

Democratizing Organizational Surveys with Quarto and Shiny



Brennan Antone

Assistant Research Professor
Information Science, Communication
Cornell University

posit
conf (2024)





Book

Flight Pack

Roundtrip

From*
Ithaca ITH

Dates*
Oct 11– Oct 13

Economy

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United Club

X

UNITED

United.com made it easy to edit my traveler information.

Extremely agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Extremely disagree

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TAKE YOUR PICK

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POV: You're booking a flight to Seattle



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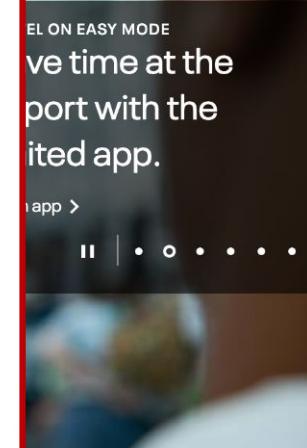
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POV: You're booking a flight to Seattle



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UNITED

We thank you for your time spent taking this survey.
Your response has been recorded.

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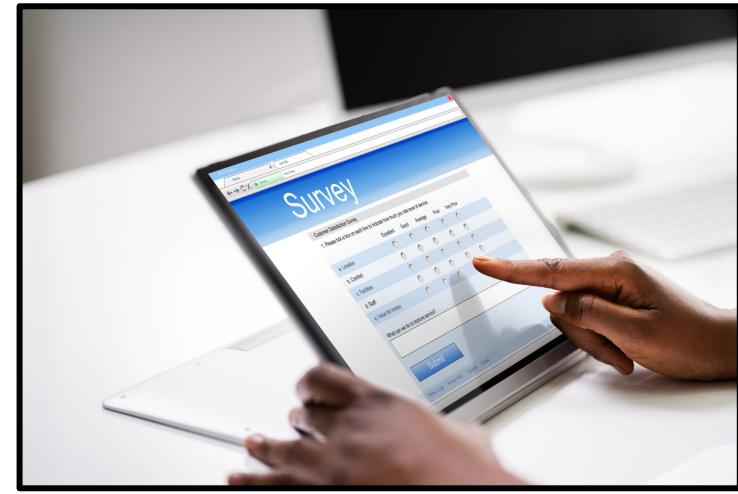


POV: You're booking a flight to Seattle

**What is going on
in my team or organization?**

**What is going on wrong
in my team or organization?**

In organizations:



Participant Pain Points

Underlying
Ethical
Issues



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Participant Pain Points



Time / Motivation

Underlying
**Ethical
Issues**

Coercion

(Response rate isn't
everything)



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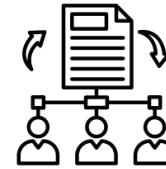
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Participant Pain Points



**Time /
Motivation**



**Privacy /
Trust**

Underlying
**Ethical
Issues**

Coercion.

Potential harm.

(Response quality
suffers.)



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Participant Pain Points

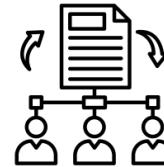


Time / Motivation

Underlying Ethical Issues

Coercion.

(Response quality suffers.)



Privacy / Trust



Self-Presentation / Impact



Orgs. become more and more desperate



A million emails +
deadlines

Forced responses



Everything is connected ...

**Worse Data
Quality**

**Hard to
Implement
Organizational
Change**



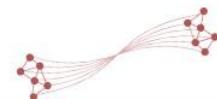
**Bad Participant
Experience**

**Ethical
Dilemmas**



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How can we use **tools** to address pain points in data collection?



My own research ...

“What is going on in my team or organization?”



Academic



Y. Jasmine
Wu



**Neelam
Modi**



Vsevolod
Suschevskiy



Noshir
Contractor

Northwestern
University



Whole Network > The Sums of Its Parts



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“What is going on in my team or organization?”

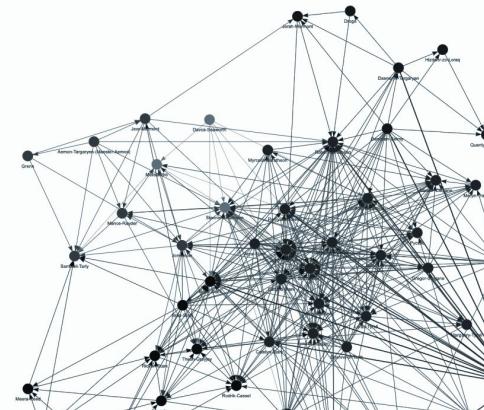


Academic



Manager

“Who do you go to for advice?”



We only act on what we can see.

(data quality?)

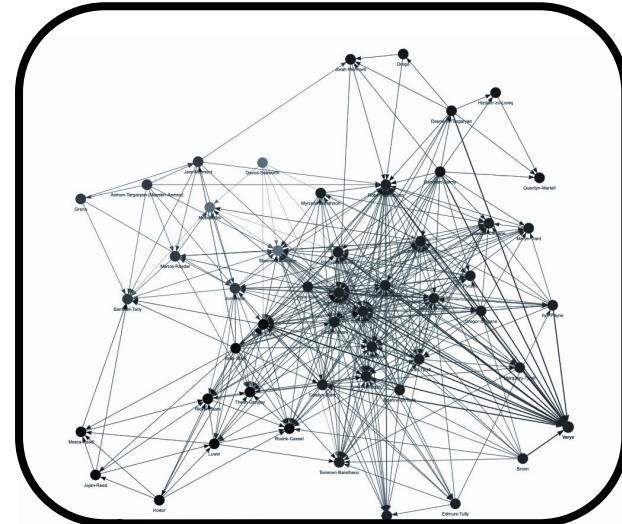




Academic



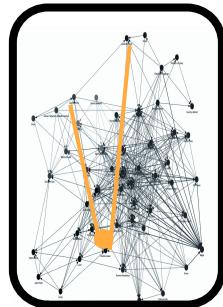
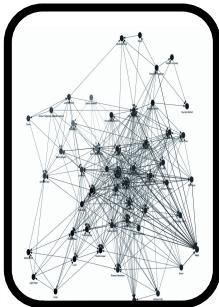
Manager



We only act on what we can see.



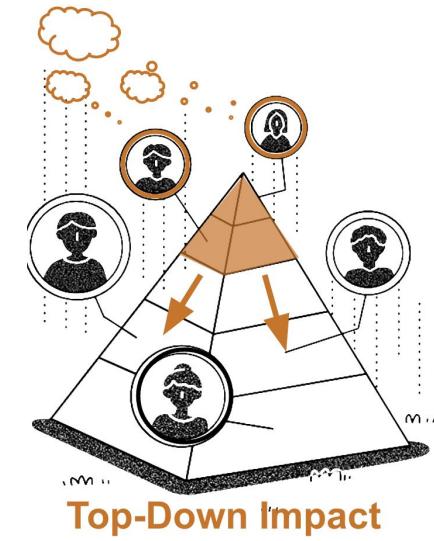
Before:



Academic



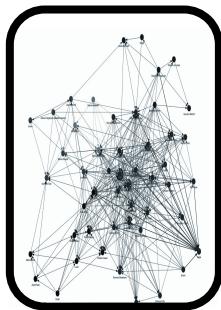
Manager



Changes made on “global” picture.



After:



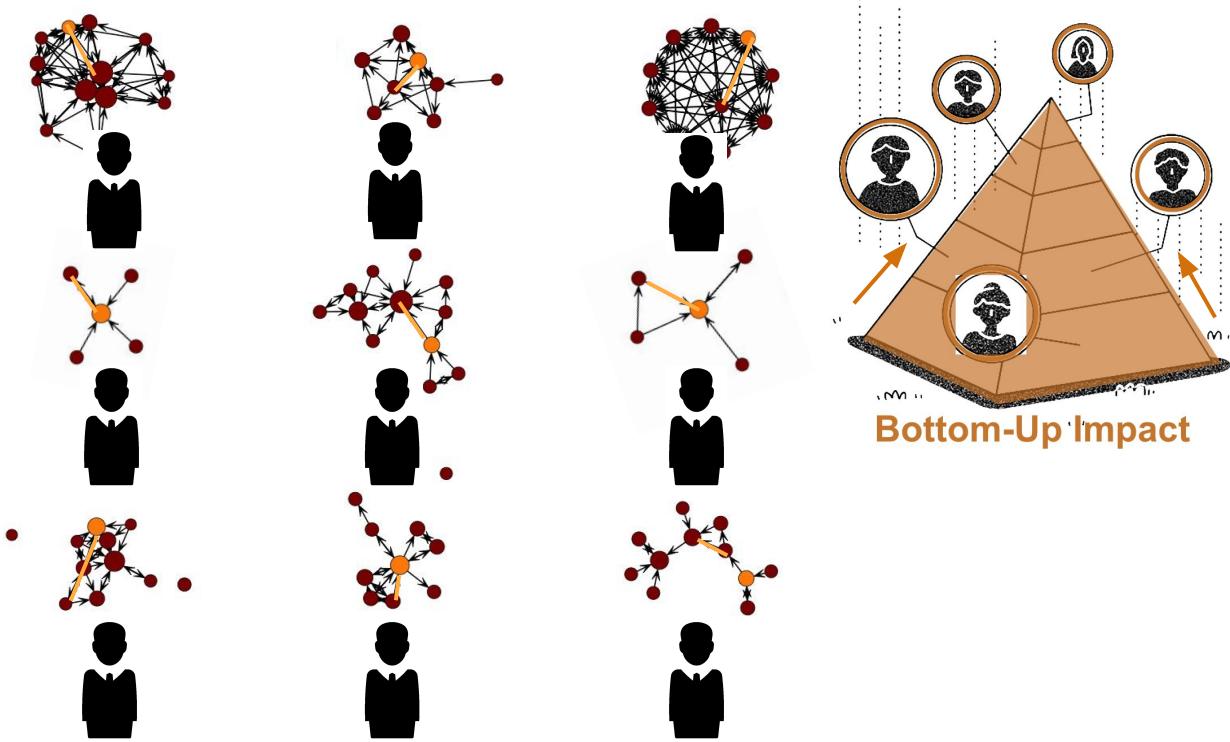
?



Academic



Manager

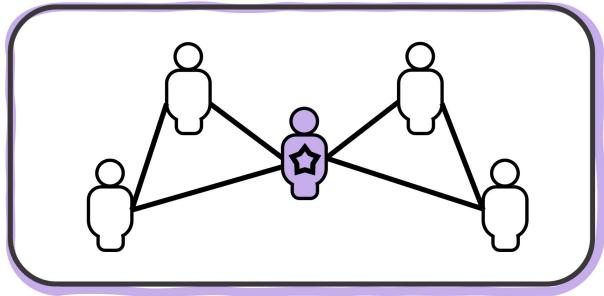


Empower everyone with information to make changes.

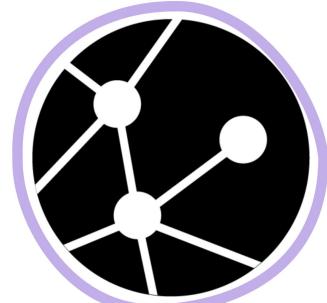


Solution 1 - Personalized Reports

Your Responses



Personalized Feedback



“How should I build new connections and better leverage existing connections?”

Ideation Ability

How is it measured? What does it mean for you? How do you increase?

Your score on Ideation:

You: 21.4
You: 21.4
P.D.: 56.3
Everyone: 49.8

Social Resources Others Provide

It's important to leverage your resources from other people. In this section, we will follow up on the five key social resources below and list five key social resources for each.

- Trust
- Advice
- Friendship
- Energy
- Sense of Purpose

Resource Availability:

Trust	Advice	Friendship	Energy	Sense of Purpose
20	100	0	60	20

About the Table

This table describes who provides each resource to you. The number “1” indicates the person named in that row provides the resource listed in the column. Otherwise, a “0” indicates they do not.

The bottom-most row, “Everyone”, indicates the average score for all individuals in your network. A high score (over 200) indicates that many individuals in your network provide resources to you, while a low score (near 0) indicates you receive that resource from only a few individuals. Having each of these network resources available can have a significant impact on your ability to succeed effectively.

It is important to consider how relevant an item is specific to you. The top-right column, “Value Based on Personal Influence”, provides this information.

Reflection

As you review the previous diagram, consider the following questions:

- Who are my most direct connections, and who are my closest connections?
- Who are the most highly connected individuals in the network that they someone who might be useful for you to leverage? Or are they someone who might be over-relied upon?
- Is there a bridge or a clique?

We will break down some quantitative properties of these networks under the “Network Capabilities” tab.

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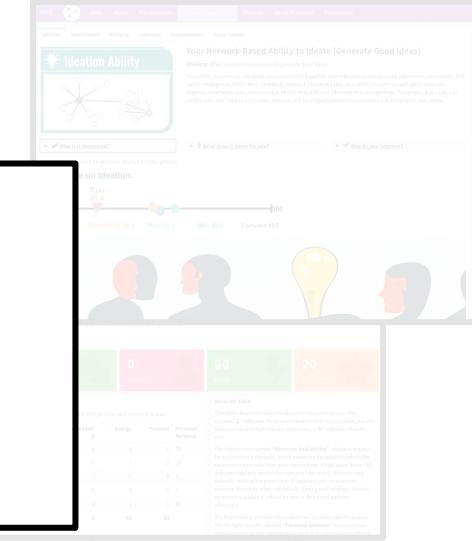
Solution 1 - Personalized Reports

Your
Responses

Personalized
Feedback

Moving from “Survey” to something framed more like a “Professional Development” workshop

leverage existing connections?”





Personal Network Report

In the following questions, we will ask you about your **current social relationships** with other members of your network. For each relationship, please mark everyone with whom you hold the relationship **today**.

You may leave any items blank if you do not hold this relationship with anyone.

Who would you trust to keep in confidence your concerns about a work-related issue?

Please select all that apply.

- | | |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> Alice | <input type="checkbox"/> Carol |
| <input type="checkbox"/> Bob | <input type="checkbox"/> Diane |

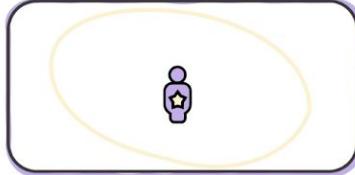
Who would you go to for help or advice at work? This could include work in any professional context, including voluntary work or class-related work.

Who would you go to for help or advice at work?

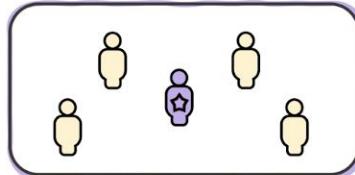
Please select all that apply.

- | | |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> Alice | <input type="checkbox"/> Carol |
| <input type="checkbox"/> Bob | <input type="checkbox"/> Diane |

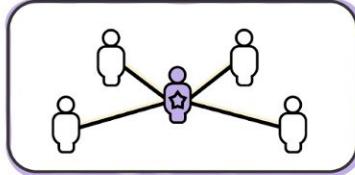
(1) Choose a context



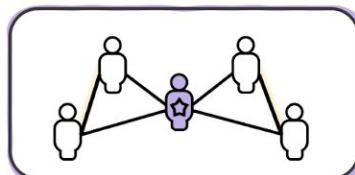
(2) Identify key people



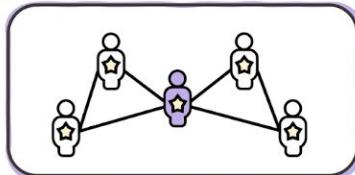
(3) Describe *your* network connections



(4) Describe *their* network connections



(5) Detail members of your network



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Solution 1 - Personalized Reports

In the following questions, we will ask you about your current social relationships with other members of your network. For each relationship, please mark everyone with whom you feel you have the most meaningful connections.

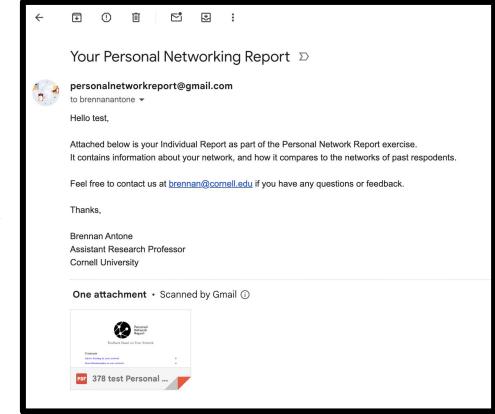
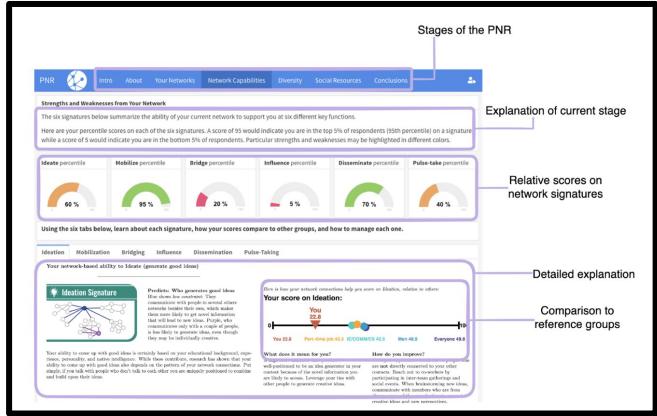
You may leave any items blank if you do not hold this relationship with anyone.

Who would you trust to keep in confidence your concerns about a work-related issue?
Please select all that apply:

Alice Carol Dave

Who would you go to for help or advice at work? This could include work in any professional context, including voluntary work or class-related work.
Please select all that apply:

Alice Carol Dave



qualtrics^{XM}
API

pdf Reports in Markdown



Email Distribution

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Results

Participants better understood their networks and were able to **make changes.**

Improved data quality for research.

Results

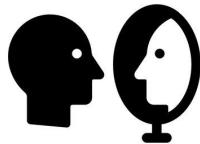
Why did it work?



Met participants
with value add.



Gave tools to
understand
data.



Let participants
reflect.



Bring in their own
context.

"Being new to [company], I have been learning and observing who is friends with whom and how the information is being passed among different individuals. Such insight displayed visually promotes compelling thoughts. **There are three firm friends' groups within my network. While I am the "connector" between two of these groups, the third is very isolated.** The two friends' groups that I am connecting with are crucial to a successful project and the team's work results that I am leading. But unfortunately, I have not yet created a "friendly" relationship with the isolated friend's group. Being a connector between two different friend groups has both personal and professional intentions and benefits. **But knowing that [xxx] from this isolated friend group is an influential decision-maker for my team, I need to develop a strategic plan** on how to connect and become friends with her and her friends to maximize professional outcomes."

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Solution 2 - Interactivity

ALL-IN-ONE Web App

Immediacy matters as well.

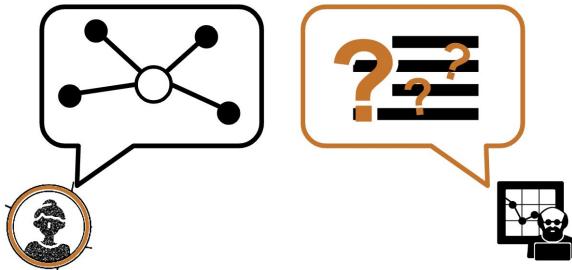
Adjust / change / explore their responses.



Takeaways

Rethink what we do with existing data tools through the lens of **empowerment** and **user experience**.

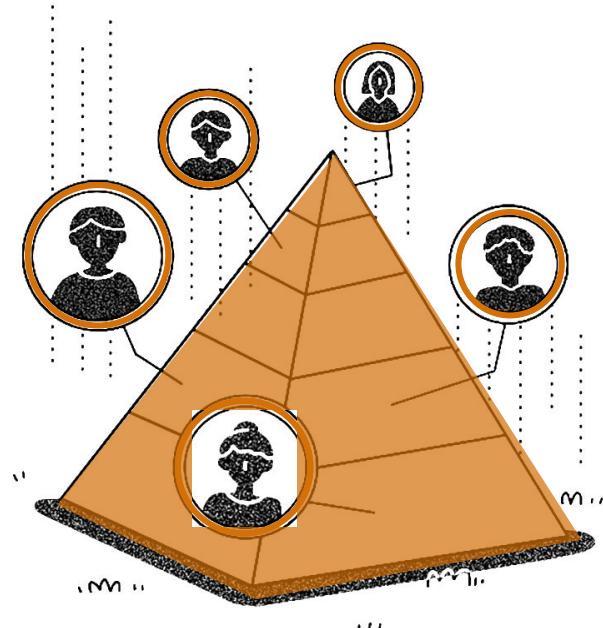
Blur the divide between surveys, analysis, and interventions.

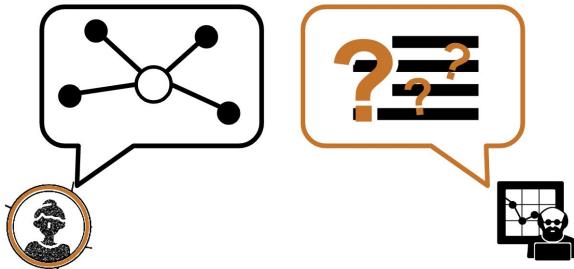


Takeaways

Reconsider **power** and our role as researchers when conducting network analysis.

Implications for **data quality, privacy, organizational change / interventions, and teaching / learning.**





Thanks!



wba26@cornell.edu
brennanantone.com



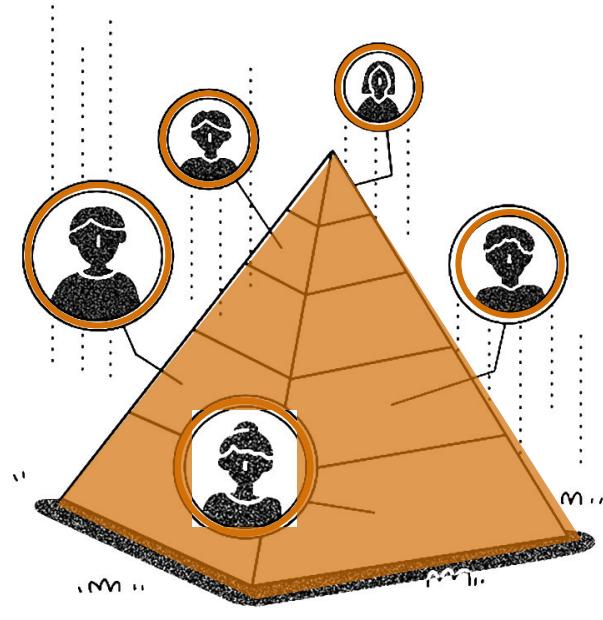
[@brennan_antone](https://twitter.com/brennan_antone)



linkedin.com/in/brennan-antone/

Contact me if interested in our tool.

I'm on the job market for Fall 2025.





Personal Network Report

Cornell University

Northwestern
University

Thanks!

PNR is available as a tool for
organizational / community research,
blending data collection with interventions.

It is also available for use as a **teaching
exercise / professional workshop**.

We're looking for new users and
organizations to develop features for!

Here's the mindset a
lot of **data scientists**
have ...



*All
together*



What's the **alternative** when we
need **human feedback**?