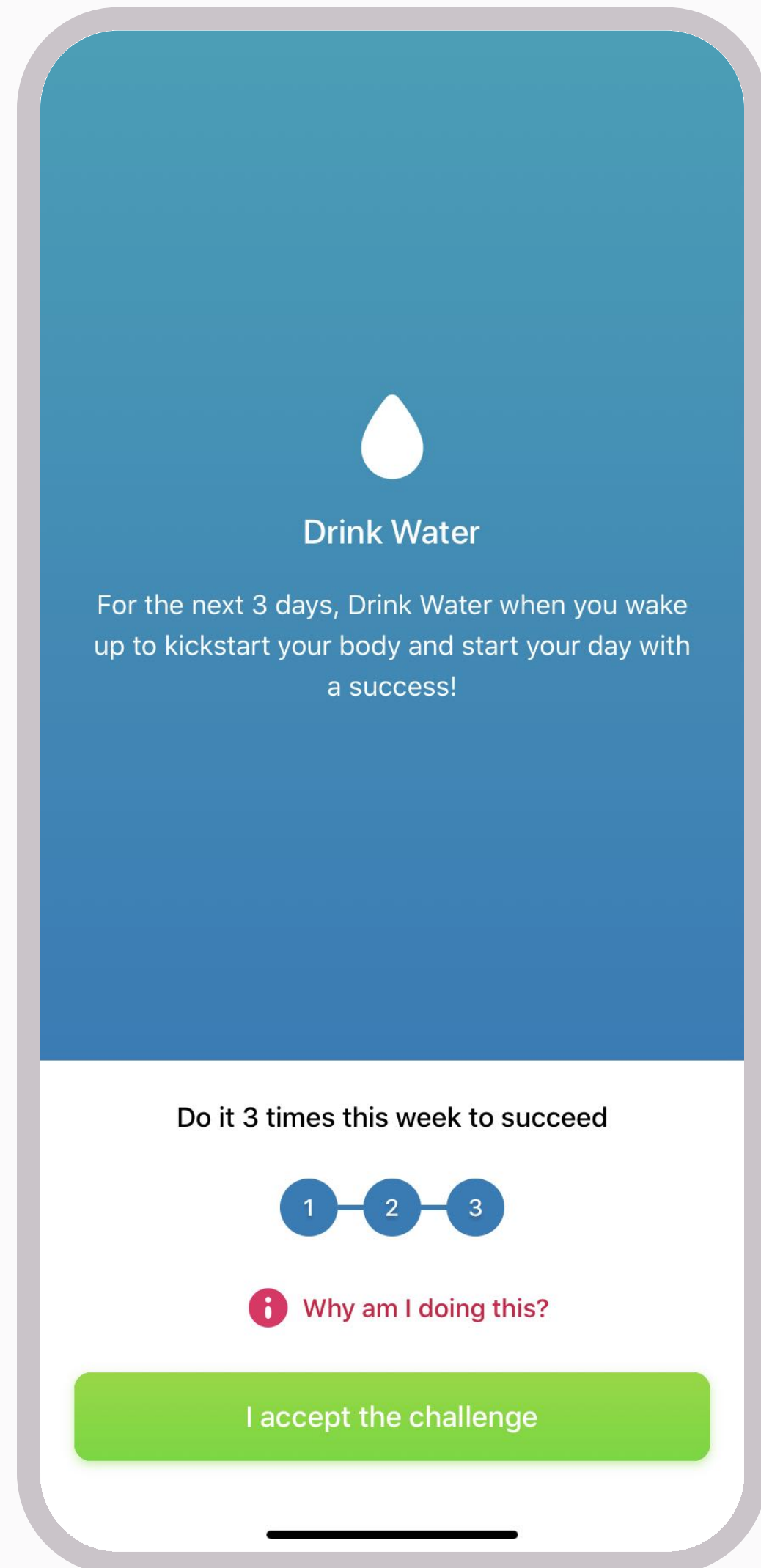• Autonomy gone wrong: how people tried and failed to motivate through autonomy

Peloton supports autonomy to sustain motivation

Users are able to choose a wide variety of classes, formats, goals, and social experiences.

Experientially, their choices are much wider than a typical exercise bike or spin class.

Fabulous Undermines Motivation by Removing Choices Around Goals

All users of Fabulous are **forced** to start with the same goal: a 3-day challenge to drink more water.

It's likely that retention would improve by allowing users to choose their goal (even if they were choosing from a small set of easy habits to bias toward success).

Autonomy: Best Practices

- Give people a few options for each choice

- Use autonomy for choices with big impacts to the user, not just minor custmoizations

- Show the impact of users' choices with scenarios, if relevant

- If you have to limit the user's autonomy, explain to them why you're doing so

Autonomy: Things to Avoid

• Don't overwhelm people with too many miniscule decisions or too many options

• Don't leave people uninformed for big decisions; give them tools and resources to make an educated choice

• Don't force people to do things if it's not needed; give people the autonomy to defer tasks
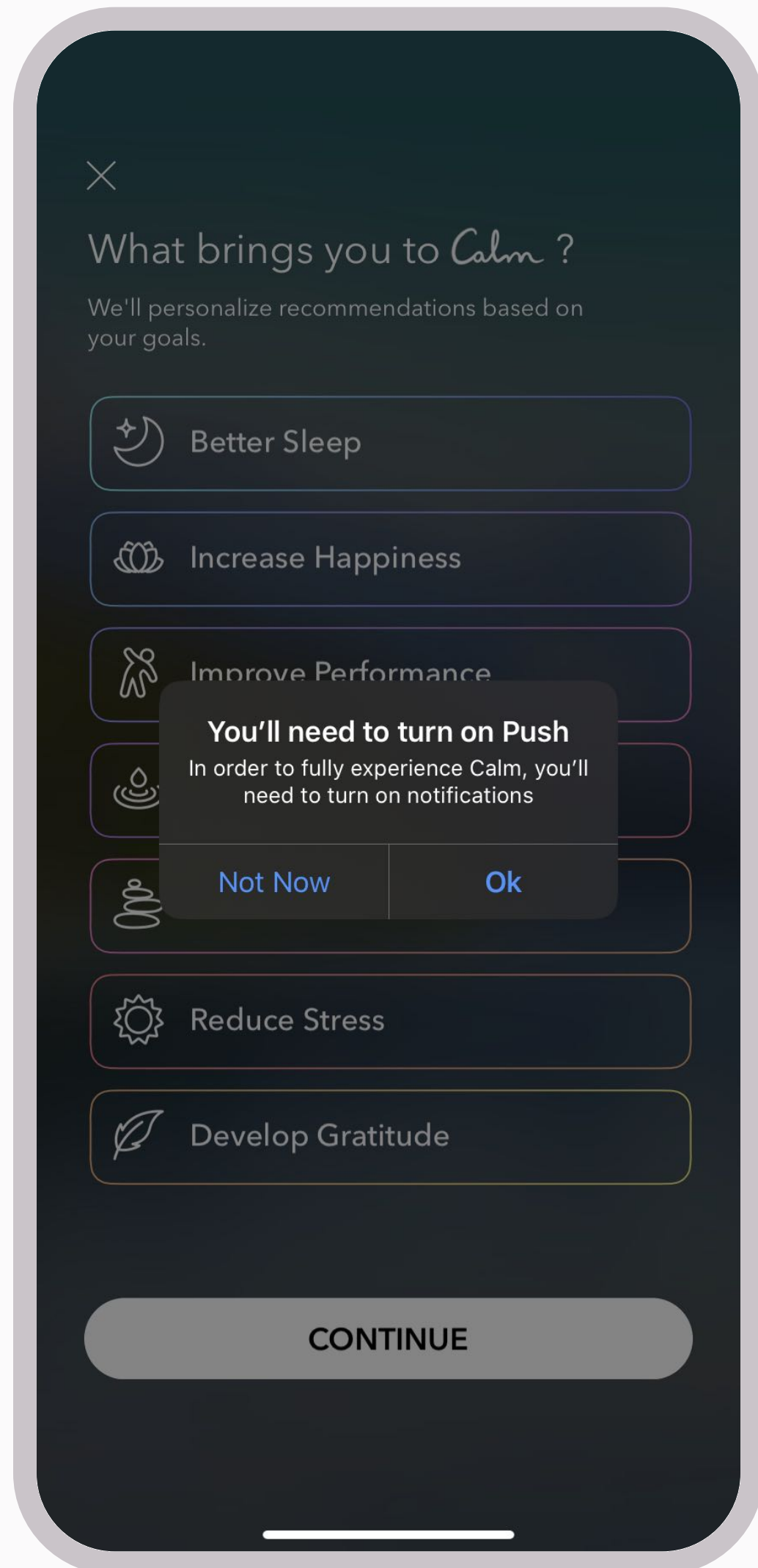
If You Have to Limit Autonomy, Try to Explain Why

Calm doesn't give the best rationale here, but this is better than what many experiences do when they have to limit choice (i.e. nothing at all).

Enable Small Expressions of Autonomy to Drive Retention

Reflectly essentially allows users to customize the coloring of the app early in onboarding.

There's some evidence this type of effort causes people to perceive greater value or attachment to the things they've customized. Dan Ariely and colleagues refer to this as the "Ikea Effect"

Boom - magic color change!

CAN BE CHANGED LATER IN SETTINGS

NEXT
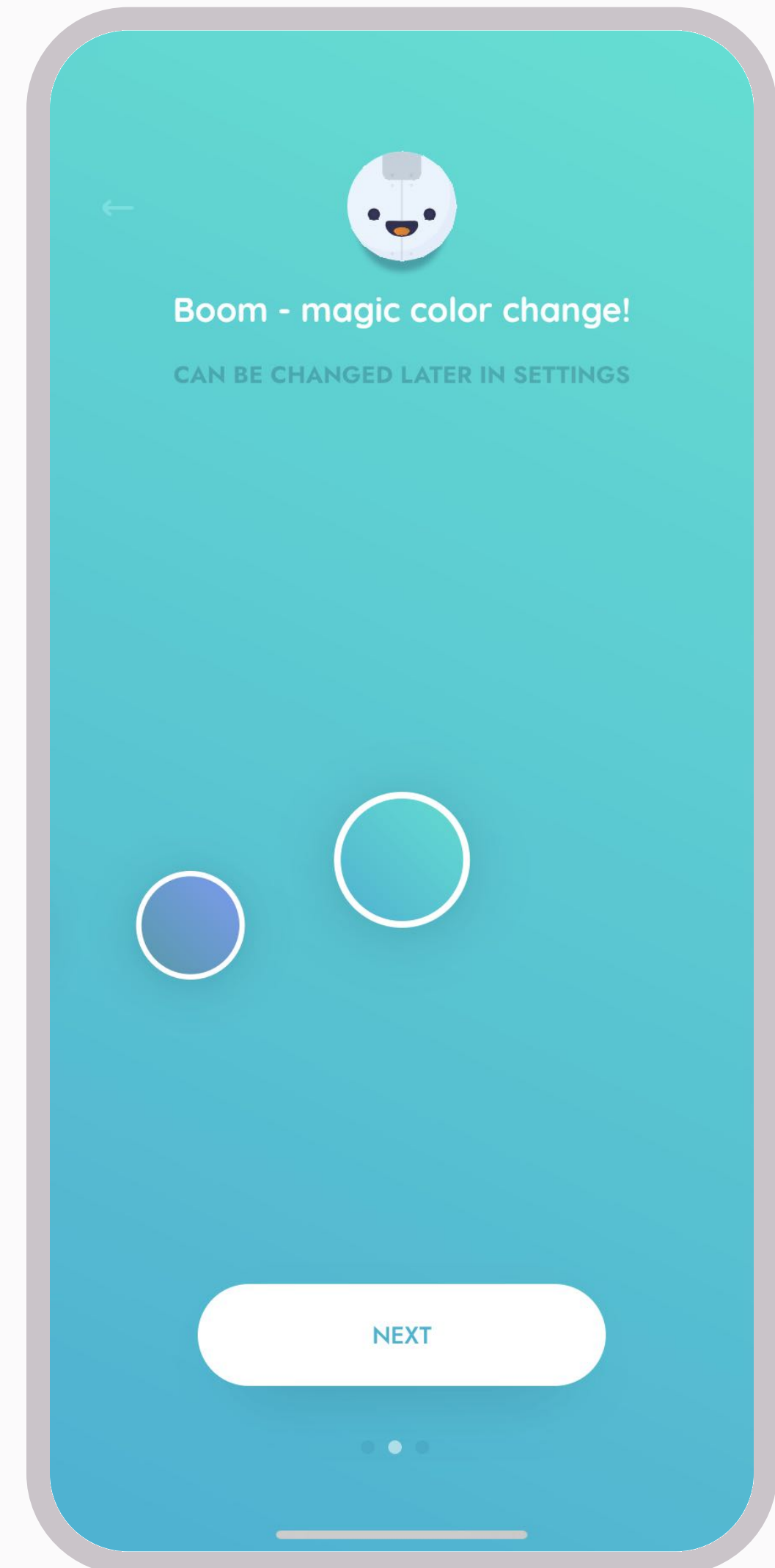
Deep Dive: Competence

Here, we'll cover:

• Real product examples of designing for our competence needs

• Dos and don'ts for using competence as a motivator

• Competence gone wrong: how people tried and failed to motivate using mastery

More measurements means more ways to motivate people

By tracking performance and outcomes in a variety of ways, there are more opportunities to show progress and reinforce competence.

Peloton notes milestones and progress for a wide selection of metrics. Instructors even call out individuals' achievements to reinforce the user's competence.

10:44

Pick a goal

Casual	5 min / day
Regular	10 min / day
Serious	15 min / day
Intense	20 min / day

You can always change goals later.

CONTINUE
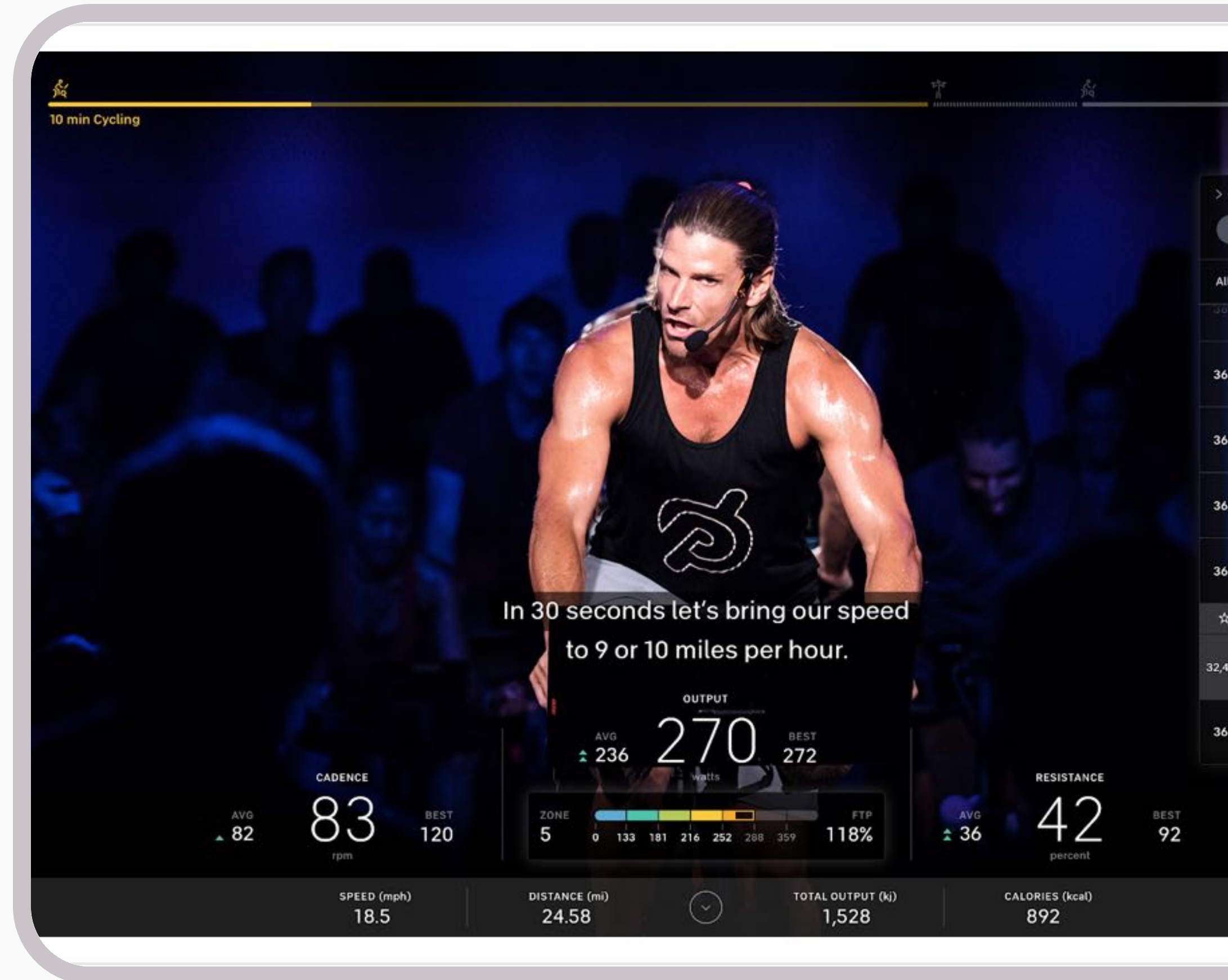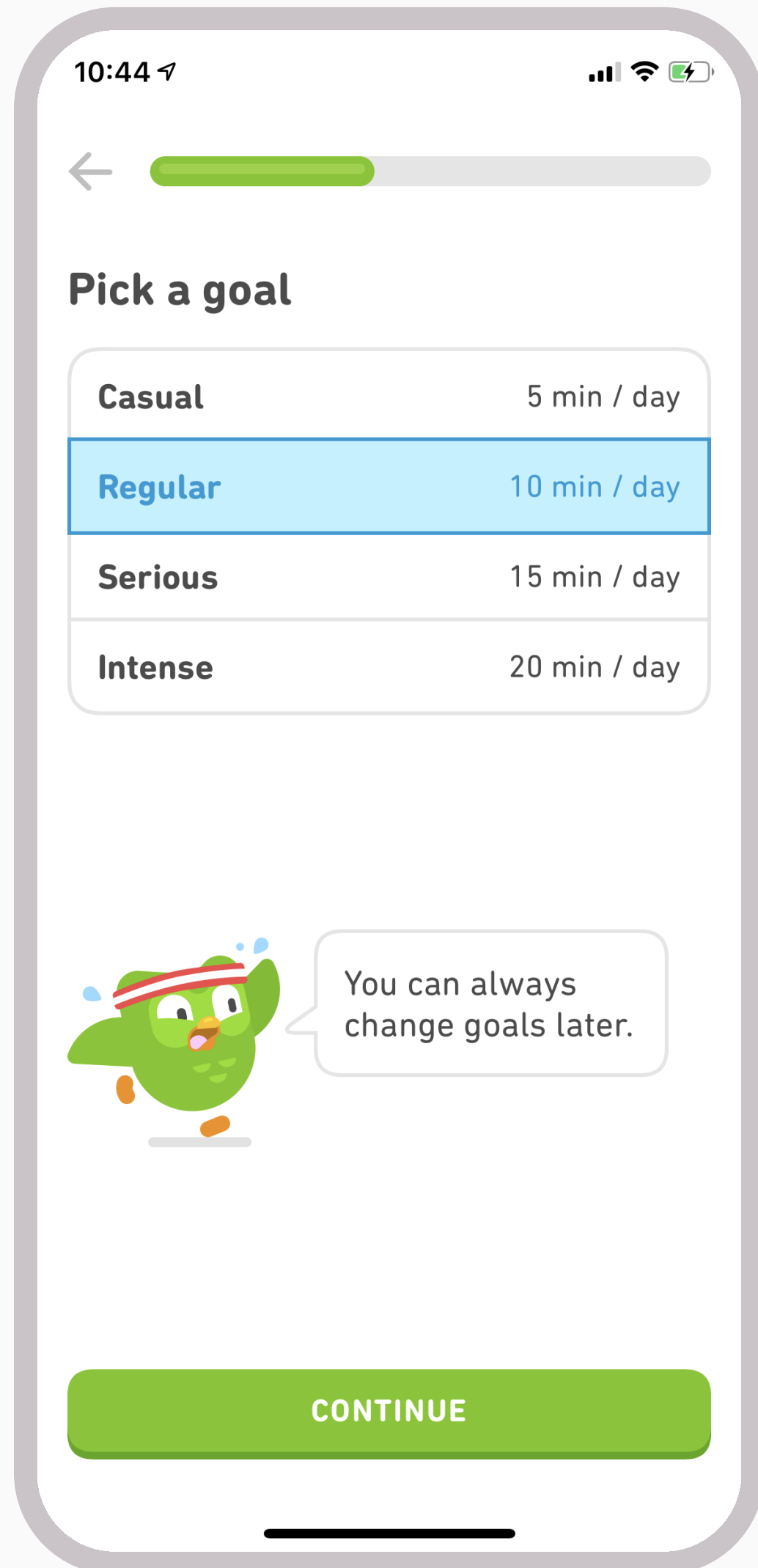
Duolingo Motivates With Competence and Autonomy
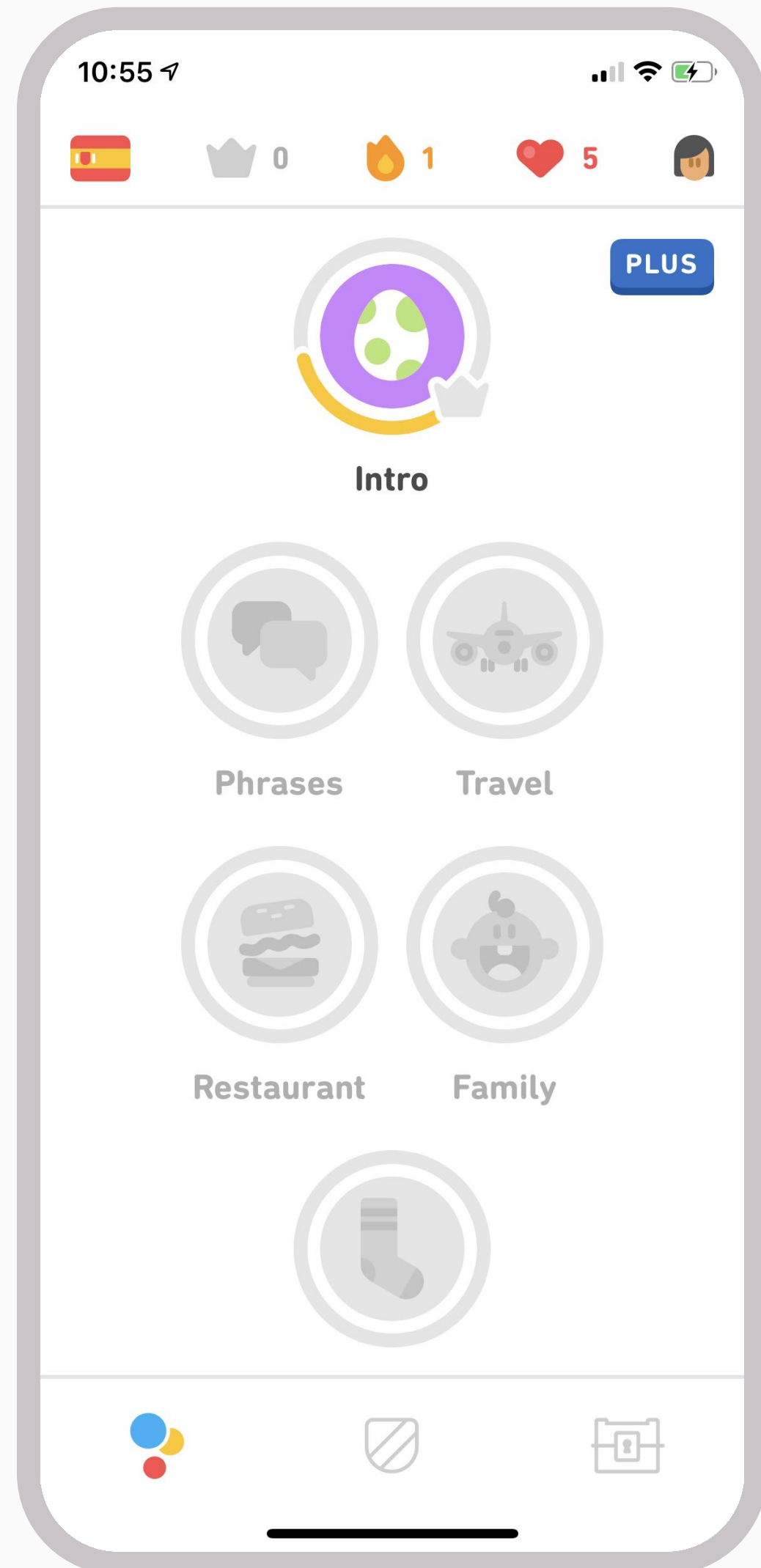
Letting people pick an appropriate challenge level for a task is a good way to address both psychological needs, since something too hard or too easy doesn't provide opportunities to show your skills.

Enabling users to change their mind later is also important, in case they don't accurately assess their skill or effort level.

Showing Progress Visually Makes Competence Salient

Borrowing the skill tree visualization from world of video games, Duolingo again kills two birds with one stone.

Competence is reinforced by filling in lesson badges with colorful illustrations, and users are empowered to pursue the lessons in any order they want.

Competence: Best Practices

• Design for users' "Goldilocks zone" – not too difficult that it's impossible, but not too easy that they have no challenge

• Recognize progress at a schedule that matches their tasks – don't update poeple daily if changes only happen once a week

• Break up difficult actions into manageable chunks to help make progress more visible

Competence: Things to Avoid

- Don't set extremely difficult goals beyond everyone's grasp;

- Don't force everyone to follow the same path; let people skip ahead if they don't need a tutorial or customize elements of their experience (e.g. coaching a la drill sergeant vs. mom)

- Don't think giving people information is enough; test their knowledge and give opportunities to practice skills that need to be "acted out"

Don't Start People at Zero

Competence is fragile, and it's generally better to show someone as already having momentum. Starting someone's progress bar partially filled is a good way to encourage retention (this is called "the endowed progress effect").
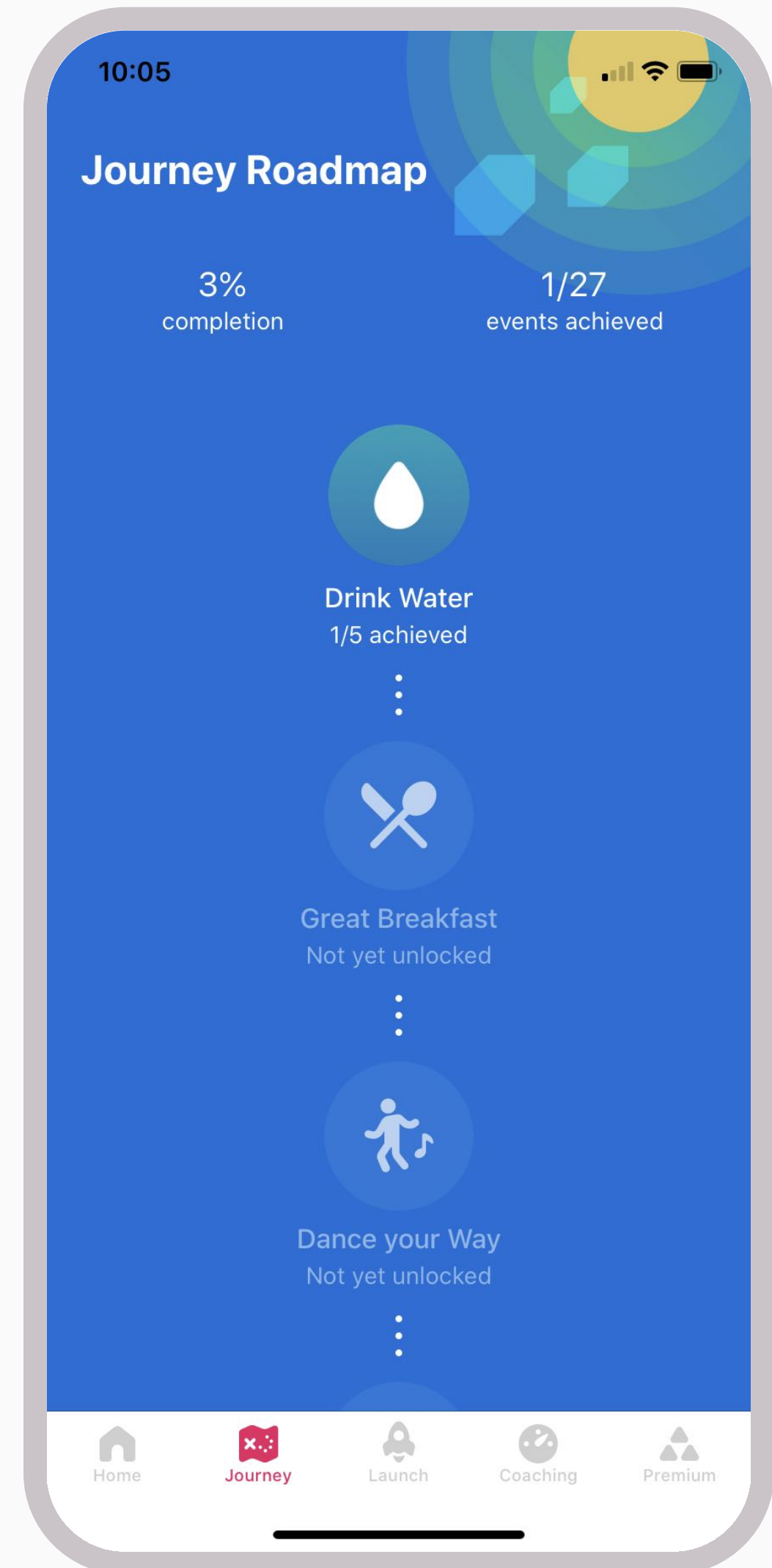
When Progress Is Demotivating

Almond encourages carbon offsetting by selling credits and finding climate-friendly purchases.

The app counts minor behaviors like commuting by foot toward the user's total carbon offset goal, even if they haven't bought credits. Often, this is a good idea, but if the amount is infinitesmally low, it could backfire.

It's unclear if showing 0.09% progress is helpful or harmful in this case. They were at least clever enough to visually show much more than a tenth of a percent fill on the progress bar.
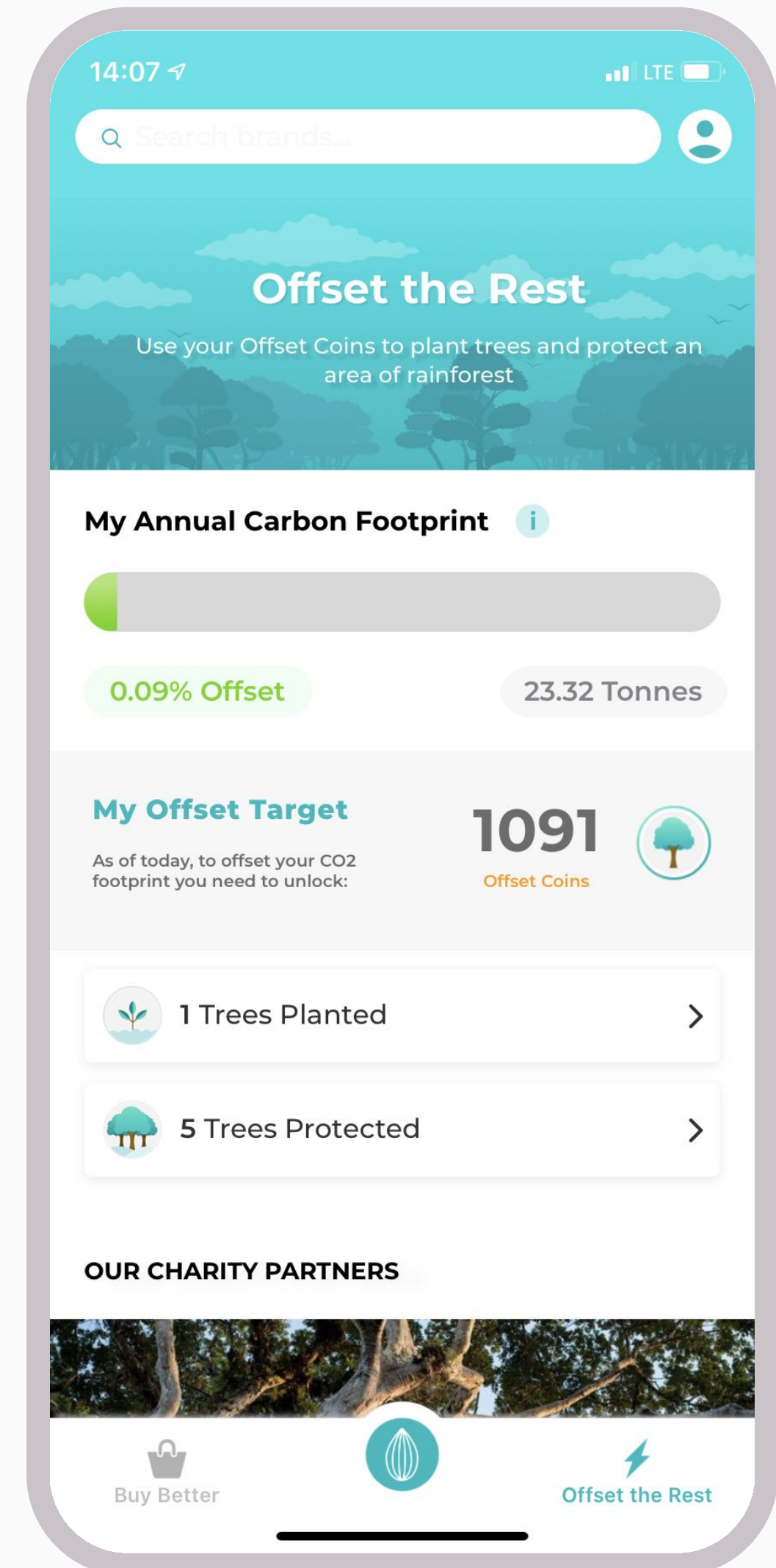
Be Careful With Streaks

People hate breaking streaks, as it's evidence that threatens competence. It's often easier to stop engaging than build a new streak.

Consider:

● Minimizing or hiding information about a broken streak, even if framed as a high score

● Enabling people to do something extra to restore their streak (e.g. an additional exercise)

● Filling data from empty days (e.g. if a pedometer app is missing a day, use the average from that week and mark it as an estimate)
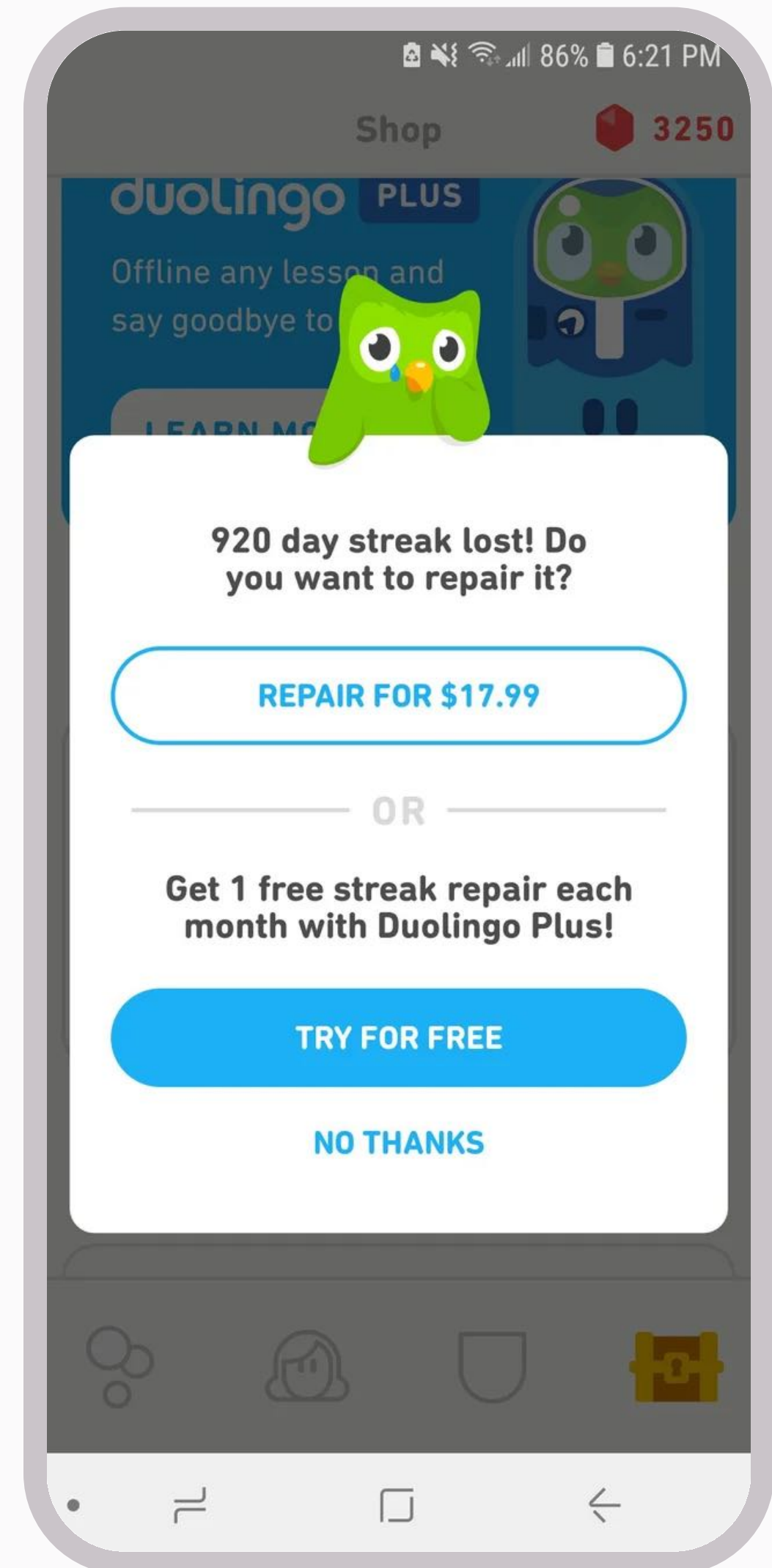
Deep Dive: Relatedness

Here, we'll cover:

• Real product examples of designing for belonging

• Dos and don'ts for using relatedness as a motivator

• Belonging gone wrong: how people tried and failed to motivate using relatedness

Peloton Uses Relatedness to Drive Retention

There's a reason most fitness experiences fail and Peloton hasn't: they use a wide variety of tools to motivate people to exercise.

The language within their experience encourages connectedness by emphasizing the relationship with instructors (the pronoun "my"), using group-oriented phrasing like "count me in," and even organizing fitness events around social groups and causes (e.g. racial justice).
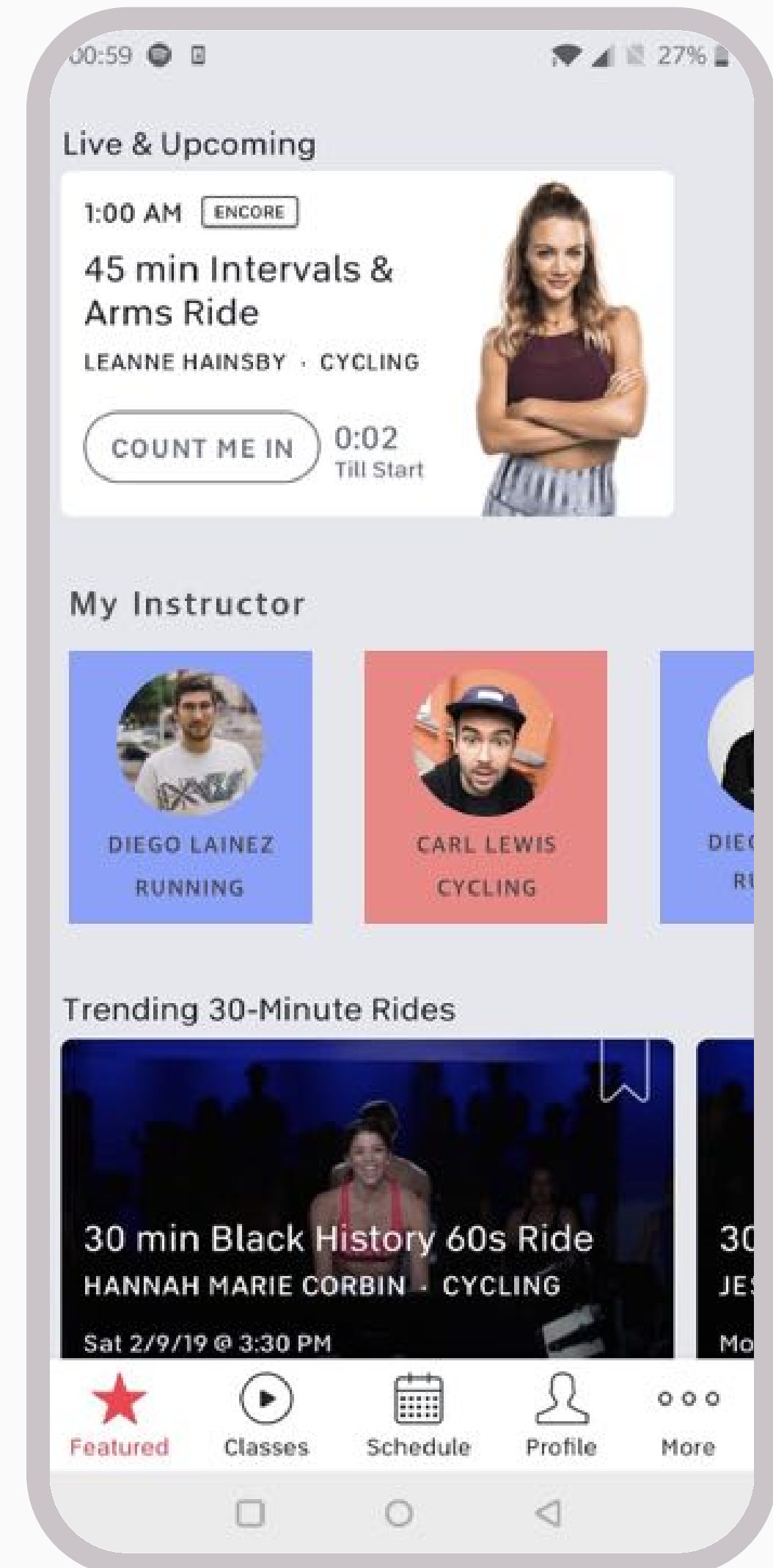
Using One Form of Motivation to Encourage Another

A 2013 study by Kullgren and colleagues found that group-based financial incentives were more effective than an individual incentives at promoting employee weight loss over 24 weeks.

The group prize may have encouraged more peer support than if people had to motivate themselves —especially since they were coworkers.

This is a good example of using a weaker influence on motivation (cash) to encourage a stronger, more long-lasting one (peer accountability).

Kullgren et al (2013). Individual vs. Group-Based Incentives for Weight Loss.

Communities Around Game Streamers

In 2017, Twitch reported its viewers watched an average of 95 minutes *per day*.

Part of the stickiness is from tools that aid the development of communities around creators. E.g., subscribing to a channel unlocks special emoji, usually related to inside jokes, which drives group cohesion. Creators also often enable viewers to influence gameplay choices.
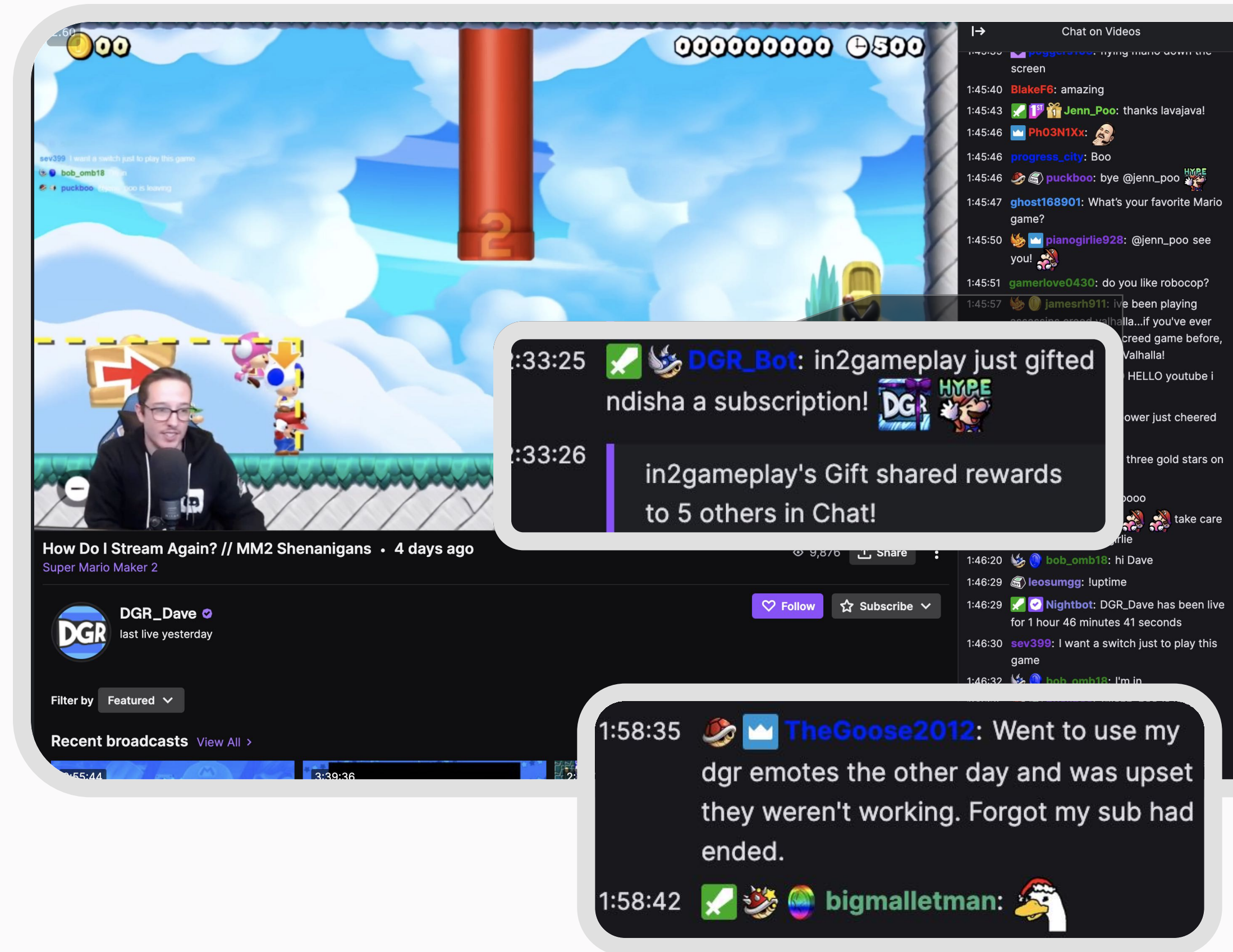
Relatedness: Best Practices

- Connect people to others they already know, are similar to, or share common interests with

- Aim for fewer, deeper connections (small groups are often more cohesive than larger ones)

- Help users break the ice, build rapport, and connect around shared values and interests

Relatedness: Things to Avoid

● Don't bolt on social experiences without strong connective tissue; mildly overlapping interests or trivial commonalities won't drive engagement

● Beware of the tumbleweed effect; invest in automated messages, moderation, discussion prompts, and other tools to kickstart interaction

● Don't forget rules: set and enforce methods that keep interactions positive, root out exclusion, and limit potential for bad actors

Social Isn't Automatic

Sanity & Self is a mental health app featuring community as one of its main tabs, but engagement seems extremely low.

Here are some potential reasons why:

● Lumping most or all users in a single giant community with no moderation

● Lack of information like age, location, or interests that humanizes the person on the other end

● Low-effort, automated usernames with no photos (if privacy is important, consider avatars)
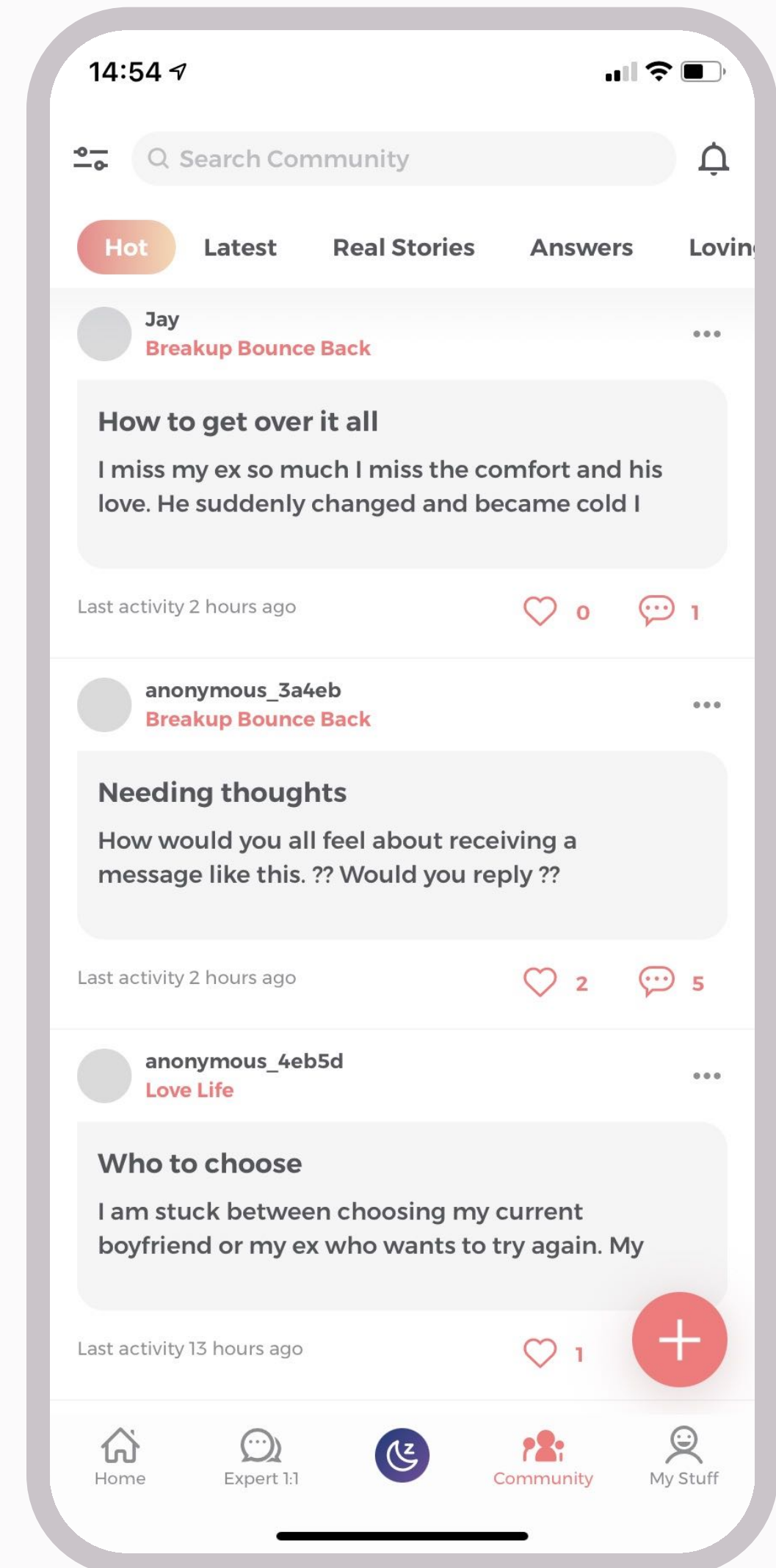
Common Misconceptions About Motivation

● There's a strict hierarchy of (non-physical) needs or motivations

● Some people have a higher motivation level than others, and this level won't change (and applies in all situations)

● Extrinsic motivation is bad; intrinsic motivation is the only "good kind" of motivation

Myth #1: There's a Hierarchy of Needs/Motivations

Aside from our basic physical needs, there's no hierarchy of psychological needs.

Autonomy, competence, and relatedness are all essential. We always need to meet these three needs, though maybe in different ways.

💡 Fun fact: Maslow never actually made a pyramid diagram, and he didn't believe needs were addressed in a sequential order.

Myth #2: People's Motivation Level is Pre-Set

Motivation is an active process influenced by contextual factors, and it's not stable over time.

We share the same basic psychological needs, but we aren't all motivated by the same exact things and prioritize these needs differently.

Myth #3: Extrinsic Means Bad

We're all motivated by extrinsic things: our peers' appreciation, collecting streaks, and certificates are all outside motivators.

There's nothing wrong with extrinsic motivation, especially if they ultimately support or contribute to building intrinsic motivation.

Extrinsic motivators can be helpful solutions for the early part of behavior change where intrinsic motivation takes more time to build.

Motivation Over Time (Illustrative)

People have various kinds of motivation that have different typical patterns over time.
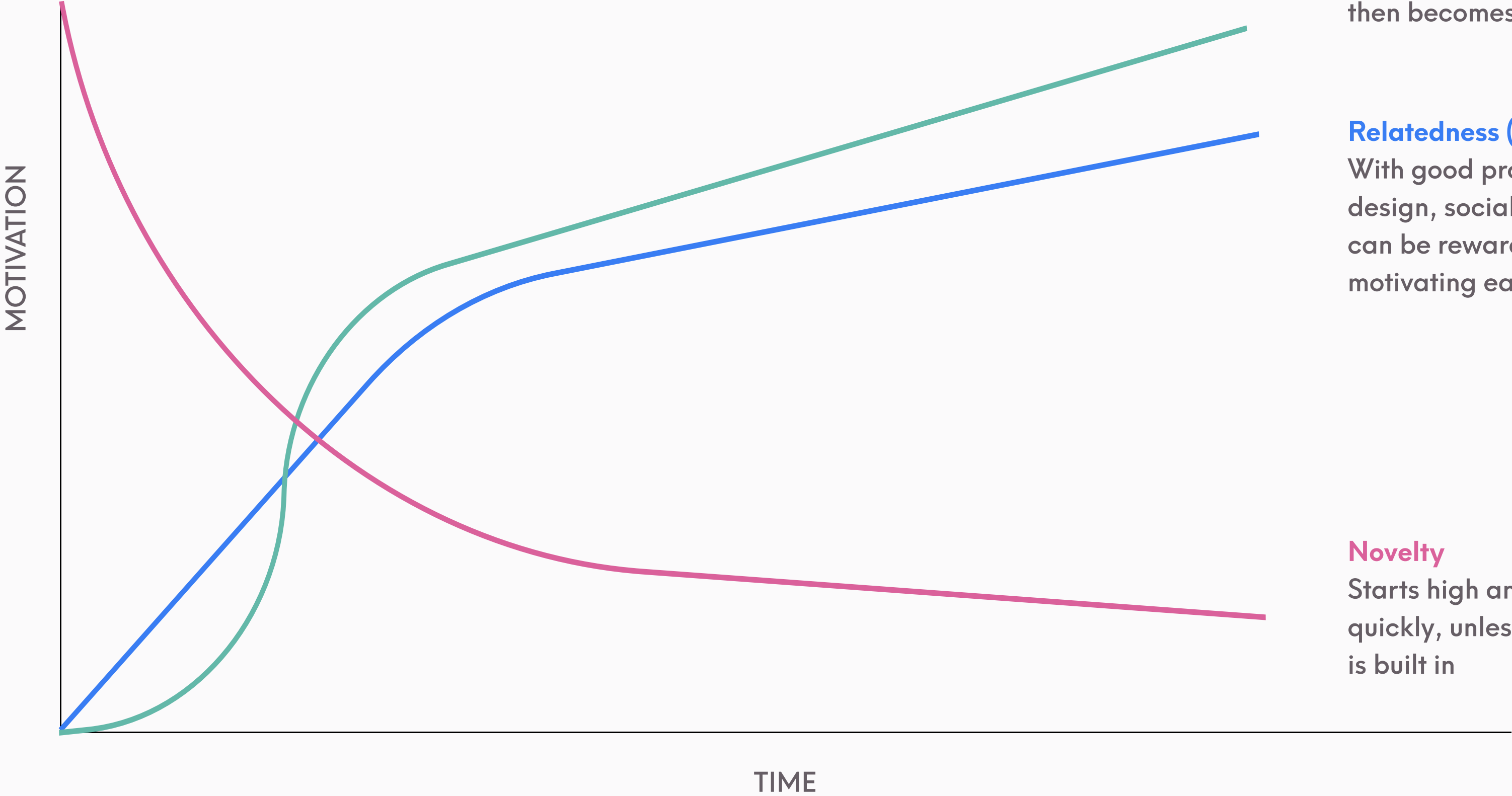
Competence
Typically starts very slow, has a rapid improvement period for beginners, and then becomes slow again

Relatedness (Social)
With good program design, social interactions can be rewarding and motivating early on

Novelty
Starts high and degrades quickly, unless variability is built in

MOTIVATION

TIME

Motivation Changes Over Time

Let's take motivation to attend medical school.

At first, someone might apply because:

• They want the status of being a doctor

• They want to make money

• They're interested in the topic

• They want to help people

• They want to make their parents happy

Motivation Can Strengthen and New Sources Can Be Unlocked

Once our doctor-to-be starts their medical degree, their motivations might change.

Now, they're fulfilled by:

- Mastery of their specialty

- Relationships with instructors, colleagues, and clinical staff, and patients

- Ability to make decisions that improve lives

Motivation Can Also Weaken. And It Might Not Be Sufficient to Face New Obstacles.

Years later, the doctor might feel demotivated:

• They sometimes fail to help patients even when trying their best and don't feel they're improving

• They follow a basic set of decision rules set by the hospital and feel like a machine

• Work can be lonely or competitive

To stay engaged, they needs a new challenge, a supportive network, and/or more control over their work choices.

Wrapping Up: Build Motivation with the Three Essentials

- Use autonomy to give people choice when it matters for them

- Use competence to inspire mastery and continuous improvement

- Use relatedness to create a sense of identity and lengthen engagement

Chosen Behaviour: Regularly Attending Gym Classes

	Acquisition: Considering joining the gym	Acquisition: Signing up to the gym	Acquisition: Attending first class	Exploration: Trying different classes	Exploration: Making friends at the classes	Exploration: Meeting the exercise instructor	Maintenance: Repeatedly attending classes	Maintenance: Meeting friends outside of class	Maintenance: Maintaining a gym routine
Competence: learning new skills and mastering tasks	🔴	🔴	🔴	🟢	🟡	🟢	🟢	🟡	🟡
Competence intervention ideas	*Give a simple pre-test*	*Offer classes for different skill levels*	*Teach variation of exercises*		*Offer peer coaching*				*Offer cross-training and advanced training*
Autonomy: feeling in control of behaviour, choices, & goals	🟢	🟢	🟢	🟢	🟡	🟡	🔴	🟡	🔴

Break Down the Motivational Journey With This Template

Deconstructing your behavior or experience over time as it relates to the 3 psychological needs of SDT can help you design around motivation.

Get the template

Learn More

Here are some links to dig further into SDT and its applications.

Why We Do What We Do by Edward Deci (Book)

Engaged: Designing for Behavior Change by Amy Bucher (Book)

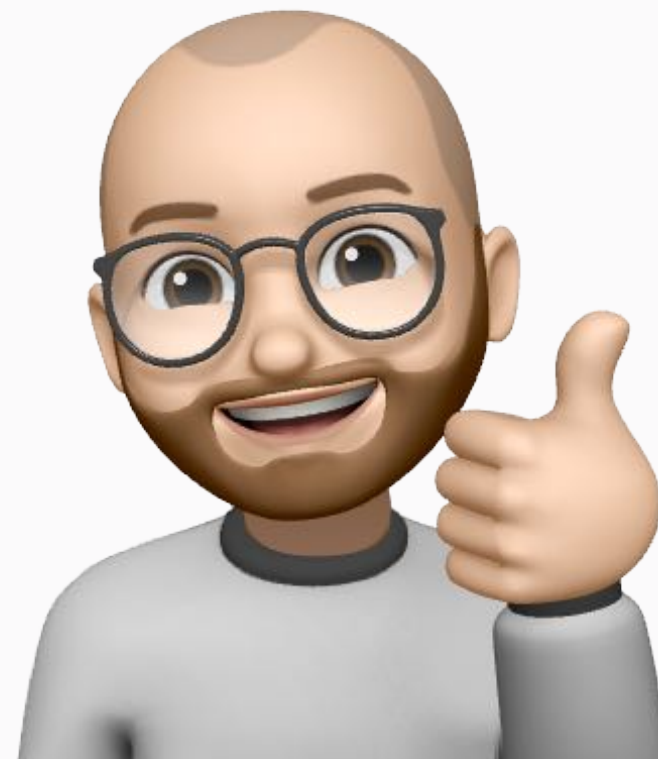**More Fun With Intrinsic Motivaton: The Example of Video Games** (Video)

A Dive Into Self-Determination Theory with Dr. Richard Ryan (Podcast)

Center for Self-Determination Theory (Website)

And that's all for this week. Motivate wisely!

Behavioral Science & Design Thinking