

Task Specialization in Social Production Communities: The Case of Geographic Volunteer Work

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specialization

Von Krogh et al (2003) constructed the term “specialization” in the context of open source software – whether you contributed to the same module or different ones over time.

Turner et al (2005) and Welser et al (2007) identified roles in Usenet and online discussion groups: “question person” and “answer person”.

Welser et al (2008) studied roles in Wikipedia: technical editors, substantive experts, vandal fighters, etc.

<http://cyclopath.org>

[map](#)

[our team](#)

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[help & demos](#)



Cyclopath

discover your path

Find bike routes that match the way you ride.

Share your cycling knowledge with the community.

[explore the map](#)

find a route

begin

end

Cyclopath is available in the 7-county Twin Cities metro area.

[Find Route](#)

personalized bikeability

Cyclopath lets you enter personal bikeability ratings for roads and trails. This unique rating system helps find the best routes for you, while also supporting the community with your individual knowledge.

geowiki what?

Cyclopath is a geowiki: an editable map where

new features

Regions

Share information about and route to neighborhoods and other area-based places.

Multiple routes

Cyclopath can now show multiple routes at once, letting you efficiently compare different possibilities.

[more](#)



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Route Details

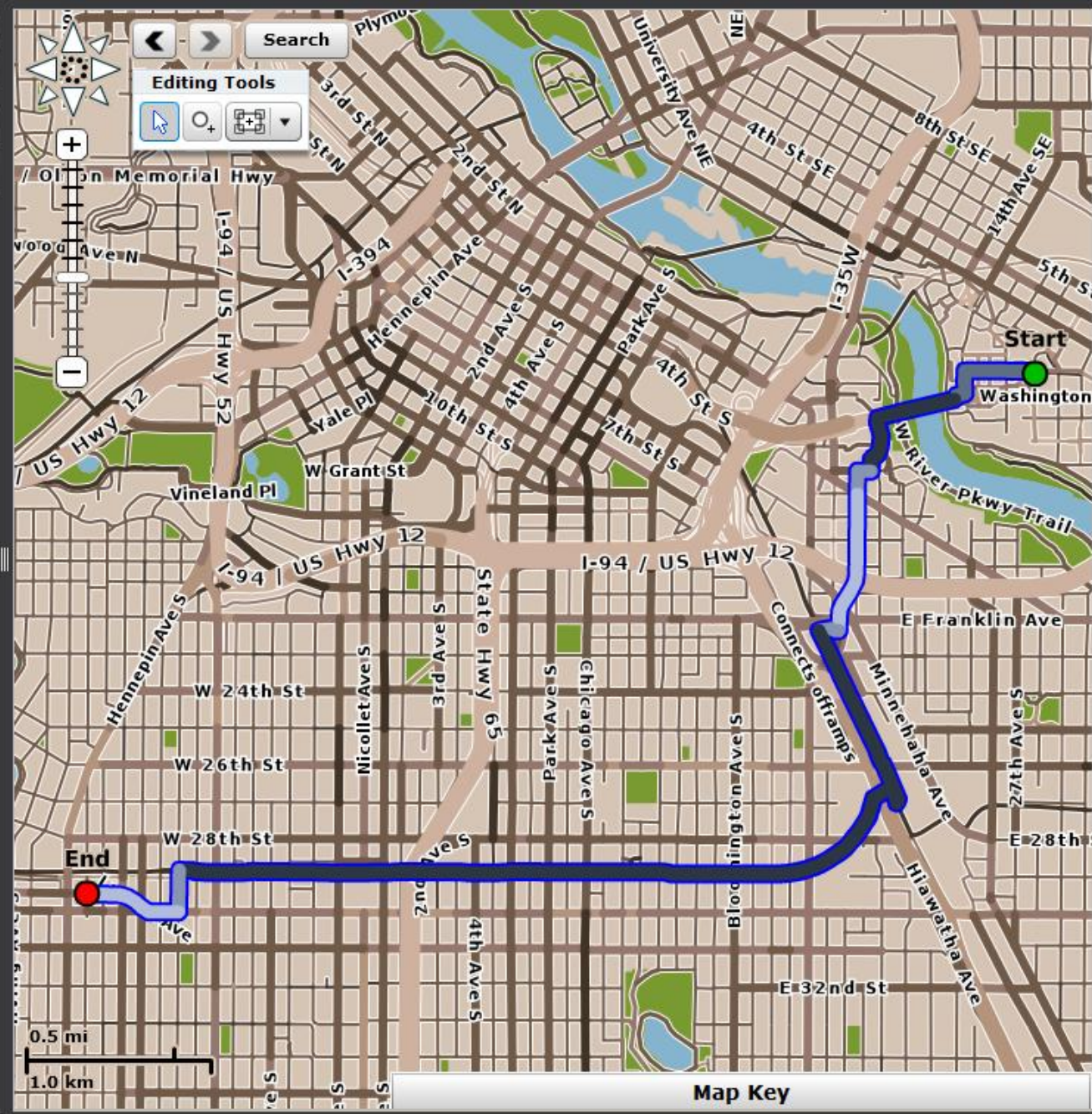
[Feedback on this Route](#) [Show Routes](#)

From: 200 Union St SE, Minneapolis, MN 55455
 To: Landmark Lagoon Cinema (Lowry Hill East,...)
 Length: 5.19 mi
 Share: [Create Link](#)

Color route by:
 Byway Type Major Road
 Bicycle Path

Cue Sheet [Printer Friendly](#) [As GPX](#)

Odo.	Directions	Leg
0.00	Start cvclina N on Union St SE	0.01
0.01	Left/W onto Scholars Walk	0.24
0.25	Left/S onto East Bank Deck Bridae	0.06
0.31	East Bank Deck Bridge changes to East Bank Deck	0.06
0.37	Slight right/SW onto Washington Ave Bridge - Upper deck	0.27
0.63	Left/S onto U of M West Bank Sidewalk	0.10
0.73	U of M West Bank Sidewalk changes to U of M West Bank	0.10
0.83	Right/W onto 4th St S	0.05
0.88	Left/S onto 20th Ave S	0.46
1.34	20th Ave S changes to Cedar Ave S / County Hwy 152	0.09
1.43	Right/W onto Parkina Lot	0.07
1.50	Sharp left/SE onto Hiawatha LRT Trail	0.64



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Block Details (1 selected)

Basic **Advanced**

Name:

Type: Sidewalk

Accessibility Ramp X

Tags: [More info](#)

Discussions:

[Start New](#)

[None Existing](#)

Bikeability for me:

Don't know

[More info](#)

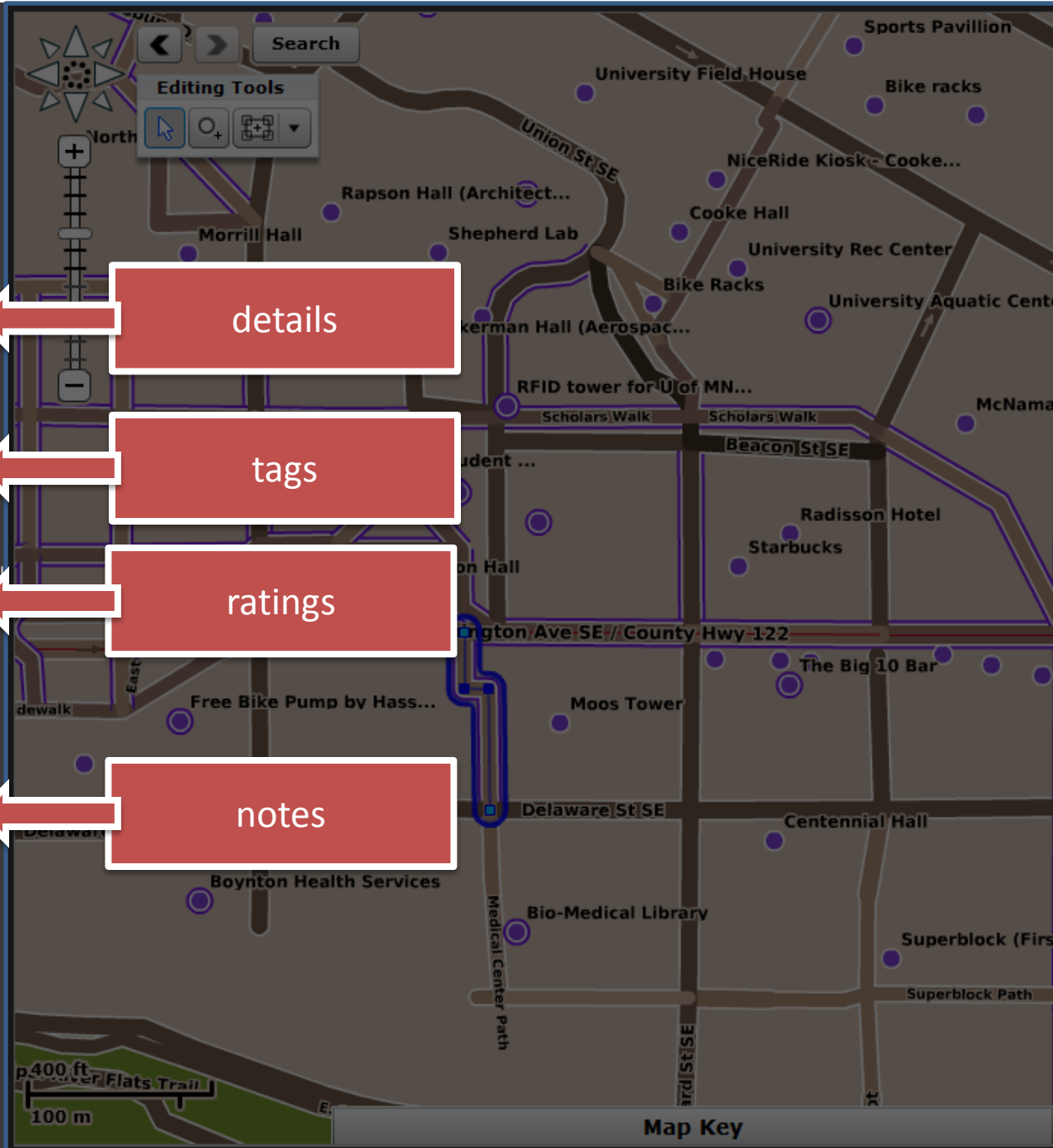
Estimate: Poor

[Pink is Private](#)

Notes

[Add Note](#)

Accessibility ramp from sidewalk up ... [more](#) [x](#)



details

tags

ratings

notes

Map Key

Find Route

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Basic **Advanced**

Name:

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[More info](#)

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Don't know

[More info](#)

Estimate: Poor

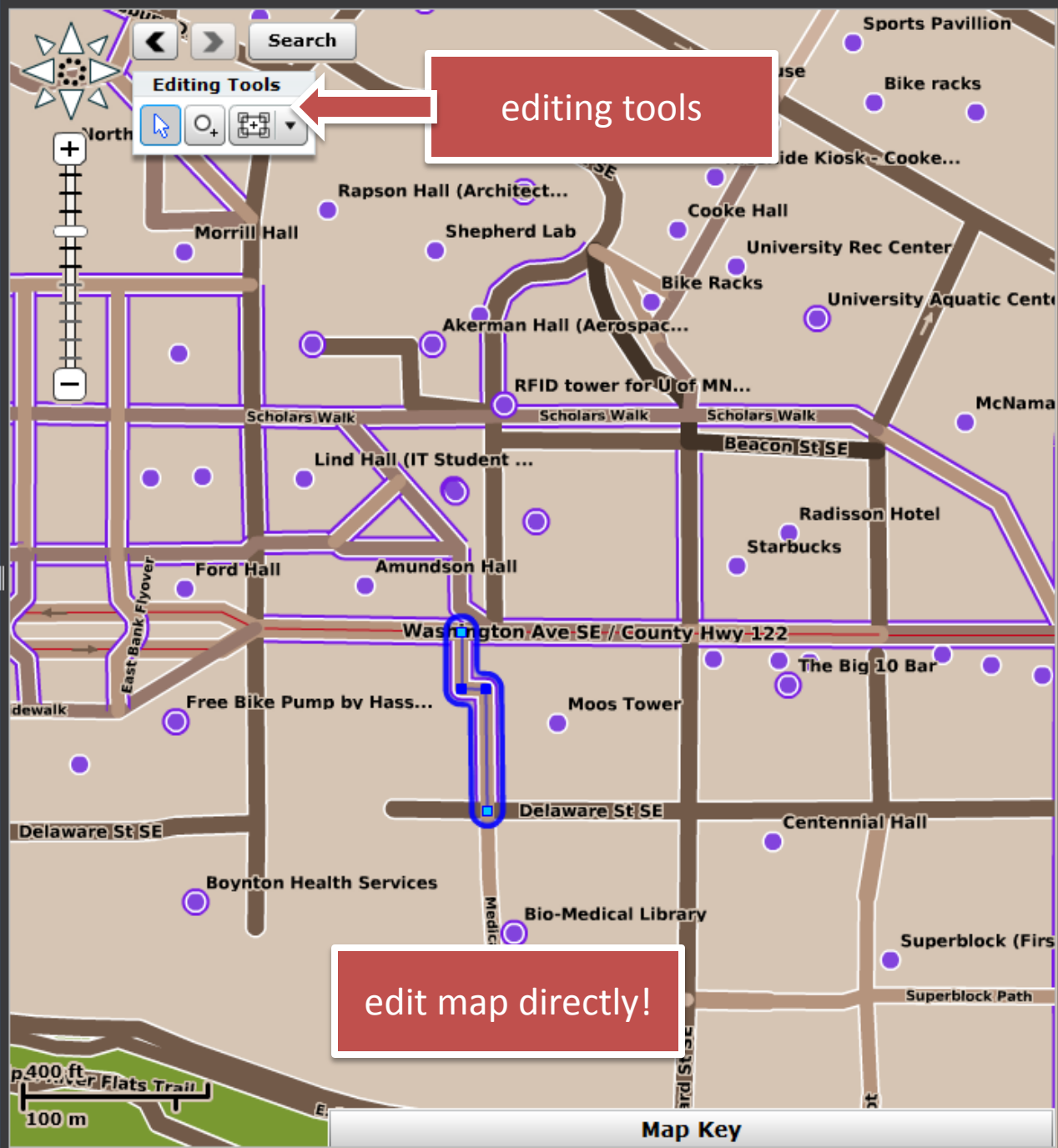
[Pink is Private](#)

Notes

[Add Note](#)

Accessibility ramp from sidewalk up ...

[more](#)



Search

Editing Tools

editing tools

edit map directly!



Map Key

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[Privacy](#)



Block Details (1 selected)

Basic **Advanced**

Name:

Type: Sidewalk

Accessibility Ramp X

Tags: [More info](#)

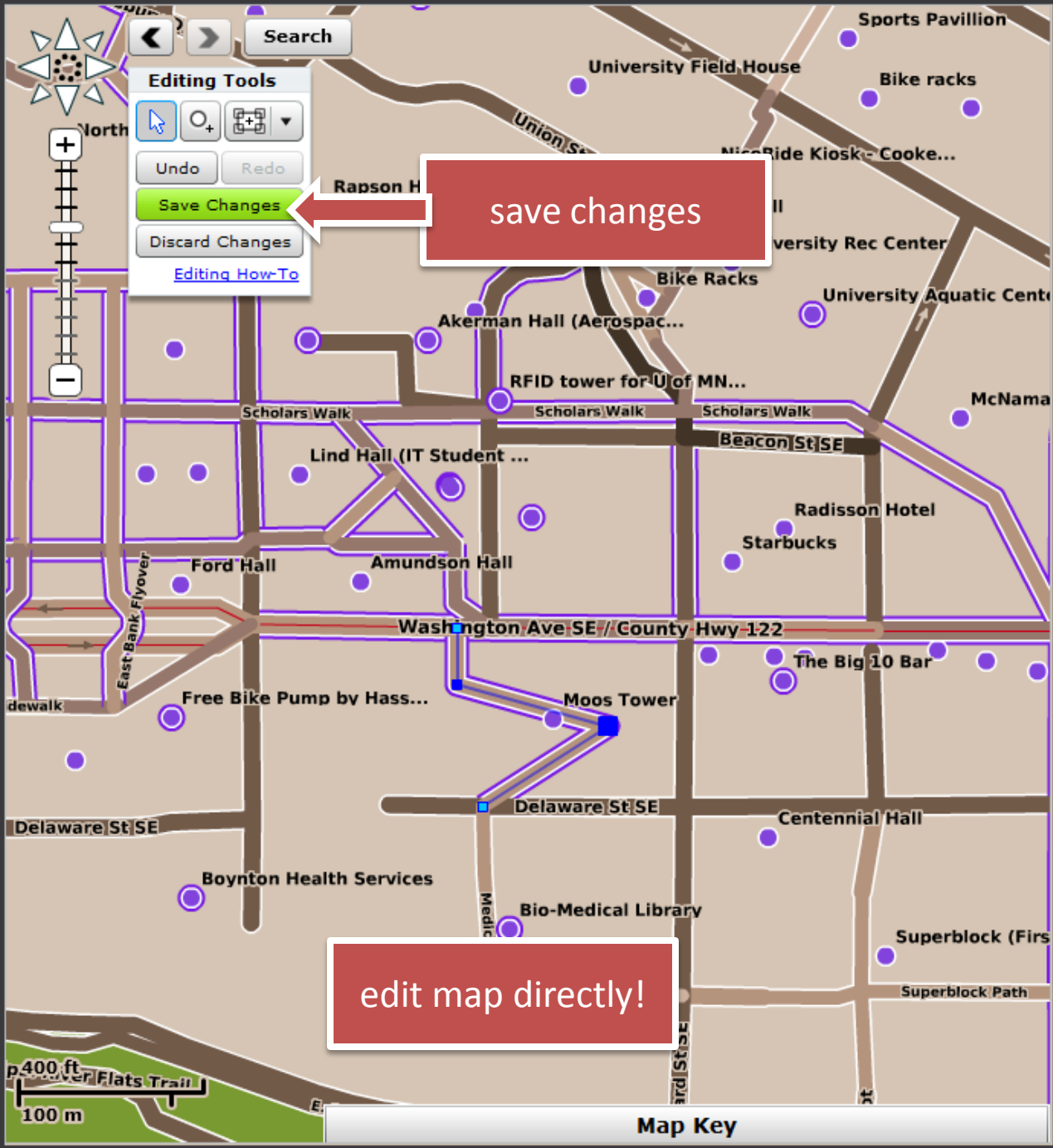
Discussions: **Start New** None Existing

Bikeability for me: Don't know [More info](#)

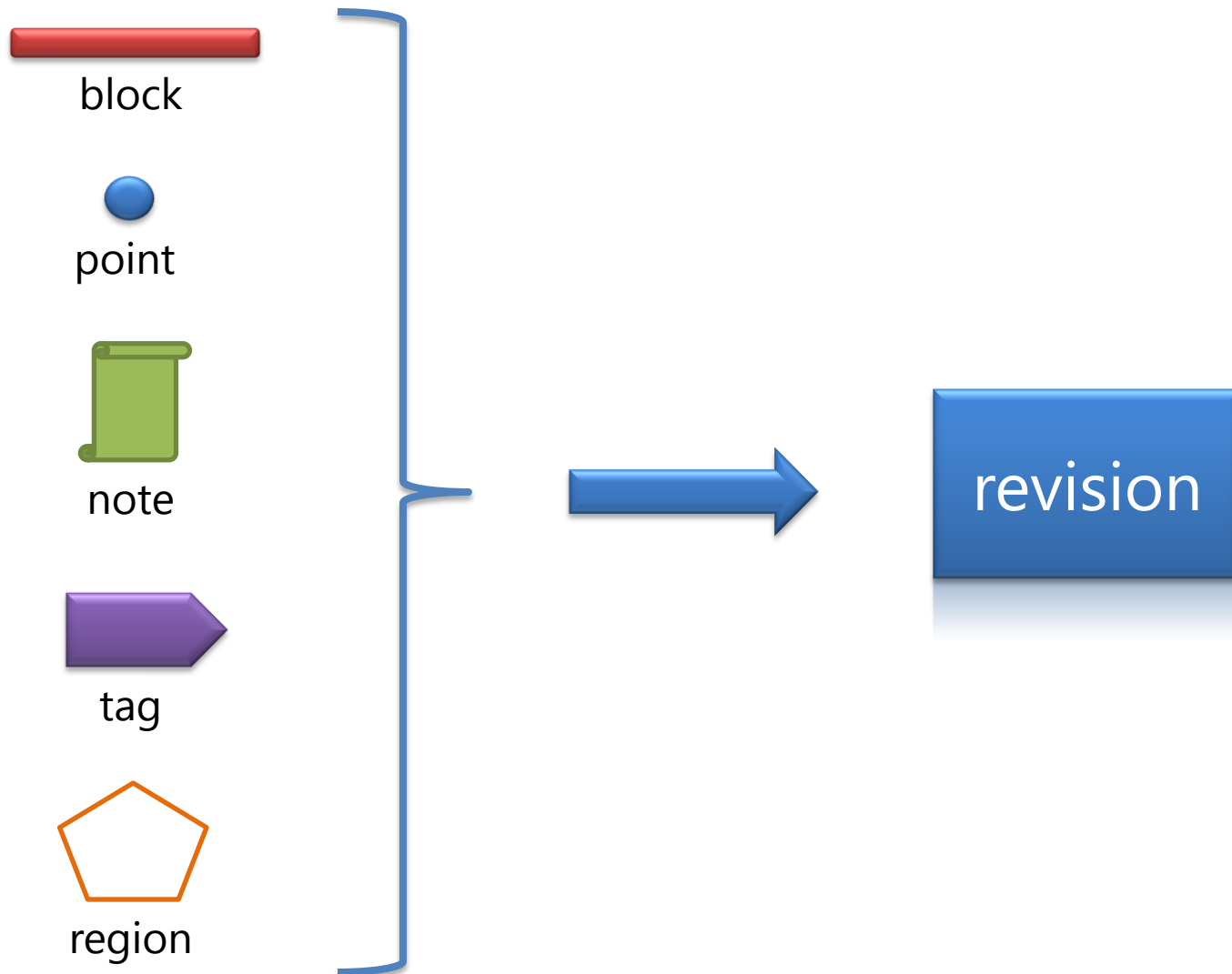
Estimate: Poor [Pink is Private](#)

Notes [Add Note](#)

Accessibility ramp from sidewalk up ... [more](#) [x](#)



work type



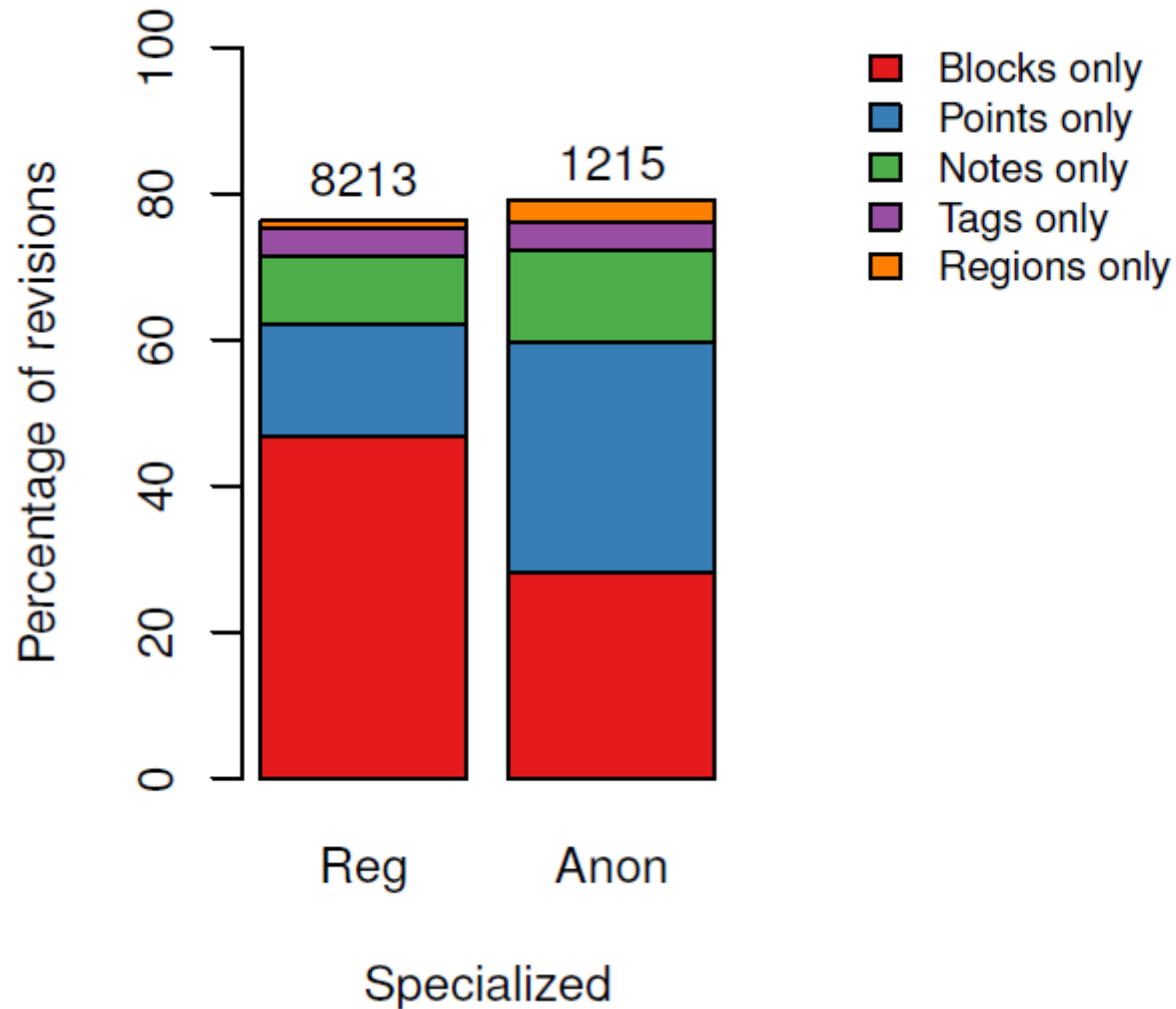
research questions

are **contributions** specialized?

are **contributors** specialized?

how does this specialization **change**?

specialization in contributions



chromogram stacks

(exploratory visualization)

1

User A: 

- one dot per revision
- color indicates specialization

2

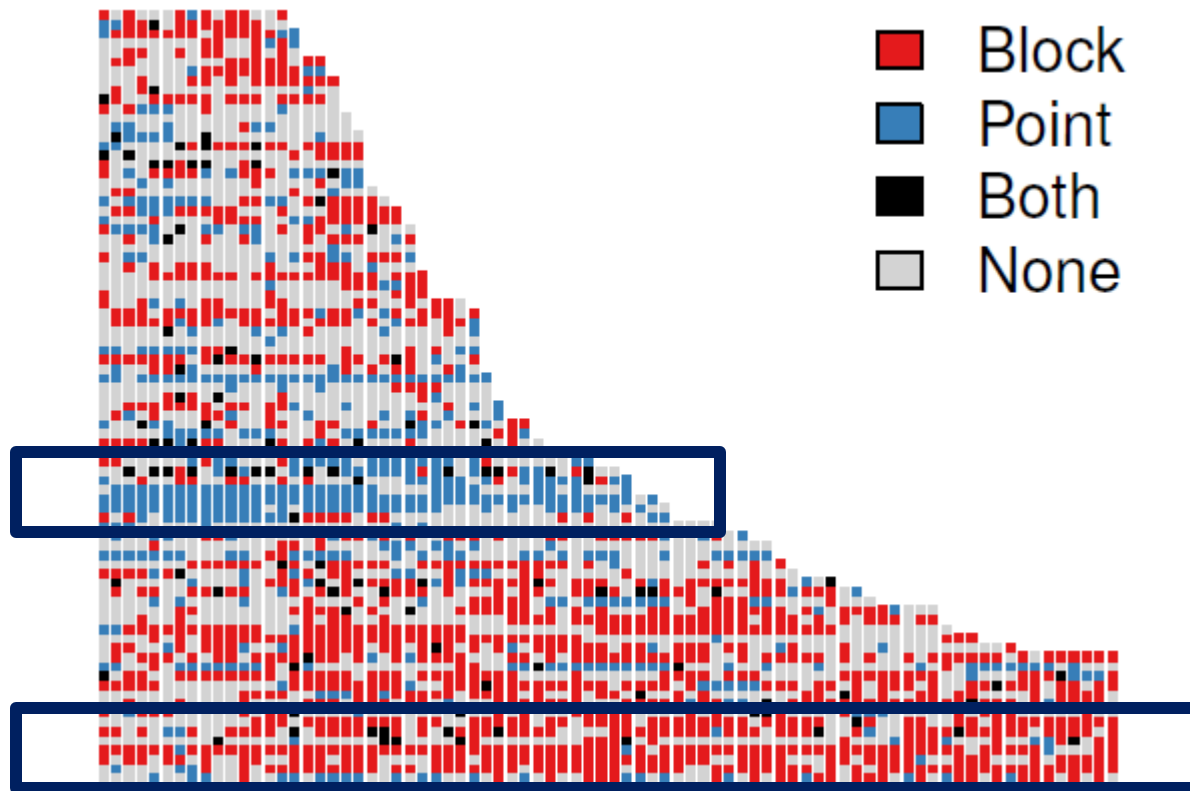


User A: 



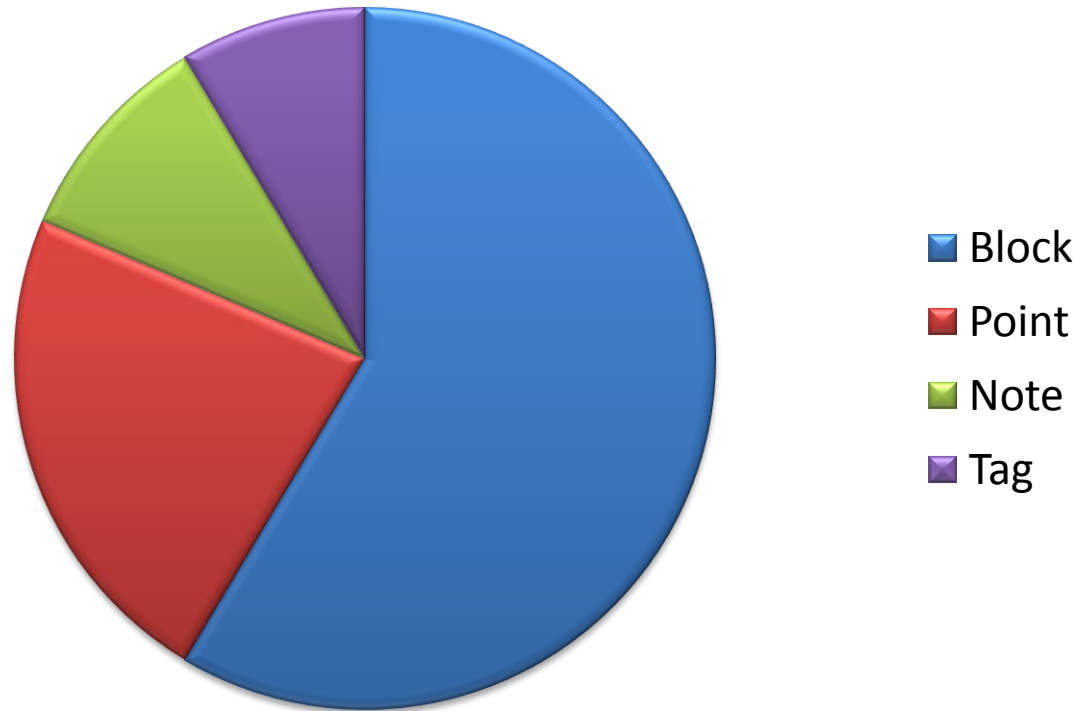
chromogram stack: both

(exploratory visualization)



how do we measure specialization?

Work Done



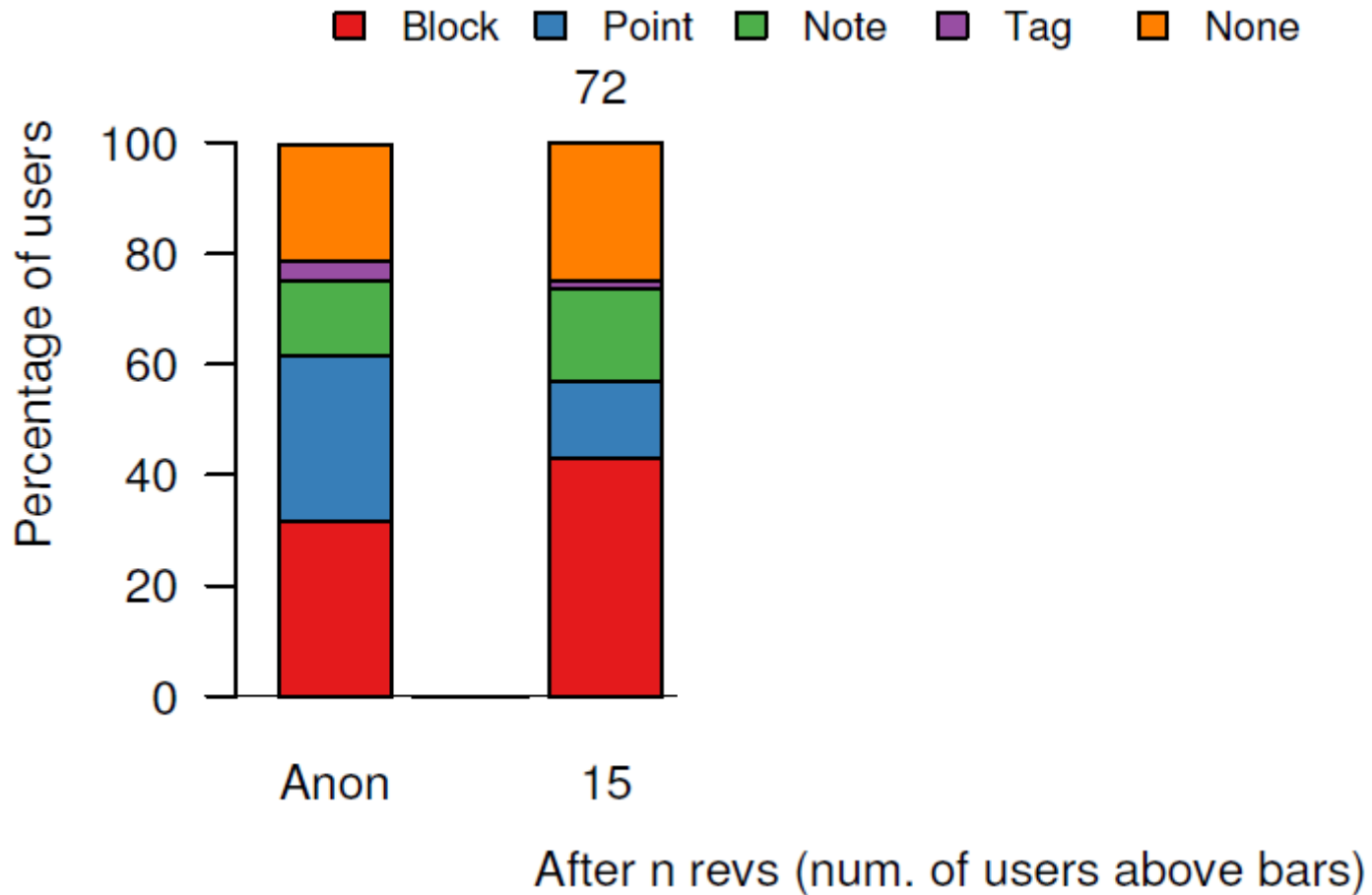
block	point	note	tag
60%	25%	8%	7%

an example user's contributions

specialists

Work type	Specialists	Mean Revisions
Block	38	180
Point	10	42
Note	5	25
Tag	2	37
<i>none</i>	29	40
Total	84	-

change in specialization (population level)

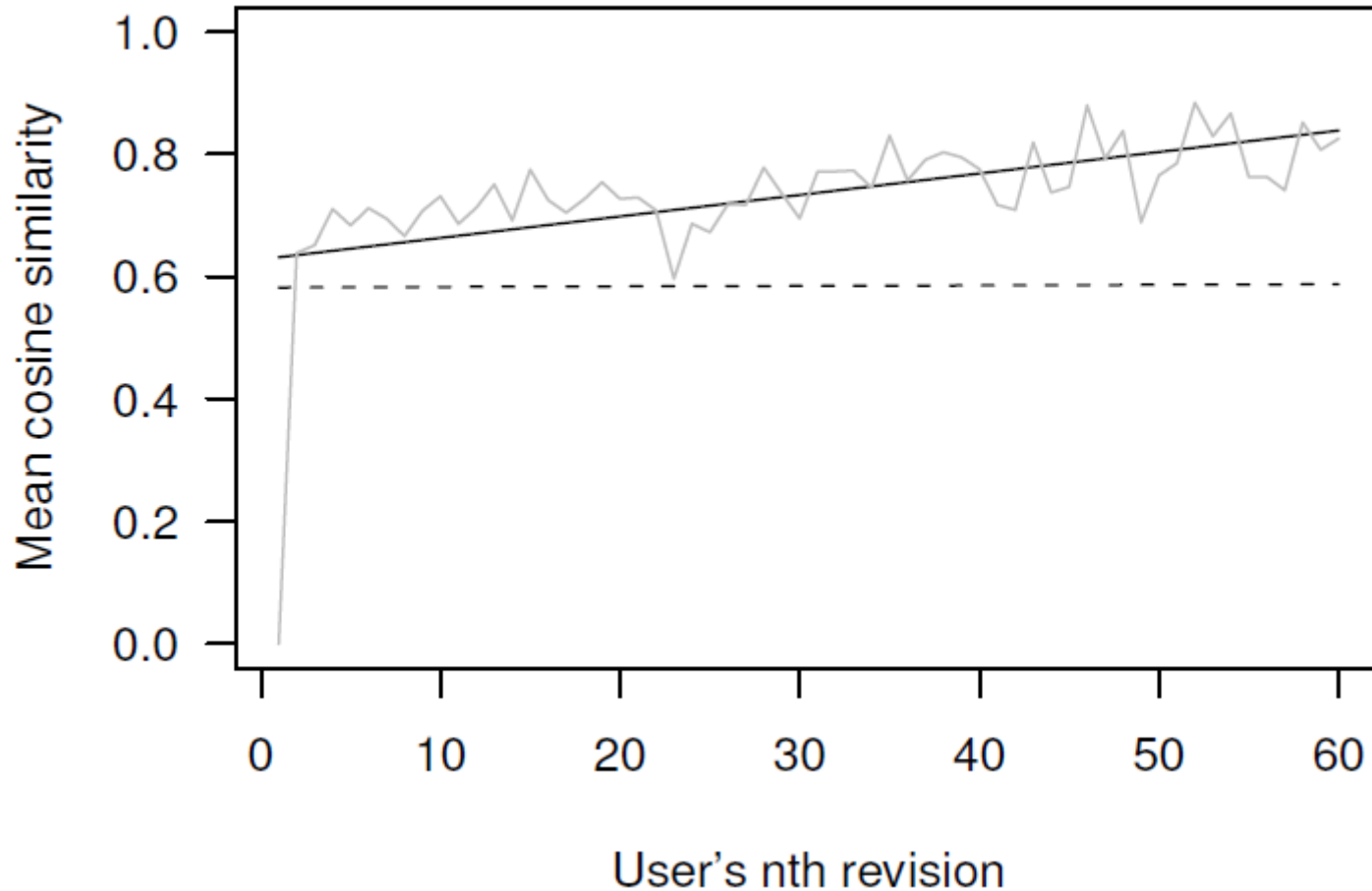


change in specialization

(individual level)

Initial	Now				
	Blocks	Points	Notes	Tags	<i>none</i>
Blocks	15	0	0	0	1
Points	0	4	0	0	3
Notes	4	0	0	0	2
Tags	0	0	0	0	0
<i>none</i>	2	2	0	1	3

change in individual specialization



so we've found that

there **exist specialists** by work type.

block specialization is the most popular.

experienced users all specialize in **blocks**.

design implications

modal
interfaces

composition of
work units

intelligent task
routing

neighborhood
campaigns

intelligent
recruiting

community
awareness

future work

qualitative
studies

cultivation of
specialization

place
attachment

thank you!

also, Cyclopath team, GroupLens
Research, Cyclopath users, NSF,
my family and my friends.

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Cyclopath: <http://cyclopath.org>, @cyclopath_hq

GroupLens: <http://grouplens.org>, @grouplens

