

“We Feel Like We’re Winging It”

A Study on Navigating Open-Source Dependency Abandonment



Courtney Miller, Bogdan Vasilescu, Christian Kästner

**open-source
software is the
infrastructure that
our digital lives
run on**



despite the wide-spread
reliance on these
projects, sometimes
they become
unmaintained and
abandoned by
maintainers

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master 2 branches 36 tags Go to file Code

adriilo Add "archived project" statement ✓ 8459666 on May 26, 2022 482 commits

.github	Update ci.yml	2 years ago
docs	Update documentation with number format	2 years ago
src/Spout	Make builds reproducible	9 months ago
tests	Make builds reproducible	9 months ago
.editorconfig	Add .editorconfig	8 years ago
.gitattributes	Add docs to .gitattributes	5 years ago
.gitignore	Make builds reproducible	9 months ago
.php-cs-fixer.dist.php	Upgrade PHP and dev dependencies	last year
CONTRIBUTING.md	Contributing: added info about code style	3 years ago
LICENSE	First external release	9 years ago
README.md	Add "archived project" statement	9 months ago
UPGRADE-3.0.md	Add full support for PHP 8.0	3 years ago
composer.json	Upgrade PHP and dev dependencies	last year
composer.lock	Make builds reproducible	9 months ago
logo.png	First external release	9 years ago
phpstan.neon	PHPStan Level 4	2 years ago
phpunit.xml	Upgrade PHPUnit config	last year

README.md

Spout

stable v3.3.0 status inactive Spout CI passing coverage 97% downloads 20.52 M

Archived project

This project has been archived and is no longer maintained. No bug fix and no additional features will be added.
You won't be able to submit new issues or pull requests, and no additional features will be added

You can still use Spout as is in your projects though :)

Thanks to everyone who contributed to this project, from a typo fix to the new cool feature.
It was great to see the involvement of this community!

Readme Apache-2.0 4.2k stars 148 watching 597 forks Releases 36 Version 3.3.0 on May 16, 2022 + 35 releases Sponsor this project adriilo Adriilo + 21 contributors Languages PHP 100.0%



**abandonment can transform
dependency from**

free resource

to

costly liability

conflict between expectations and realities fuel open-source sustainability research

expectations placed on open source projects

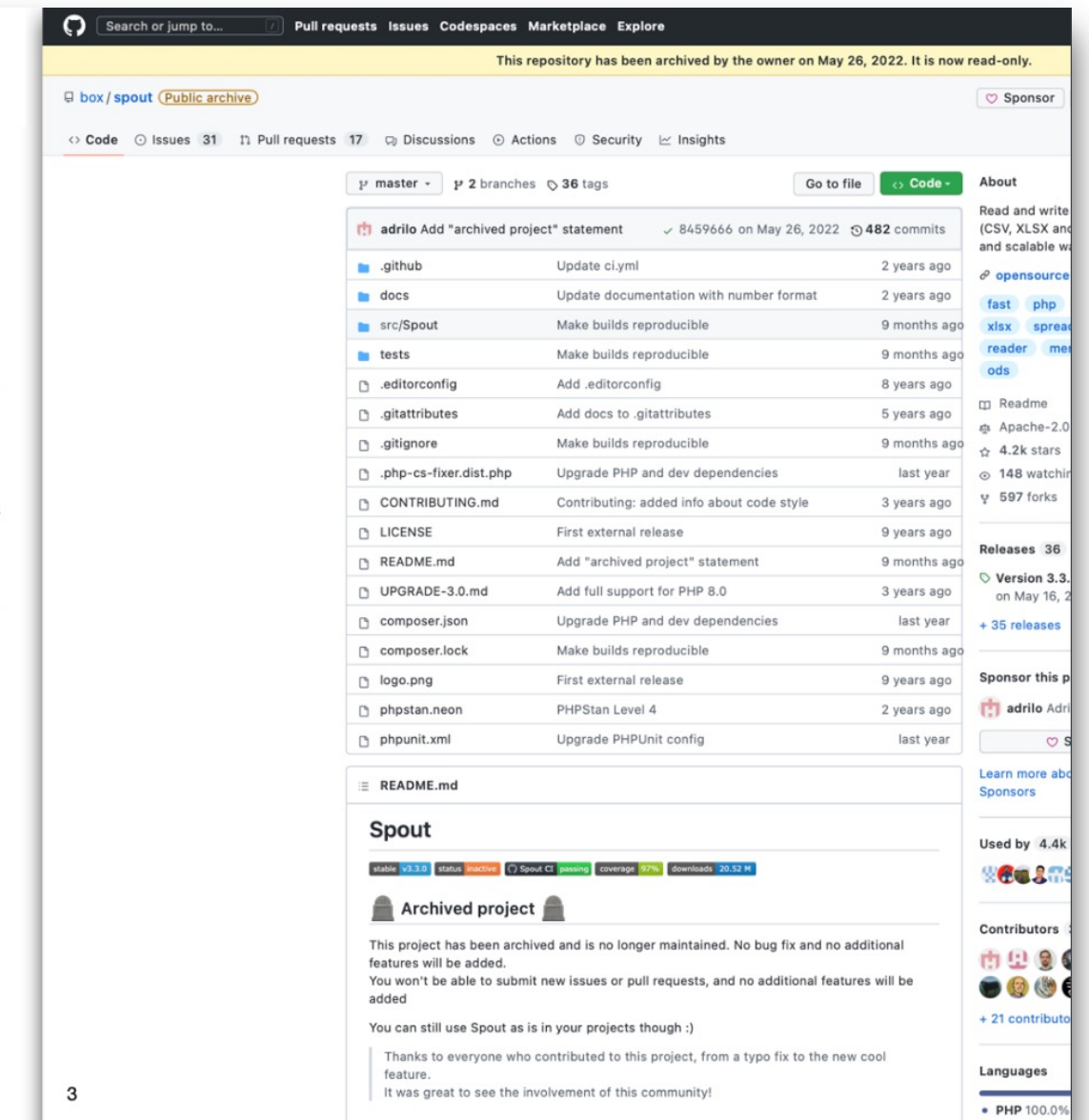
vs.

realities of open source projects

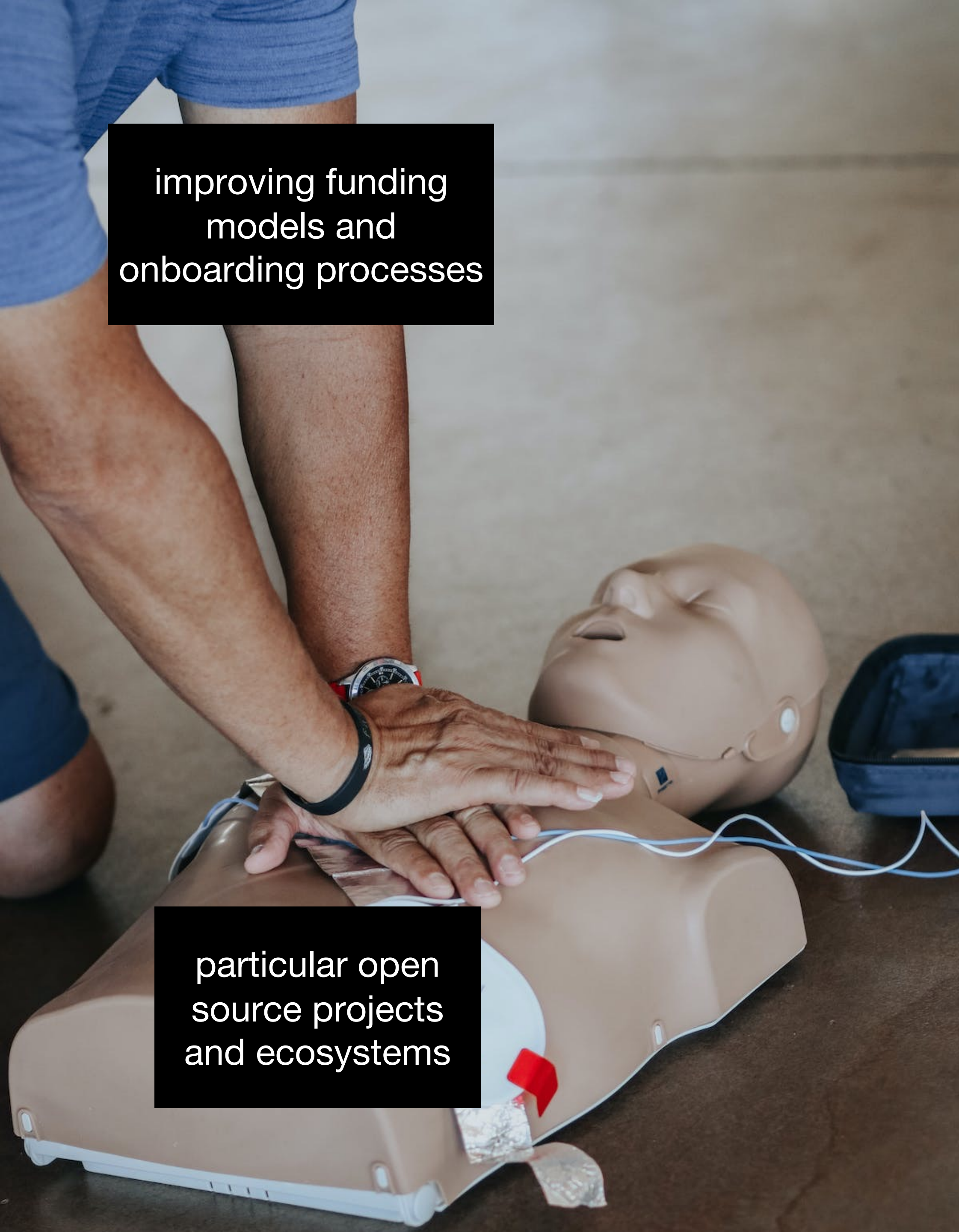
open-source software is the infrastructure that our digital lives run on



despite the wide-spread reliance on these projects, sometimes they become unmaintained and abandoned by maintainers



open-source sustainability research has focused on keeping particular projects and ecosystems alive and maintained

A photograph showing a person's hands performing CPR on a medical training mannequin lying on a dark floor. The mannequin is light-colored with a realistic face and torso. The person is wearing a blue shirt and shorts, and has a watch on their left wrist. A blue container is visible in the background.

improving funding models and onboarding processes

particular open source projects and ecosystems




maintainers often leave projects for reasons we cannot prevent*:
(e.g., switching job, starting family, or losing interest)

often nobody steps up when maintainers disengage**

*(Miller et al., 2019)

** (Avelino et al., 2019)

**more research should
focus on supporting
open-source users
who face abandonment**



users dealing
with dependency
abandonment

user who is not yet
ready to deal with
dependency
abandonment

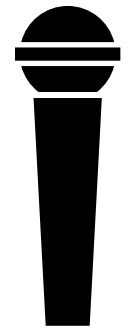
abandoned
open-source
project

Research Questions:

RQ1. how do developers prepare for the risk of open-source dependency abandonment?

RQ2. how do developers deal with open-source dependency abandonment, once it occurs?

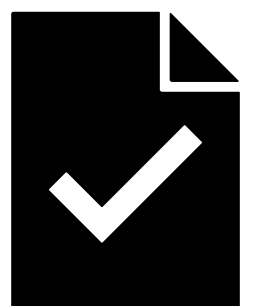
semi-structured interviews with 33 developers

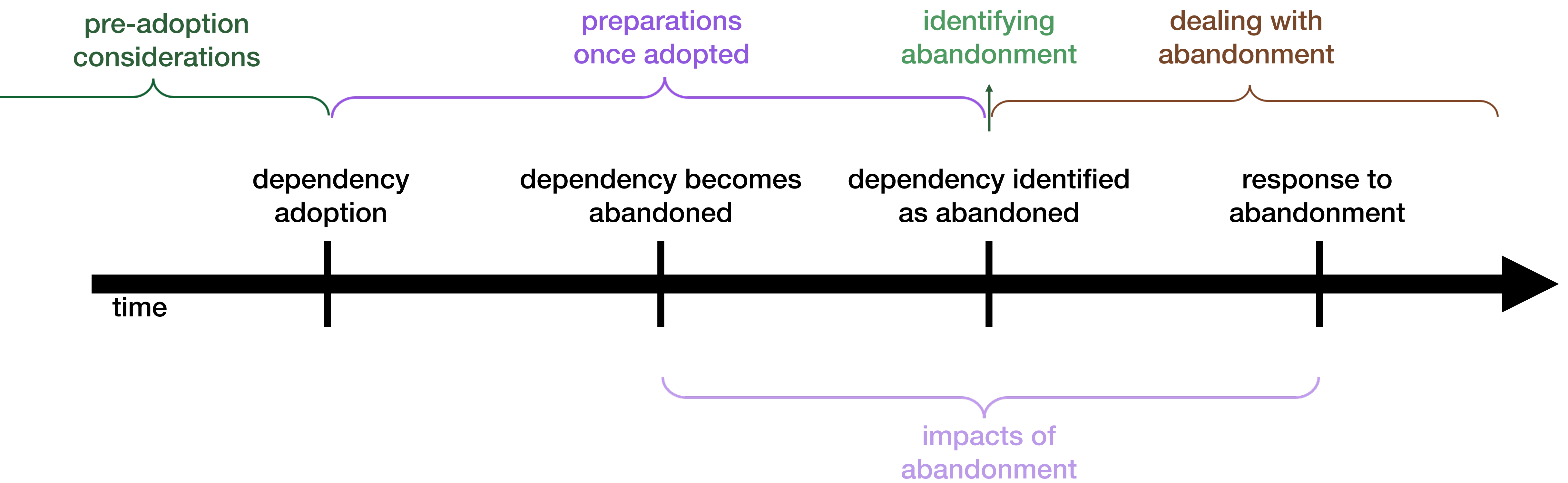


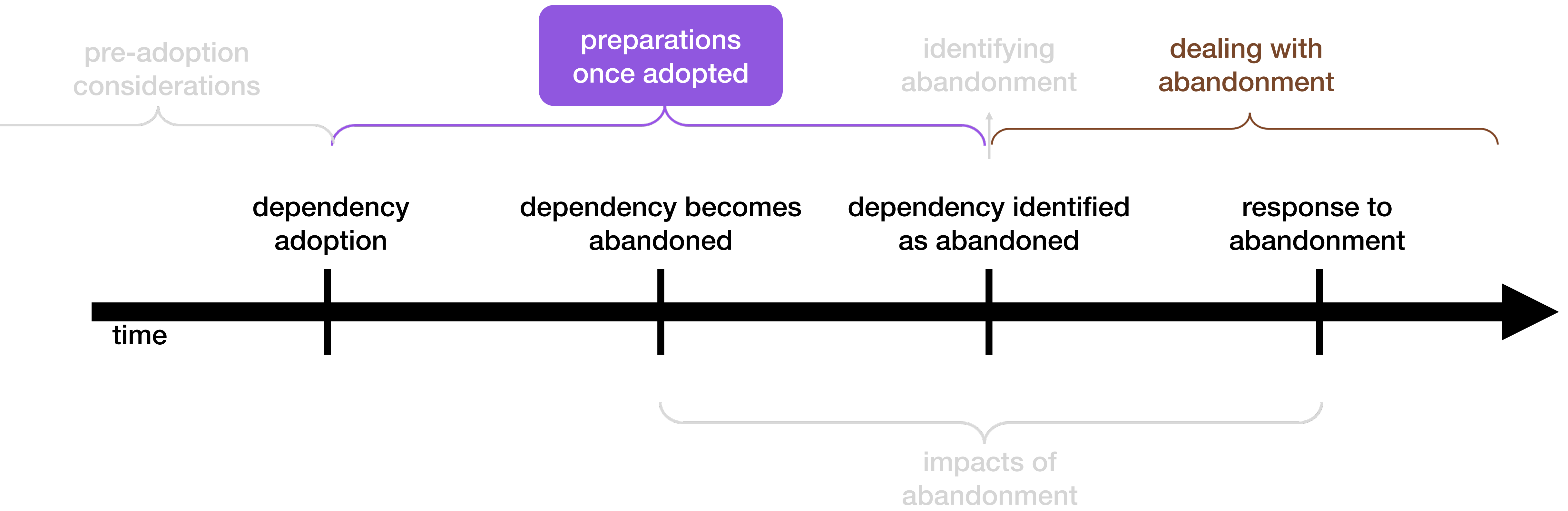
analyzed using iterative thematic analysis



performed validity check with interviewees

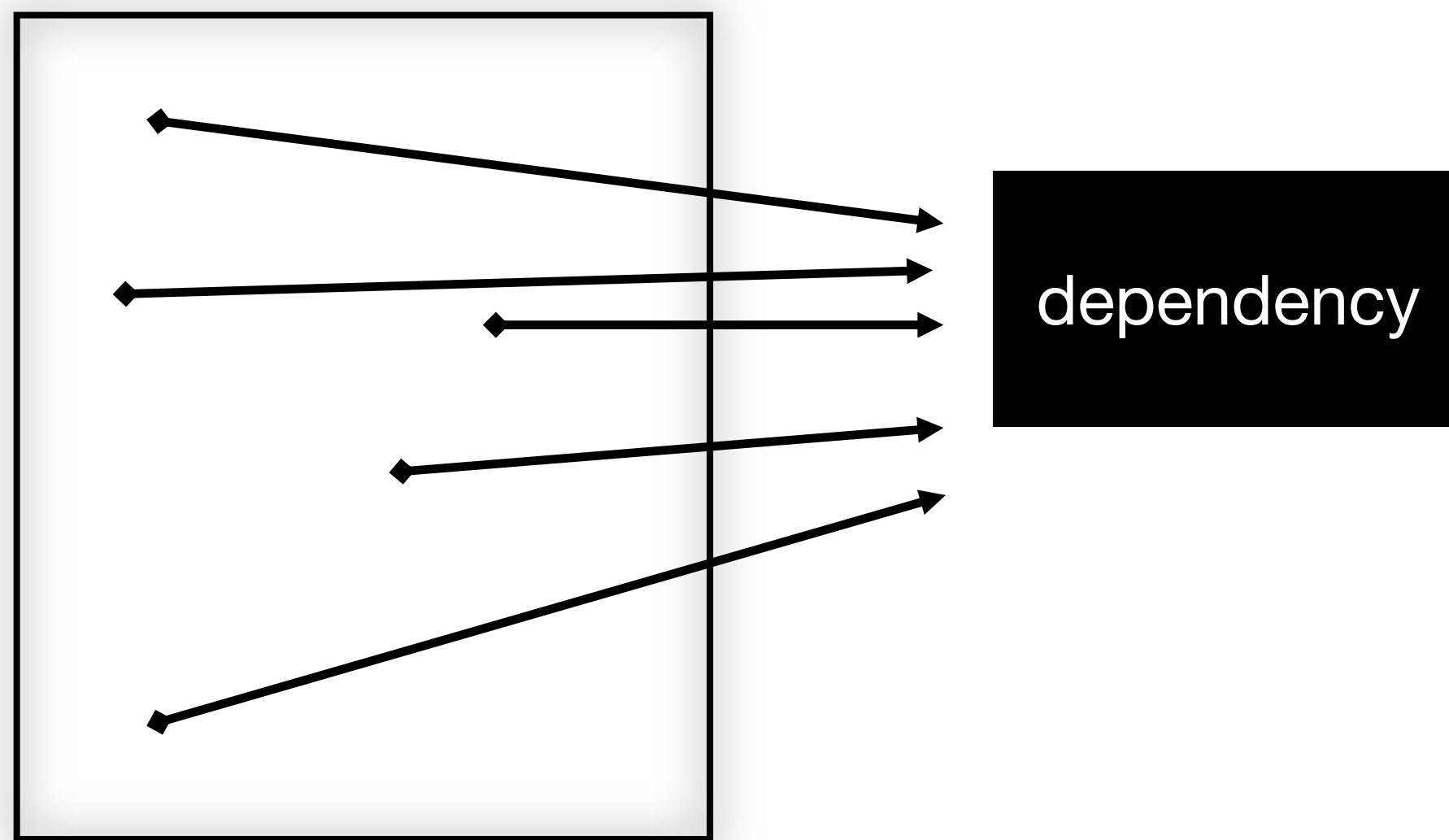




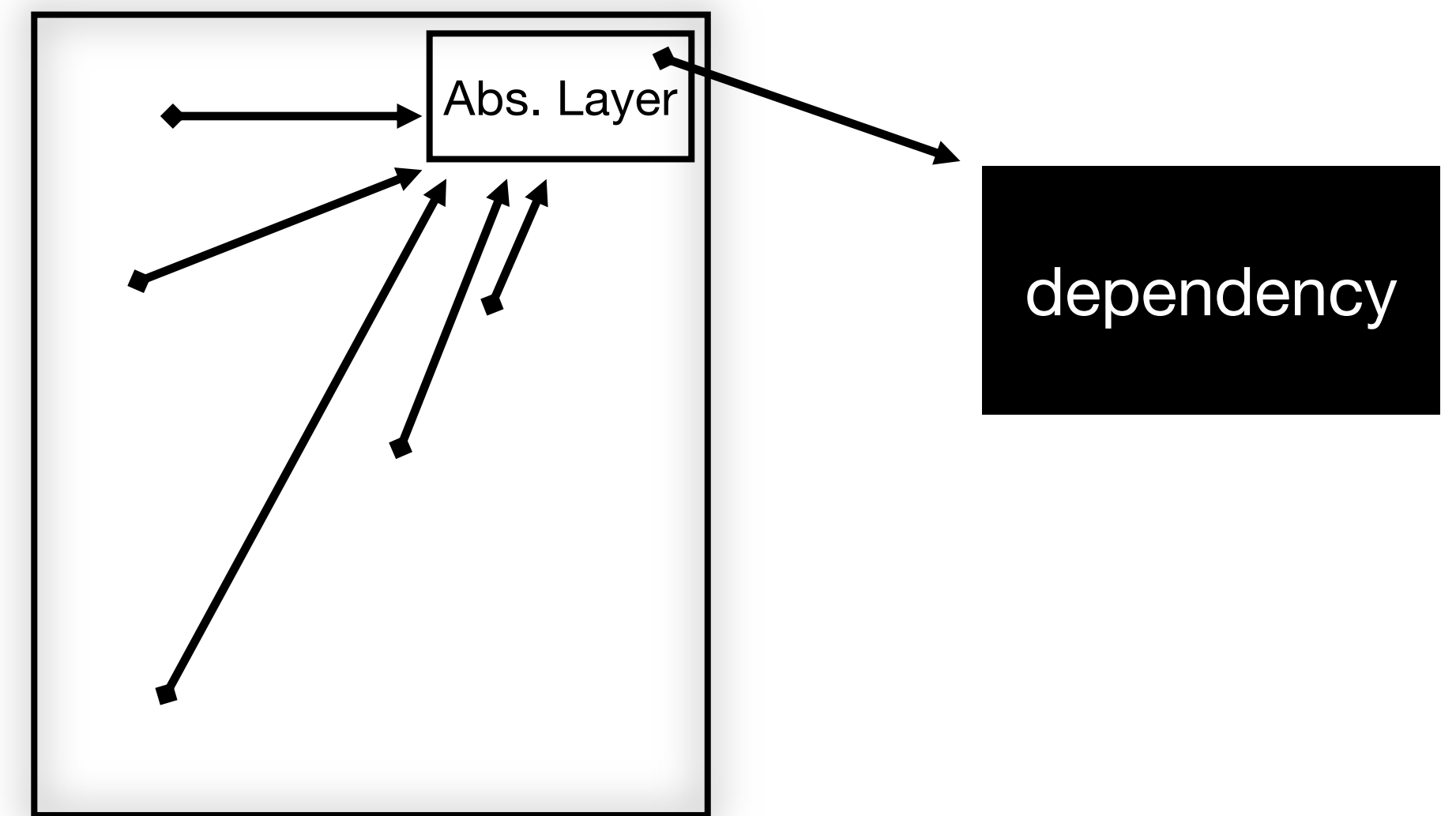


minimizing/localizing dependency use with abstraction layers

code base without abstraction layer



code base with abstraction layer



preparations
once adopted

minimizing number of dependencies

[WNMGDS-2002] Dependency Updates, Storybook Upgrade #2217

Merged [redacted] merged 5 commits into main from [redacted] on Oct 24, 2022

Conversation 3 Commits 5 Checks 0 Files changed 8

commented on Oct 24, 2022 • edited

Summary

- Upgrades Storybook to Latest version
- Cleans up some of the `yarn install` noise
- Removes an outdated test
- Removes `@whitespace/storybook-addon-html` which is unsupported (last update 2017) and causes some problems (when trying to upgrade some packages)
- Removes unnecessary devDependencies from child system packages

Showing 8 changed files with 906 additions and 1,752 deletions.

Filter changed files

- main.js
- .yarnrc
- package.json
- packages
 - design-system/src/component...
 - index.test.js
 - docs/src/components/content...
 - StorybookExampleFooter...
 - ds-healthcare-gov
 - package.json
 - ds-medicare-gov
 - package.json

packages/ds-medicare-gov/package.json

```
@@ -28,17 +28,5 @@
28  "@cmsgov/design-system": "4.0.0",
29  "@types/react": "^17.0.10",
30  "@types/react-dom": "^17.0.10"
31 - },
32 - "devDependencies": {
33 -   "@types/webpack": "^4.41.6",
34 -   "@typescript-eslint/eslint-plugin":
35 -     "^5.27.1",
36 -   "@typescript-eslint/parser": "^5.27.1",
37 -   "eslint-config-prettier": "^6.10.0",
38 -   "eslint-config-react": "^1.1.7",
39 -   "eslint-plugin-compat": "^3.5.1",
40 -   "eslint-plugin-jsx-a11y": "^6.2.3",
41 -   "eslint-plugin-prettier": "^3.1.2",
42 -   "eslint-plugin-react": "^7.18.3",
43 -   "eslint-plugin-react-hooks": "^4.4.0"
44 - }
31  }
32  }
```

preparations once adopted

not all interviewees considered prep worth the effort

[Preparing] is one of those like 'It would be really nice if' but there's so many other things [...]

- PID22

preparations
once adopted

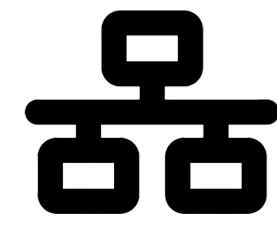
not all interviewees considered prep worth the effort

*We are basically employing the strategy of
**‘if it works it works, if it
breaks then I’ll fix the issues.’***

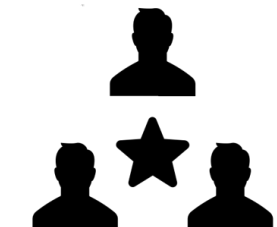
- PID10

preparations
once adopted

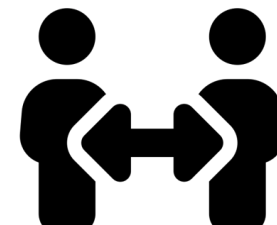
interviewees adopted different preparation strategies



minimize/localize dependency use



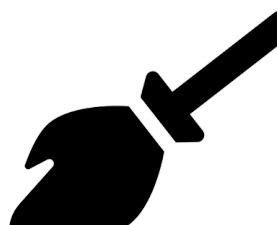
be active informed member of community



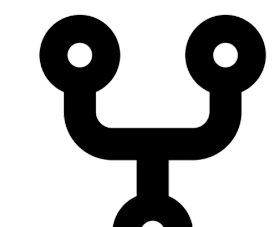
build relationship with maintainers



monitor dependency



minimize number of dependencies

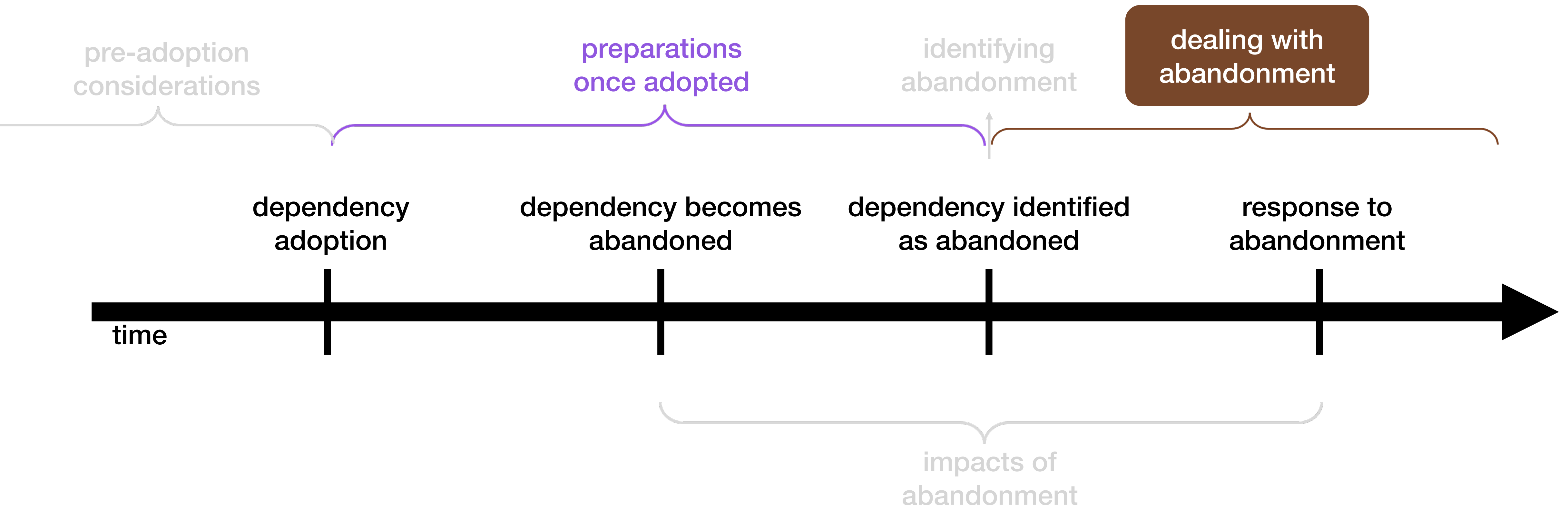


[plan to] fork dependency



only use high-confidence dependencies

preparations
once adopted



switch to alternative dependency

Remove the ConfigObj dependency (#1000)

main (#1000)
1.26

committed on Aug 29, 2022 (Verified)

1 parent f8c284f commit 3da979f918bb88e0dc29c498bfe4e77a6f1d4ebd

11 jobs/integration/test_aws_iam.py

```
@@ -7,7 +7,7 @@
7  from .utils import juju_run
8  from subprocess import check_output
9  from shlex import split
10 - from configobj import ConfigObj
11  from cilib.run import capture
12  import os
13
```

```
7  from .utils import juju_run
8  + from subprocess import check_output
9  - from shlex import split
10 + from configparser import ConfigParser
11 - from cilib.run import capture
12  import os
13
```

```
53 def get_test_keys():
54 - creds =
55   ConfigObj(str(Path("~/aws/credentials").expand
56   user()))
55 - if "default" not in creds.keys():
56     raise Exception("Could not find default
57   aws credentials")
57 - key_id = creds.get("default")
58 - ["aws_access_key_id"]
59 - key = creds.get("default")
60 - ["aws_secret_access_key"]
61   return {"id": key_id, "key": key}
```

```
53 def get_test_keys():
54 + creds = ConfigParser()
55 + creds.read(Path("~/aws/credentials").expanduse
56   r())
56 + if "default" not in creds.sections():
57     raise Exception("Could not find default
58   aws credentials")
58 + key_id = creds["default"]
59 + ["aws_access_key_id"]
59 + key = creds["default"]
60 + ["aws_secret_access_key"]
61   return {"id": key_id, "key": key}
```

dealing with abandonment

seek support from others

defunkt / **pystache** Public

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Is this project dead? #192

Open obfuscoder opened this issue on Aug 10, 2017 · 20 comments

New issue

There have been no commits in the last 3 years. Issues haven't been updated in a while. Pull requests haven't been merged or discussed despite them building successfully. Mailing list is silent.

stuaxo commented on Dec 11, 2017 · edited

Maybe an interim maintainer could be a solution http://bluesock.org/~willkg/blog/dev/html5lib_1_0.html

Some are now using chevron:

Chevron runs in less than half the time of pystache (Which is not even up to date on the spec). And in about 70% the time of Stache (A 'trimmed' version of mustache, also not spec compliant).

alanyee mentioned this issue on Apr 17, 2019

Update languages.yml mustache/mustache.github.com#120

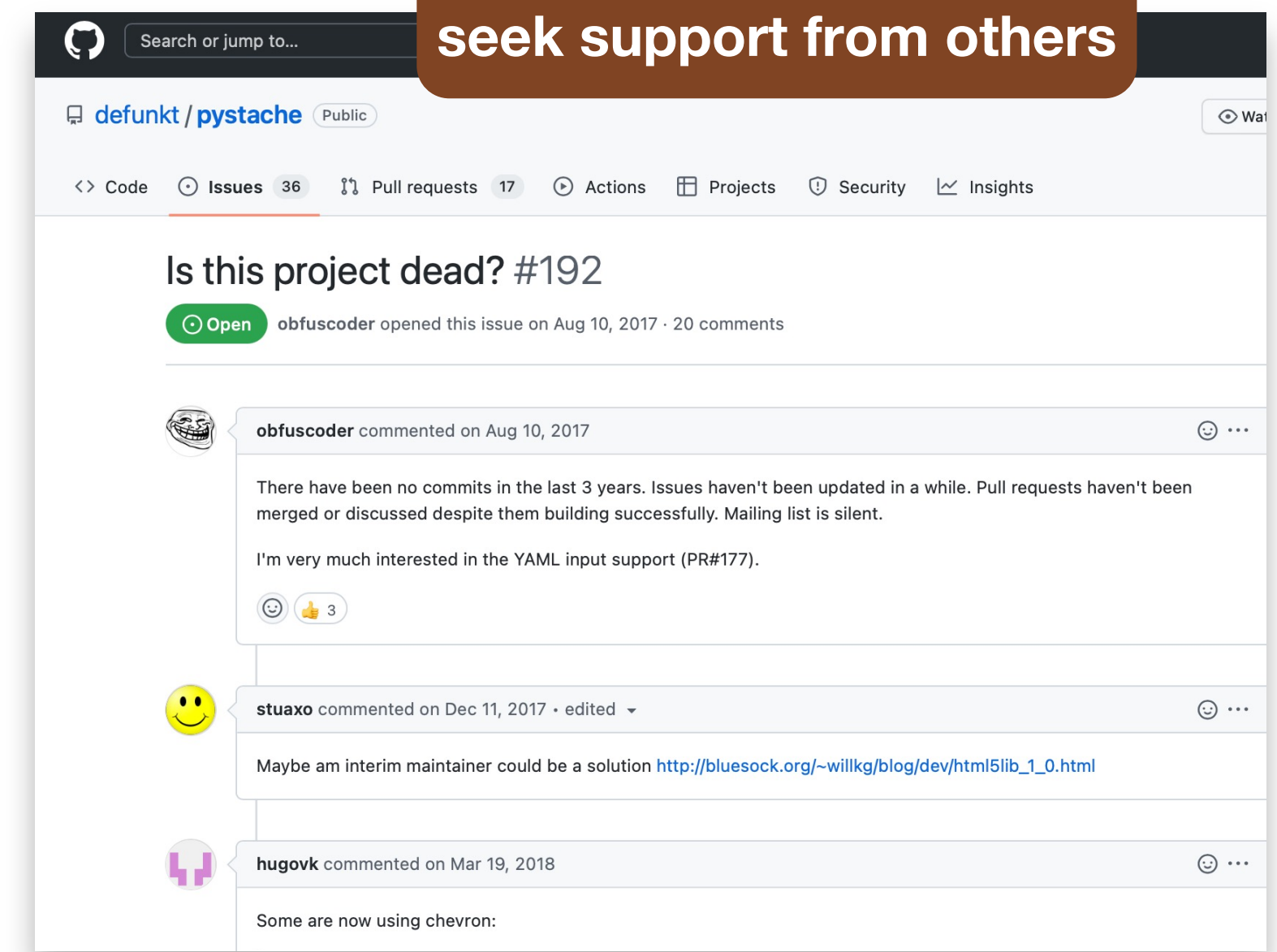
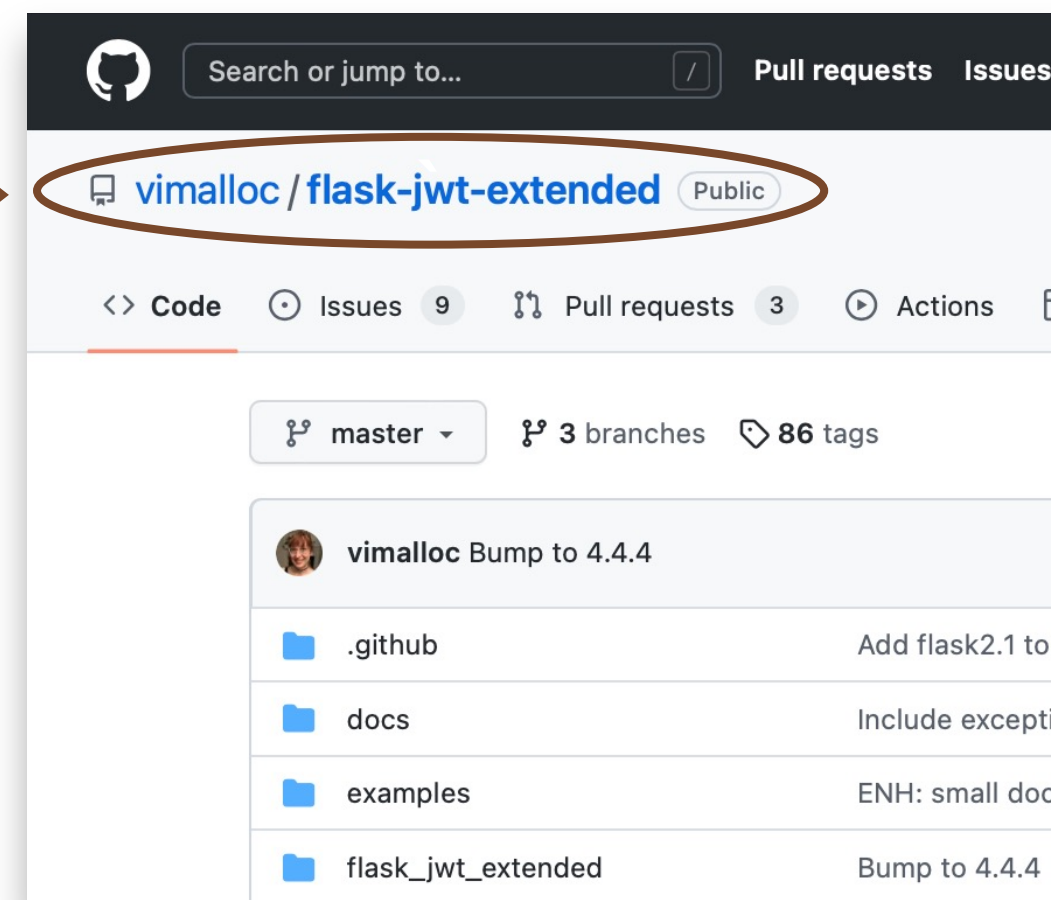
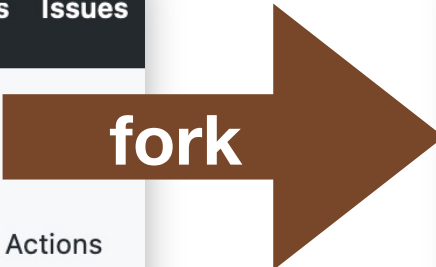
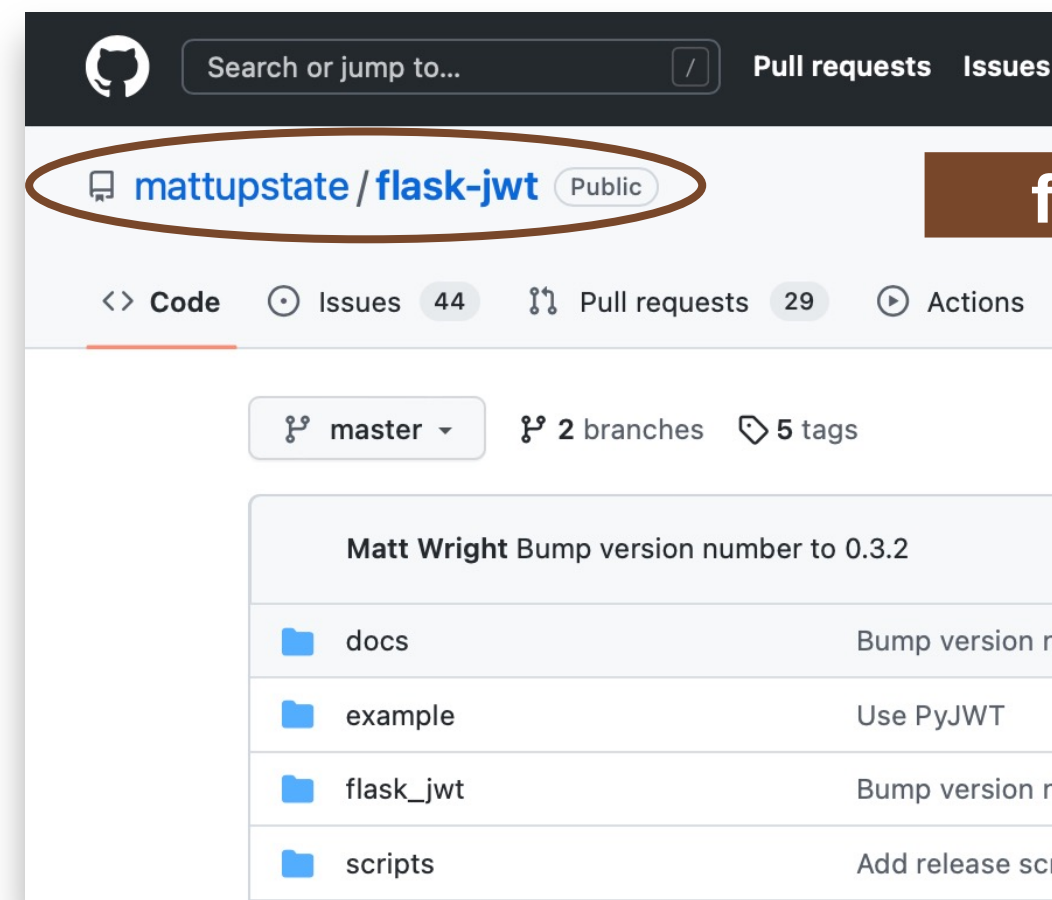
Merged

I think chevron is probably the best option but if you need a working python3 version of this library for any reason I have forked it to fix incompatibility with latest setuptools and (relatedly) dropped python2 support here –

<https://github.com/PennyDreadfulMTG/pystache>

dealing with
abandonment

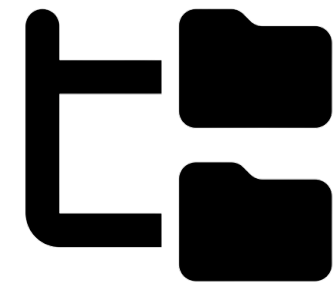
dealing with abandonment required trial-and-error



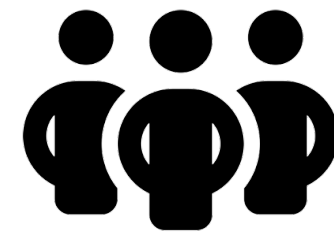
dealing with abandonment



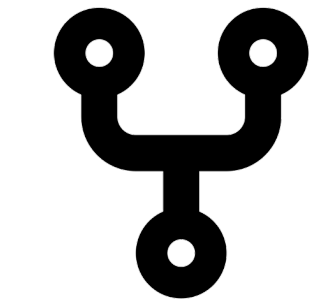
interviewee strategies for dealing with abandonment



switch to alternative dependency



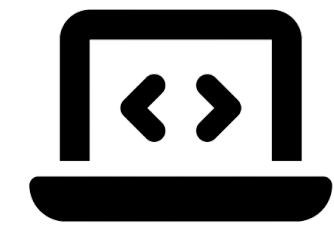
seek support from others



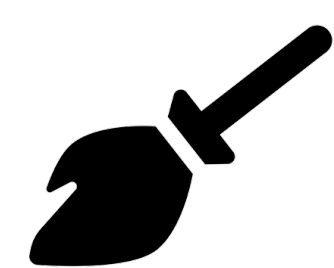
fork/vendor dependency



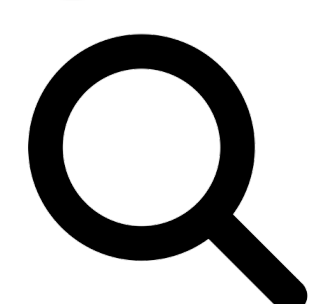
[try to] contribute to dependency



create workaround yourself



refactor code to minimize dependency use



help find new maintainers

dealing with
abandonment

minimizing/localizing dependency use with abstraction layers

code base without abstraction layer **code base with abstraction layer**

minimizing number of dependencies

switch to alternative dependency

seek support from others

pre-adoption considerations

preparations once adopted

identifying abandonment

dealing with abandonment

dependency adoption

dependency becomes abandoned

dependency identified as abandoned

response to abandonment



impacts of abandonment

interviewees benefitted from the actions of others

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GravityLabs / **goose** Public archive

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Is this project still maintained? #86

Open Quantisan opened this issue on Feb 26, 2014 · 1 comment

Quantisan commented on Feb 26, 2014

last commit was a year ago, 9 pull requests open from months ago

jasonab commented on Feb 26, 2014

No, I don't believe so. There's a python fork at <https://github.com/grangier/python-goose>, as well as some direct forks (including mine with a few bugfixes: <https://github.com/jasonab/goose>)

Write Preview

This repository has been archived.

Assignees
No one assigned

Labels
None yet

Projects
None yet

Milestone
No milestone

Development
No branches or pull requests

Notifications Customize

You're not receiving notifications from this thread.

2 participants

**most interviewees did not consider creating
community-oriented solutions:**

actions used when dealing with abandonment that
reduce the amount of redundant effort expended by
subsequent projects facing the same abandoned
dependency

creation of community-oriented solutions is example of volunteer's dilemma:

game with n group members, each can decide whether to volunteer and incur the associated cost to produce a public good that all group members benefit from. if nobody volunteers everyone loses

dependents of abandoned dependency

the lost opportunity to spend that time working on other responsibilities

community-oriented solution

using community-oriented solution and reducing redundant effort

practical volunteer's dilemma solutions from literature

prime potential
volunteers & re-
frame
volunteering

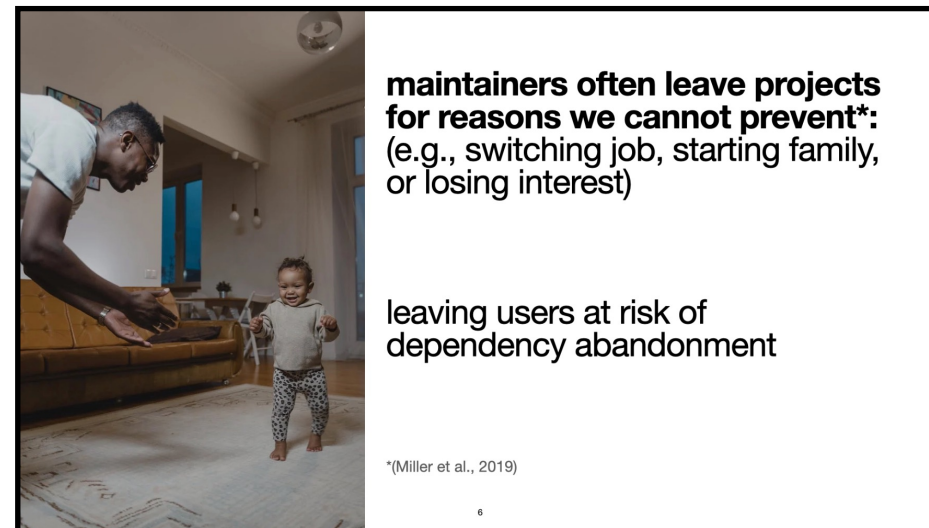
nudge
potential
volunteers

facilitate &
encourage
group
discussions

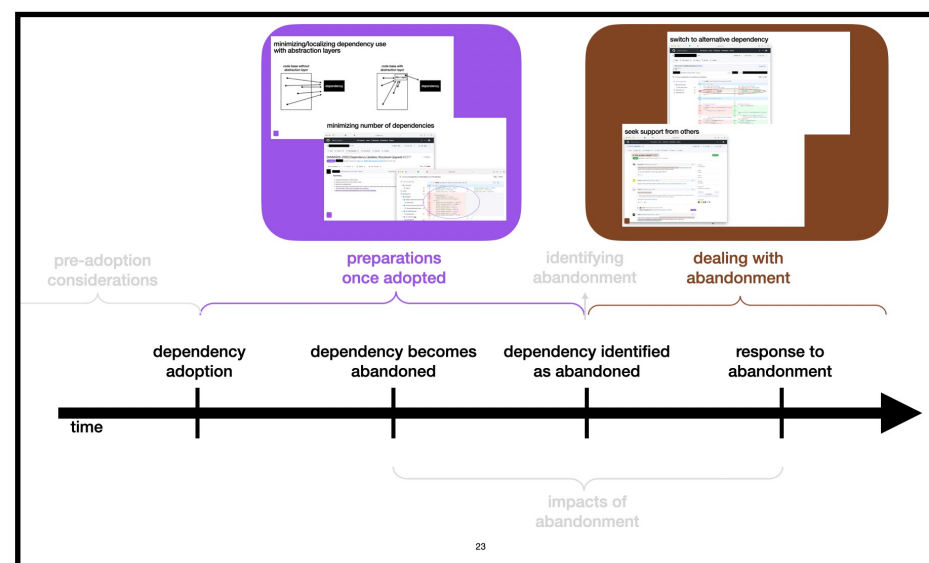
reward
volunteers

reduce cost of
creating
community-
oriented solutions

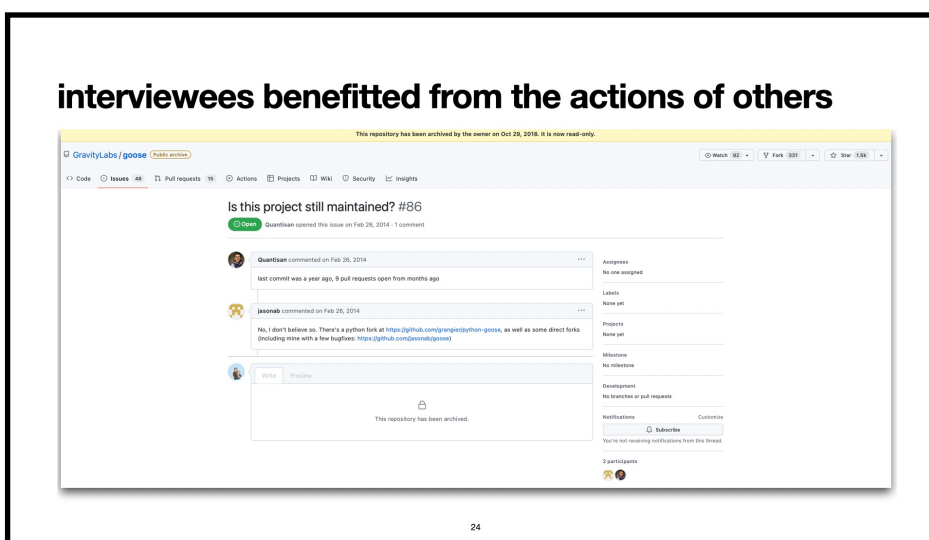
in summary...



open-source dependency abandonment is sometimes inevitable, so we should support users facing abandonment



there is a cost to abandonment, some took actions to try to reduce these costs



dealing with abandoned dependencies collectively can reduce redundant individual effort across a community

