

# USING PARADATA TO EXPLORE USERS PATHWAYS THROUGH WEB SURVEYS

- ❑ The main objective of exploring pathways is to create better measures and models that account for the nuance of user experience.
- ❑ Before we can create measures we need to explore the data to understand what patterns of behavior emerge.
- ❑ This is the first step of an exploratory project that examines users backing behavior

**Data:**  
Randomly selected cases from American Community Survey web paradata collected during 2018- Around 100 cases

**Methods:**  
Using visualization of data and descriptions of pathways, examine cases for patterns in backing behavior.

Characteristics of sampled cases	Percent
Completed and submitted	69%
Completed but did not submit	17%
Did not complete	7%
Submitted with high non-response	7%
Backed up in instrument	75%
Had error trigger	47%
Used help hyperlinks	43%
Used review	14%
One person household	19%
Two person household	31%
Three to five person hh	46%
Six or more person hh	4%
White non-Hispanic	73%
Hispanic	11%
Black, Asian or other	11%
Missing race	5%
Reference person over 60	23%
Reference person 40 to 60	43%
Reference person under 40	28%
Reference person age unknown	6%

## Limitations

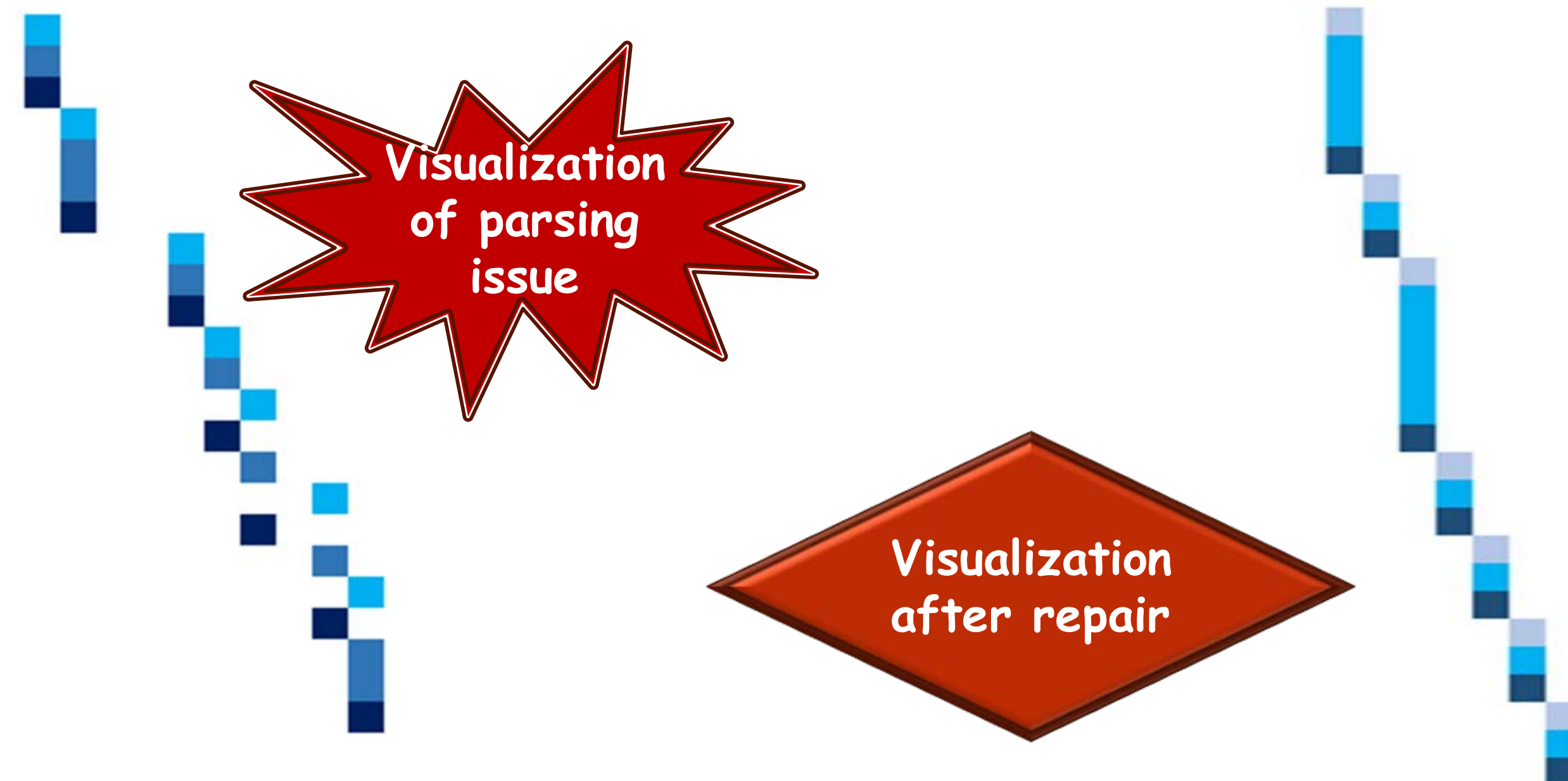
- Limited numbers of cases
- looks at one set of patterns not full pathway
- Data issues that may not be user error.

## Future directions

- Expand cases to set thresholds
- Explore and visualize other patterns like errors and logouts
- Analyze whole paths
- Create Sankey diagrams Create descriptive statistics to use as a diagnostic tools
- Use qualitative data to train machine learning models or explore other ways to model data

Data issues that may cause problems with the analysis of backing or other behaviors?

When respondents do more than one action in the same second the process used to structure paradata creates an artificial pattern that looks like backing. Correcting these patterns manually is time consuming and not practical for large surveys



Identifying parsing issues that appear as backing in aggregate data

We can use time stamps to identify these cases

Potential solutions do we have to fix parsing issues

- Re-label actions so that they are ordered in the more traditional order of actions
- Drop actions with the same timestamp from analysis

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# 5 Common Backing Patterns in Web Surveys

**Key**  
 Enter new page  
 Answer question  
 Next question  
 Back up  
 Help

## Speeding



**How Frequent is this?**  
 37 percent of users who backed had this pattern

**What does it indicate?**

- User inattentive of hurrying
- Happens throughout instrument
- Often results in multiple reporting errors
- Addressing this may address other patterns

**How to identify?**

- Backing a single question with an answer change

**Potential solution?**

- Verify information by section or at the end
- Add soft checks key items

## Questioning



**How Frequent is this?**  
 33 percent of users who backed had this pattern

**What does it indicate?**

- Often occurs in a set of related questions
- May be related to speeding
- Possibly having questions on separate pages makes them more difficult

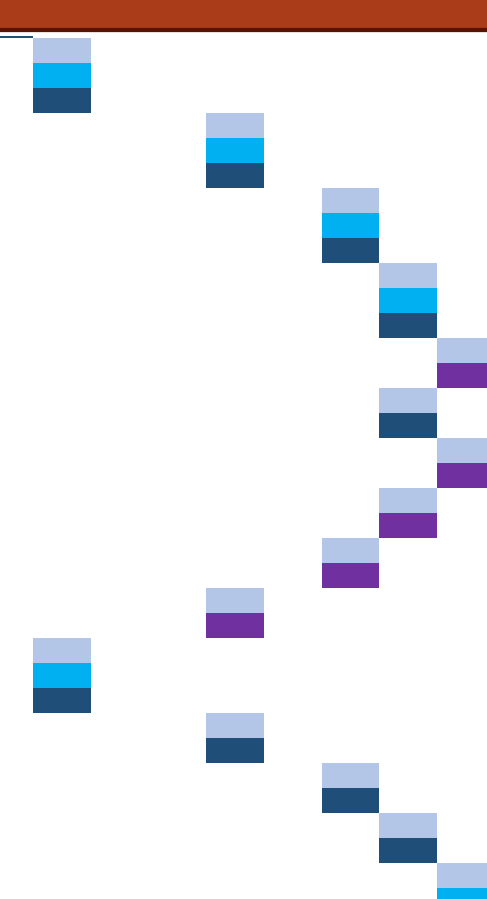
**How to identify?**

- Backing results in answer change and path changes to a different question

**Potential solution?**

- Examine question wording for issues of clarity
- Put related questions on the same page

## Revisiting



**How Frequent is this?**  
 48 percent of users who backed had this pattern

**What does it indicate?**

- Related questions may remind user of answer to previous question
- User may find better place for answer in later questions
- May be related to speeding

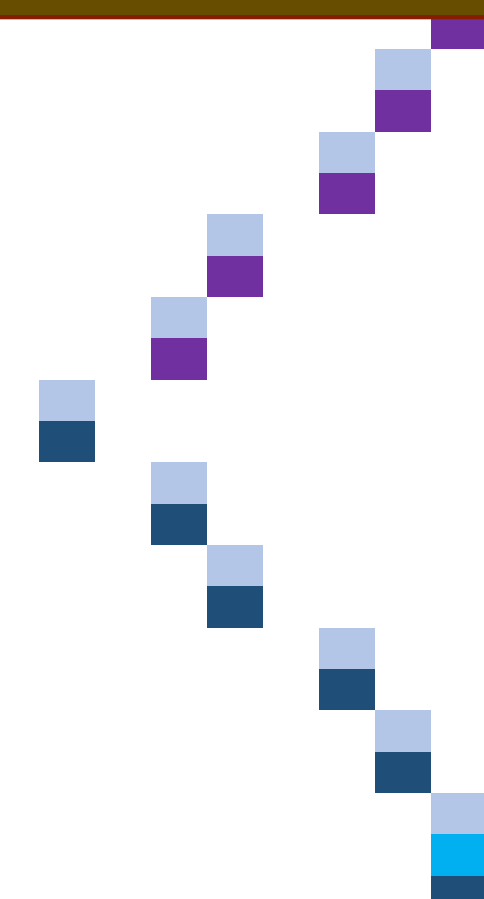
**How to identify?**

- Backing multiple pages resulting in a field change

**Potential solution?**

- Put related questions on the same page
- Information that identifies all questions in section

## Verifying



**How Frequent is this?**  
 27 percent of users who backed had this pattern

**What does it indicate?**

- Occurs when a new topic is unrelated to the previous question
- Users sometimes check help files when they return to a question

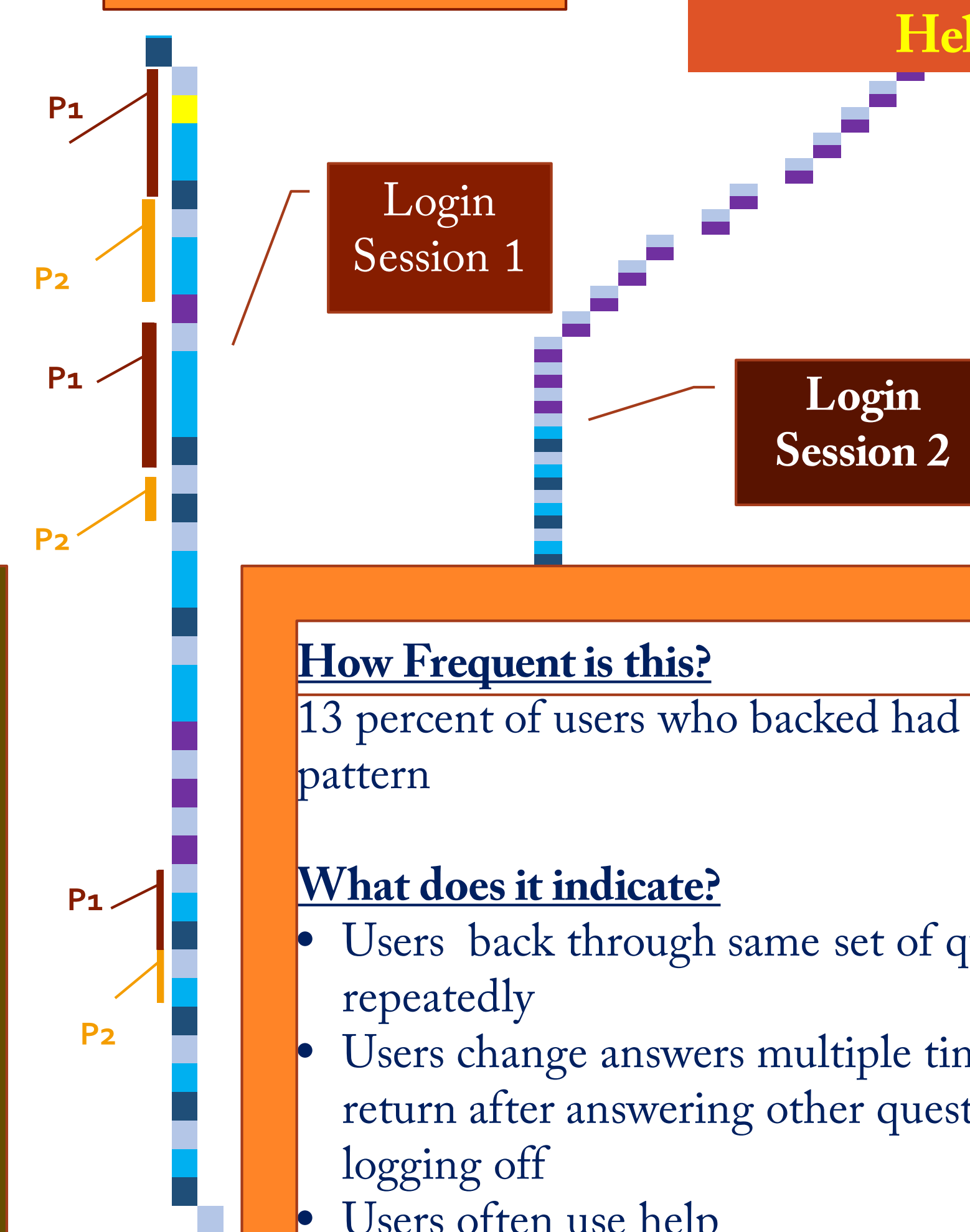
**How to identify?**

- Backing occurred but a field change is not present

**Potential solution?**

- Examine question wording, answer categories for complexity.
- Clear transitions between topics

## Looping



**How Frequent is this?**  
 13 percent of users who backed had this pattern

**What does it indicate?**

- Users back through same set of questions repeatedly
- Users change answers multiple times, or return after answering other questions or logging off
- Users often use help
- Pattern most likely to result in multiple sessions or breakoffs

**How to identify?**

- Identify backing as in revisiting or verifying and look for multiple times at same page

**Potential solution?**

- Examine answer choices for potential additional answers.
- Clarify help to address questions.