

Brevity

(or, Causal Effects of Brevity on Style and Success in Social Media, if you're not into the whole brevity thing)

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How your message is received...

...depends on how you say it

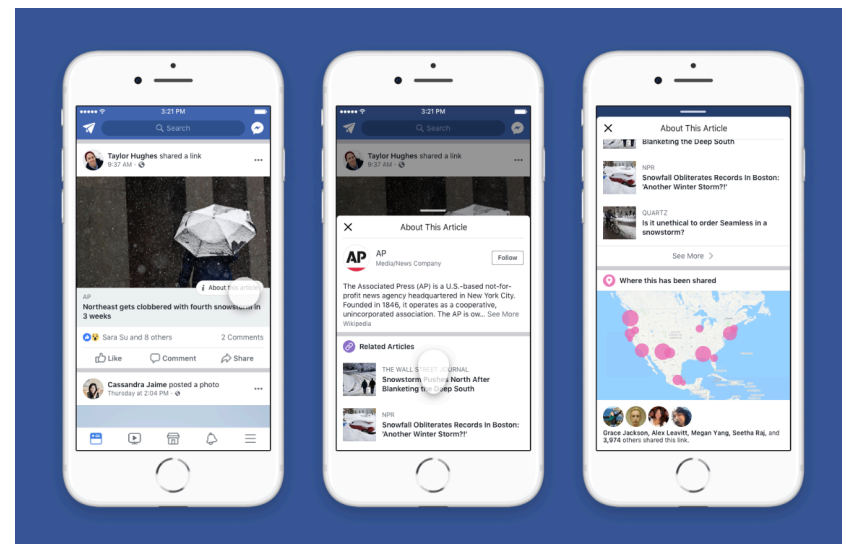
In particular, how **long** it is

“**Brevity is the soul of wit.**” —Shakespeare

“**Brevity is a virtue.**” —Conference paper instructions

“**The spice is in the concise.**” —German proverb

Online social platforms frequently promote brevity, either **explicitly** or **implicitly**



“The medium is the message.”

What are the causal effects of brevity on the success of social media content?

What are the linguistic traits of brevity?

When is brevity beneficial, and when is it not?

We study Twitter



The 280-character length constraint is one of its **signature traits**

Objective measures of **success**

Ideal online system to study the causal effects of brevity on success

Ideal experiment:

Take two copies of the **same message** written
under two **different length constraints** and
compare their success



vs.



?

Original tweet

250 characters

80–90% original length

70–80% original length

60–70% original length

50–60% original length

40–50% orig. length

30–40% orig. len.

20–30% orig.

10–20%

We ask crowd-workers to shorten an original tweet to 8 different shorter lengths (1 each, randomly chosen)

Then ask other crowd-workers to **compare each shortened version to the original** and indicate which is of **higher quality**

40–50% orig. length

VS.

250 characters

?

One nuance: we want to **isolate** the effects of **brevity** from the effects of **editing**

40–50% orig. length

VS.

250 characters

?

One nuance: we want to **isolate** the effects of **brevity** from the effects of **editing**

Solution: introduce a **baseline length constraint**, 1-5 characters shorter than the original, that **captures the effects of editing**

250 characters

VS.

~250 characters (edited)

?

Of course, crowd-workers aren't perfect.

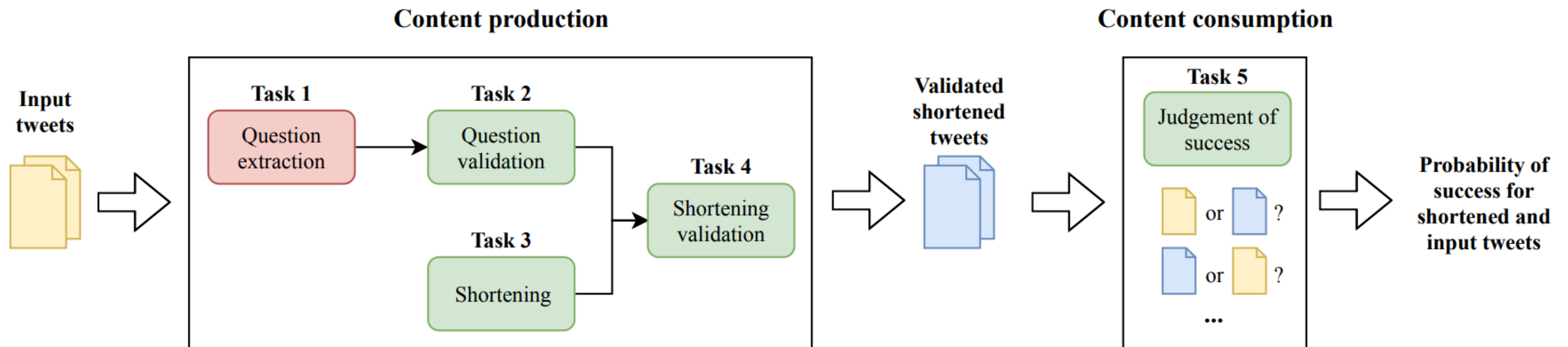
Our full experimental design is more sophisticated to ensure the highest quality possible

In particular, we want to ensure:

- ★ Shortened versions carry the same message
- ★ Crowd-workers faithfully report which version they prefer

Experimental Design

Solution: **comprehension questions**



Task 1: for each original tweet, **design comprehension questions** that can **only be answered** after reading the original tweet

Task 2: check that workers can answer the questions using the **original tweet**

Task 4: check that workers can answer the questions using **shortened versions**

Task 5: when voting, have workers answer the questions as an **attention check**

Example Baseline Shortening

| | |
|----------------|--|
| Original tweet | When we as Black American STOP apologizing for being Black. Stop assimilating to White culture and start respecting that it is Black culture that White People cling to, imitate and pattern , then an only then will we as Black American will be alright |
| Baseline tweet | When we as Black Americans STOP apologizing for being Black, stop assimilating to White culture, and start respecting that it is Black culture that White People cling to, imitate and pattern, then and only then will we as Black Americans be alright. |

Edits correct spelling, grammar, and punctuation

In this example, 78% of workers preferred the baseline over the original

On average, **baseline preferred by 65%** of workers

Example Tweet and Shortened Versions

| | | |
|----------------------------|--|------------------|
| Input tweet | And when I finally shared that secret, that was when I was able to start healing. Don't get me wrong, addiction is always that, it's not always easy. However, whenever I feel weak, I put on Buffy. There's so much that I can connect with in that show. | |
| Extracted questions | When was the person able to start healing? (Once they shared the secret / Once they forgot) Is addiction easy according to the tweet? (Yes / No) Why do they watch Buffy? (They can connect with that show / It's about addiction) | |
| Condition | Shortened tweet | pr. succ. |
| Baseline | And when I finally shared that secret, that was when I was able to start healing. Don't get me wrong, addiction is always that, it's not always easy. However, whenever I feel weak, I put on Buffy. There's so much I can connect with in that show. | 0.46 |
| 80-90% | Don't misunderstand me, addiction is never easy. However, when I finally shared that secret, I was able to start healing. Whenever I feel weak, I put on Buffy. There's so much that I can connect with in that show. | 0.75 |
| 70-80% | When I shared that secret, I was able to start to heal. addiction is not always easy. However, whenever I feel weak, I put on Buffy. There's so much that I can connect with in that show. | 0.69 |
| 60-70% | When I shared that secret, I started healing. Don't get me wrong, it's not always easy. When I feel weak, I put on Buffy. So much that I connect with in that show | 0.72 |
| 50-60% | When I shared that secret I could start healing. Addiction is rarely easy. When I feel weak I put on Buffy, I really connect to that show. | 0.63 |
| 40-50% | Addiction is not always easy. However, whenever I feel weak, I put on Buffy. Because I can connect with that show. | 0.39 |
| 30-40% | Admitting addiction started my healing. And when really bad, watching Buffy is a blessing! | 0.54 |
| 20-30% | Sharing my secret healed me. I can connect with a lot on Buffy. | 0.32 |
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
















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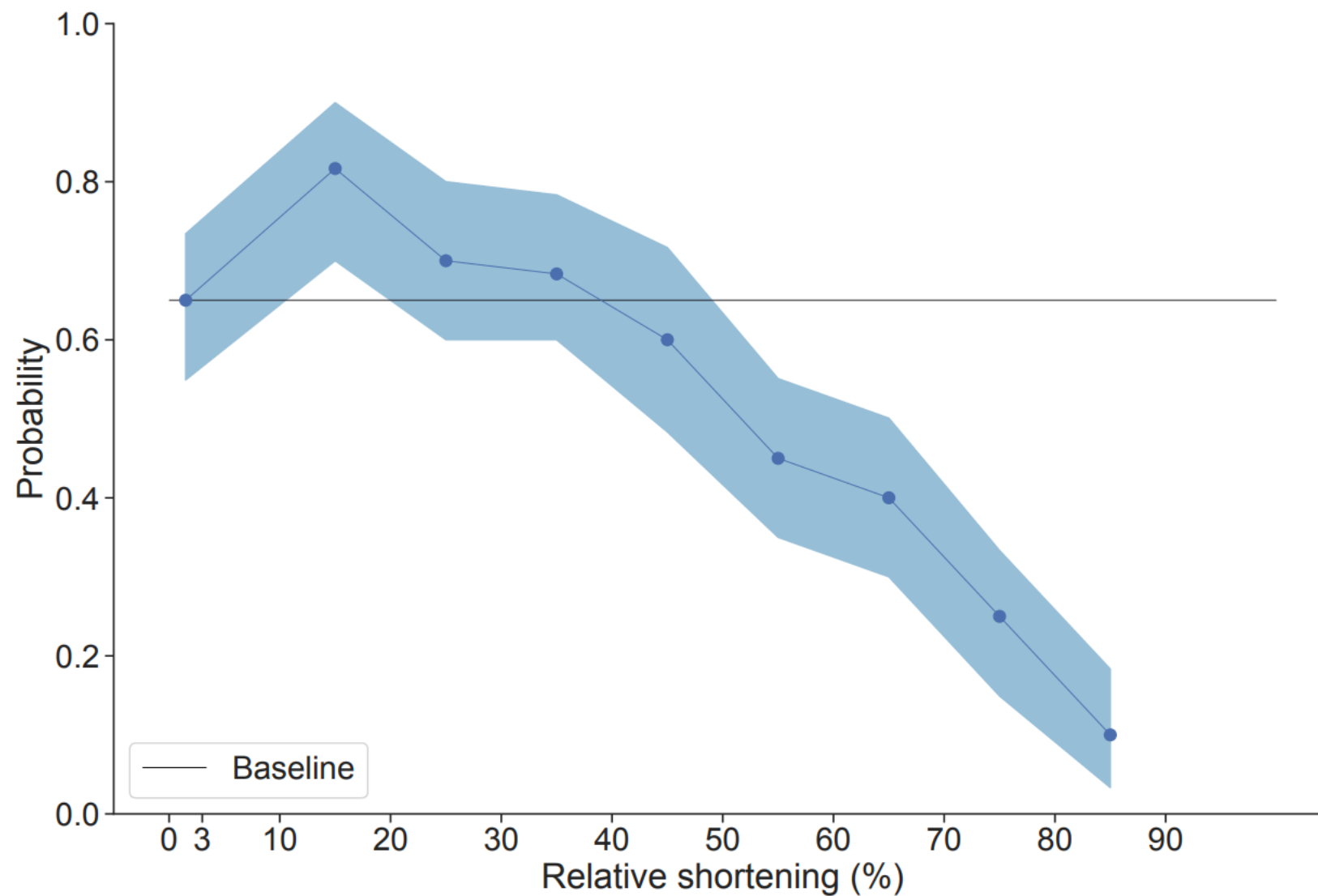
Experiment Details

We performed our **full experimental pipeline** on **60 original tweets**

Full factorial design: **all 60 original tweets** shortened to **all 9 lengths**

Extensive voting: **every comparison** (original vs. shortened version)
judged by **50 separate workers** (27,000 binary votes total)

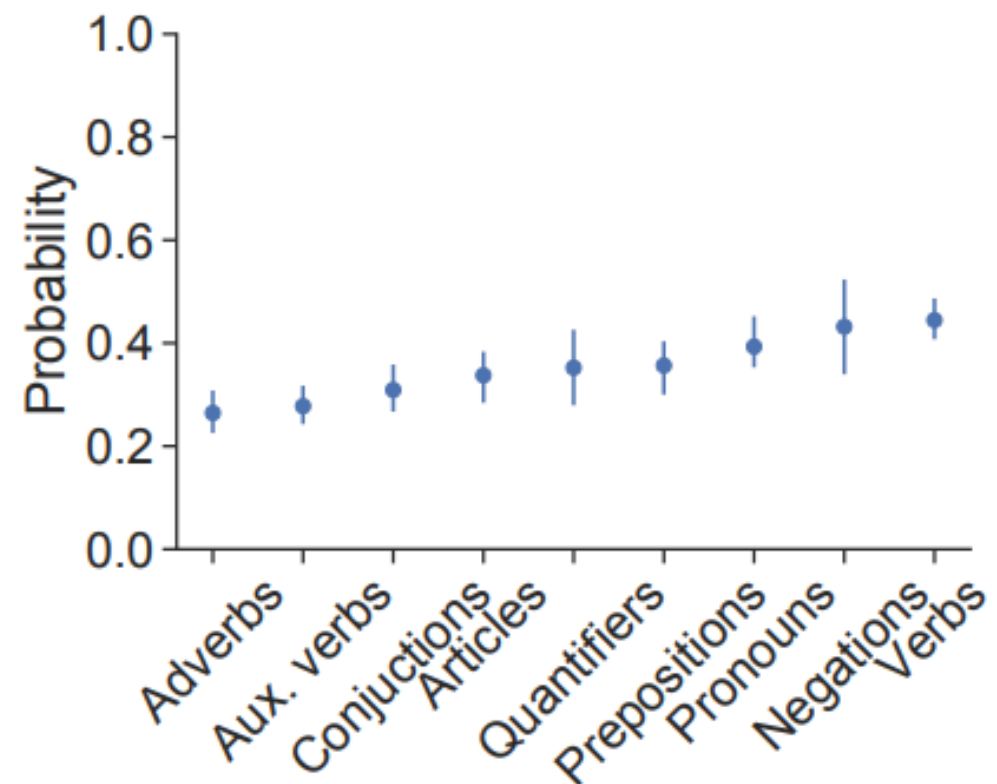
Brevity and Success in Social Media



Probability of shortened version being preferred over the edited original
as a function of length

Linguistic Traits of Brevity

Parts of speech that convey **essential information** (verbs, negations) are **most frequently kept**



Tokens carrying **negative affect** more likely to be preserved

| Type of affect | Probability of being preserved |
|------------------|--------------------------------|
| Positive emotion | 0.54 |
| Negative emotion | 0.64 |
| Anger | 0.65 |
| Sadness | 0.63 |
| Anxiety | 0.67 |

What's the Right Kind of Brevity?

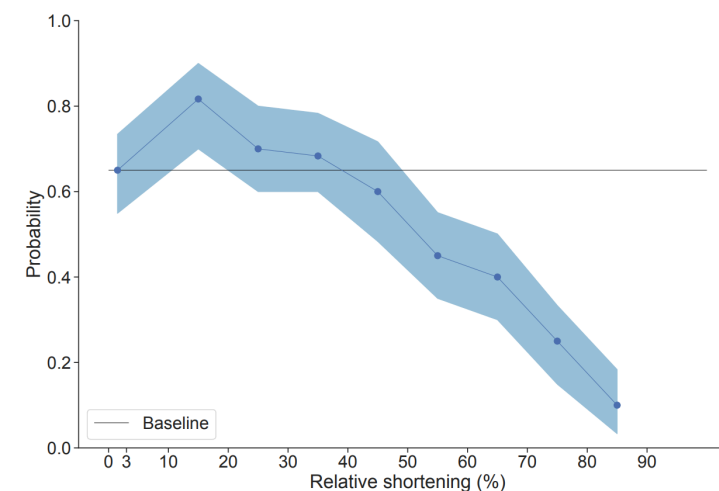
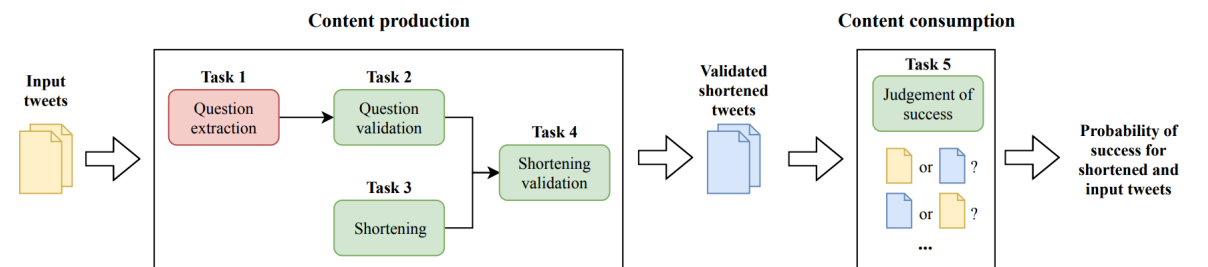
| Effective strategies | | | | |
|------------------------|---------|----------------------|-----------------|-----------------|
| Token | N edits | N successful edits | Effect strength | <i>p</i> -value |
| Deleting | | | | |
| any | 36 | 24 | 3.71% | 0.02 |
| few | 11 | 11 | 17.06% | 0.0005 |
| more | 28 | 19 | 6.84% | 0.03 |
| a | 285 | 161 | 2.92% | 0.005 |
| therefore | 23 | 17 | 6.74% | 0.02 |
| so | 122 | 72 | 3.03% | 0.02 |
| Inserting | | | | |
| , | 139 | 81 | 4.18% | 0.03 |
| . | 502 | 277 | 1.23% | 0.01 |
| Ineffective strategies | | | | |
| Token | N edits | N unsuccessful edits | Effect strength | <i>p</i> -value |
| Deleting | | | | |
| hashtags | 71 | 53 | 7.51% | 0.00002 |
| ? | 34 | 25 | 9.03% | 0.005 |
| ! | 88 | 61 | 7.58% | 0.0002 |

In summary

We performed our a **full-factorial experiment** to understand the **causal effects of brevity**

Even 250-character tweets can be shortened up to 40% with no degradation in quality, and can be improved by cutting ~15%

Strict brevity constraints give us **just the facts** and **disproportionately preserve negative emotions**



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Thanks!

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