

# Surveying bicycle workers for occupational risks:

Recruitment strategies, lessons  
learned and preliminary results

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Anything new?



1902 US postal stamp depicting a bicycle messenger



© Musée McCord

**Photographie** : *Facteur télégraphiste à bicyclette, square Dominion, Montréal, QC, vers 1935*

Don de la succession de M. Omer Lavallée (MP-1992.22.36)

# Objectives



“The culture, health, safety and work organization of cyclist workers”

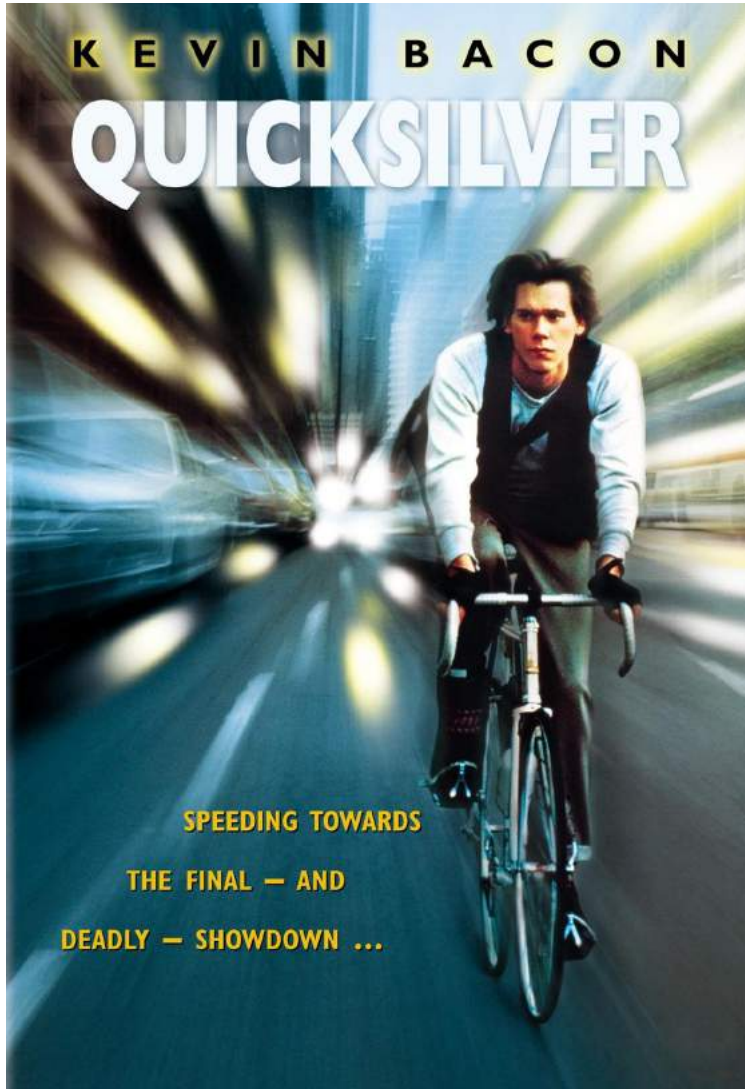
- Portrait of the variety of work using bicycles
- Assess risk factors and collision history
- **Online survey on the health, safety and work organization of various types of cyclist workers**
  - The process: recruitment, incentive, completion
  - Compare respondents in different work categories on risk taking behaviour and collision

# Few studies

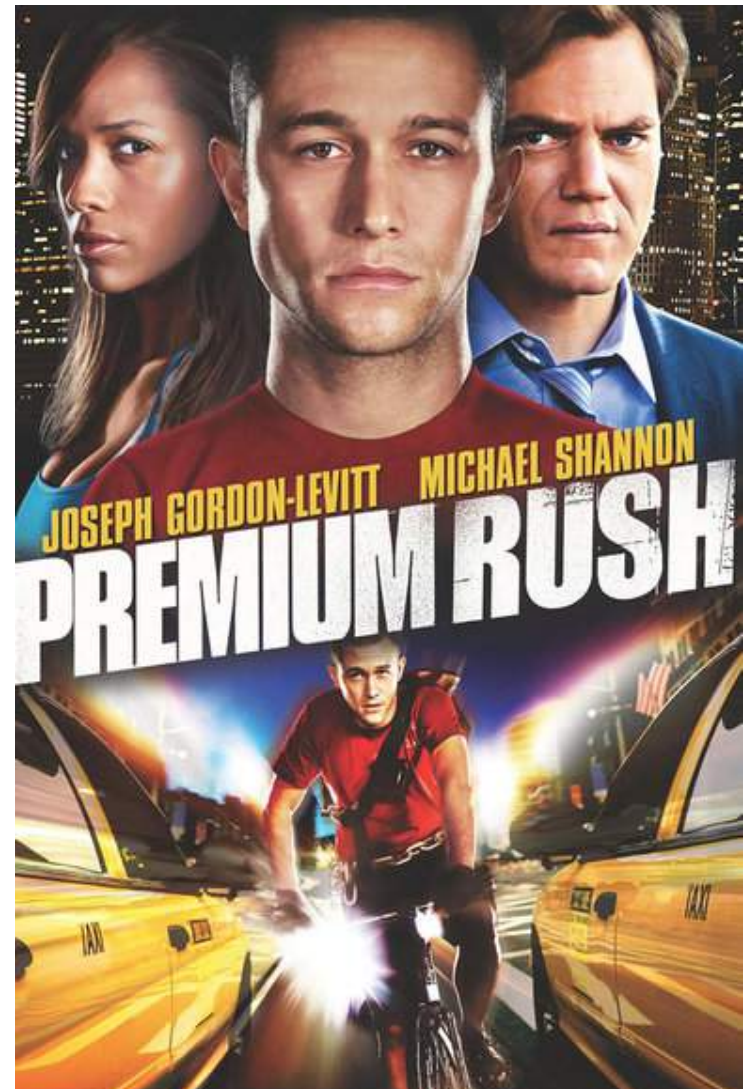
## Mostly on messengers

- Survey of 113 couriers in Boston,
  - 70% had suffered from injury resulting in days lost from work
  - Mostly collisions and avoiding collisions with motor vehicles
  - Dennerlein and Meeker (2002)
- Secondary analysis 2008-2014 cyclist struck by motor vehicle, New York CBD
  - 34% were working, Latino, **fewer** distracted or intoxicated
  - Heyer *et al.* (2015)
- Work related roadway accidents 2000-2008, Quebec
  - Matched SAAQ (license and insurance) and CNSST (workers comp) records
  - 83 collisions, 1.6% (“Other: Moto, bikes, ATV”)
  - Pignatelli et al. (2013)

# Bike messengers in popular culture



Quicksilver 1986



Premium Rush 2012

# Food delivery platforms

~~Sharing economy~~ or *Gig economy*

US, 2015



Germany, 2014

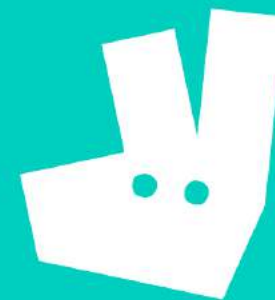


foodora



France, 2011

UK, 2013



deliveroo

A vast and growing industry:  
Converging through mergers and acquisitions



***Delivery Hero***





<http://lapetitereine.com>

Ecologic logistics solutions, France 2001

# An urban solution to last mile logistics?

- B2C development
- Managing the increase in small parcel delivery

# Within large traditional organizations

## Australia Post Last mile delivery

### Building capacity in our delivery network

We're always on the lookout to do things differently to provide better services for our customers and provide a sustainable future for our business.

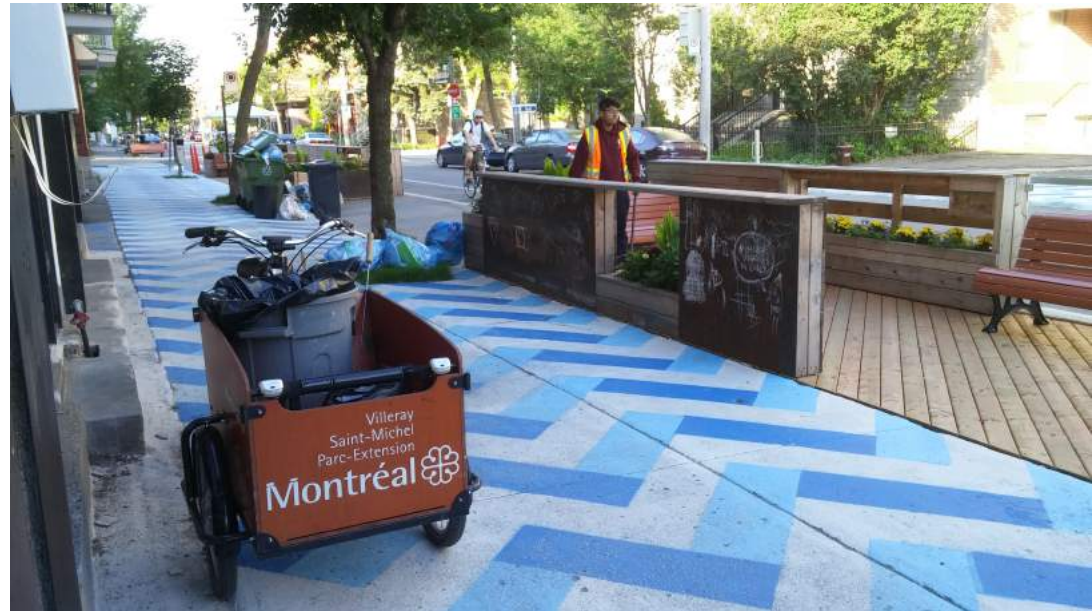
Our goal is to create a delivery network that's designed around the customer, so that our posties deliver on a vehicle that suits the terrain and can safely and securely carry a range of customer product, whether that's letters or bulkier packages.

This year we trialed a trike at a number of our delivery facilities. The trike has a larger carrying capacity than our motorbikes and electric bikes, and features a large lockable compartment to secure letters and parcels on the rear and a carrier on the front.

We're also looking abroad to see what other postal agencies, such as New Zealand Post, are using to give us ideas for what might be suitable for Australia's large and diverse geography. We plan to trial a number of vehicles next financial year.

# Public and private mobile services

Neighborhood parklet maintenance,  
Montreal, 2017



CityCycle maintenance,  
Brisbane, 2017

# The *New Bicycle Worker Economy*

- Short-distance movers
  - Bicycle and trailer or cargo bikes



# The *New Bicycle Worker Economy*

- Proximity markets
- Tricycles
  - Shorter travel distances



# The *New Bicycle Worker Economy*

## Café Pista

- Also:
  - Hair dresser
  - Veterinary
  - Social worker
  - Florist and delivery
  - Cyclists' « AAA »: roadside assistance
  - Alleyway knife sharpener
  - Mobile publicity (Human Billboard)
  - Rickshaw
  - Delivery: *foodora*, *UberEats*
  - Virtual restaurants: *Freshmint*, *Vélo Burrito*



# Very distinct « worlds »

## Bike messengers, others



[www.facebook.com/mtlbma/?fref=nf](https://www.facebook.com/mtlbma/?fref=nf)

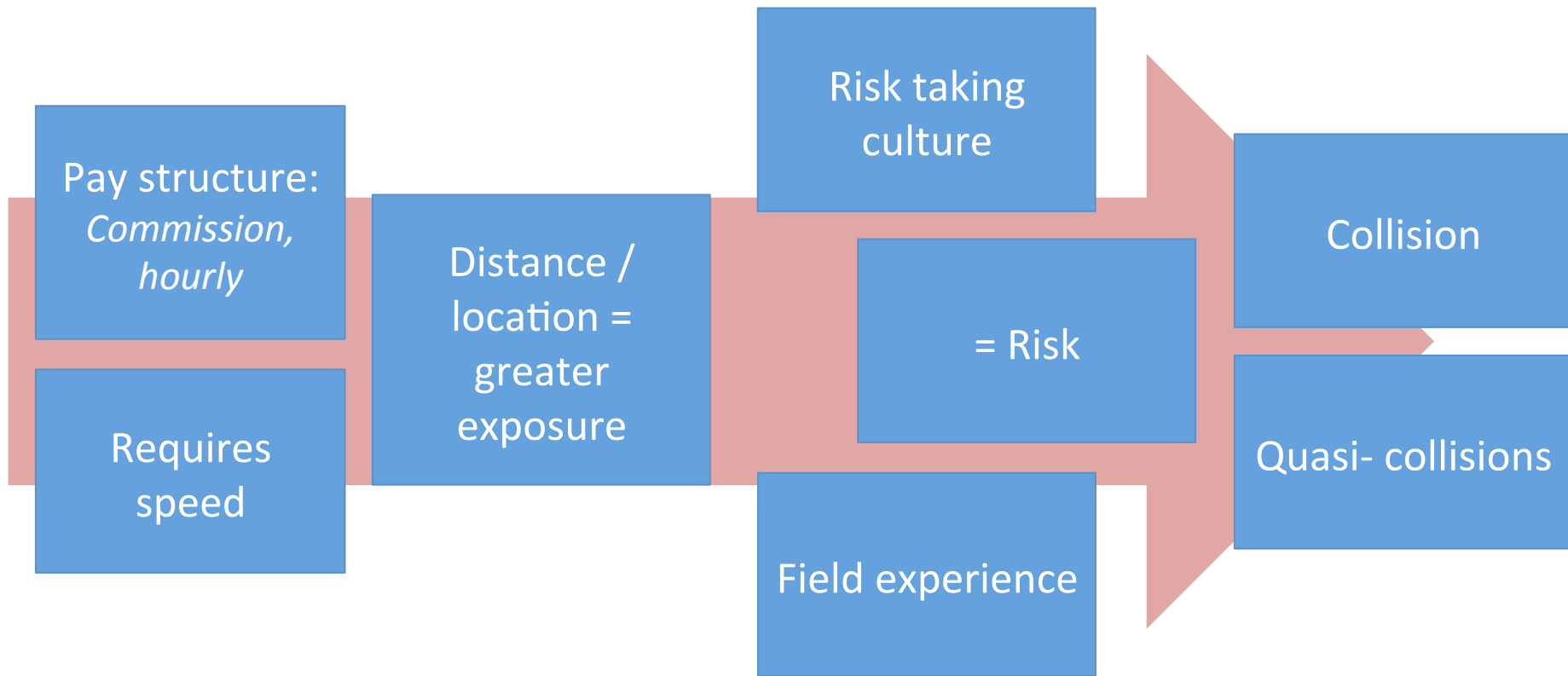
[larevue.thetops.fr/foodora-la-revolution-culinaire-parisienne/](http://larevue.thetops.fr/foodora-la-revolution-culinaire-parisienne/)

# Methods

- Online survey on the health, safety and work organization of various types of cyclist workers
  - July 2017 and August 2018 (ongoing)
  - Advantages and pitfalls of various strategies to recruit and administer surveys
- Developed based on literature and interview process
- Hypothesized interplay between
  - Individual characteristics and behaviour traits
  - Employment characteristics and equipment
  - Exposure (work environment)
- And collisions and quasi collisions

# “Making a living” while delivering

## A delicate balance



# Recruitment

A small, scattered, hard to reach population

- Snowballing interview participants
  - Word of mouth
- Tablet survey during events
  - Mostly bicycle messenger community
- Flyer distribution
  - On the streets, on the go
- Link to social network (FB page)
- Recruitment was conducted first in Montreal
  - Then more generally in English and French-speaking countries



**25th edition of the Cycle Messenger World Championships in Montreal**

A survey flyer with a background image of a cyclist. The text is in English and French. It asks if the respondent uses a bicycle for work and provides a survey link. Logos for UQAM, IIRST, and the Association des messagers et messagères à vélo de Montréal are at the bottom.

**THE HEALTH, SAFETY AND WORK ORGANIZATION OF CYCLIST WORKERS**

Do you use a bicycle as part of your job in order to make deliveries or provide other services?

We are conducting a survey on workers who use bicycles for their jobs, their specific characteristics, work organization, risks associated with this type of work as well as any work-related traffic accidents experienced during work hours.

Your participation in this project is important. The questionnaire should take 12 to 15 minutes to complete.

<https://fr.surveymonkey.com/r/MKXC9RL>

For more information: [job.velo.uqam@gmail.com](mailto:job.velo.uqam@gmail.com)

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In collaboration with: Association des messagers et messagères à vélo de Montréal

# Recruitment

## Lessons learned

- Tablets not useful
  - No time to answer, too festive, too busy, interruption
- Stronger community in bike messengers
  - Burgeoning for food delivery, stronger in Europe
  - Large logistics company not reached
- Flyer most effective with presentation of individual benefits
  - “What’s in it for me?”
- Active social networks
  - Used to identify issues of interest

	Food delivery (n=73)	Document delivery (messenger) (n=65)	Other (n=31)	Total (n=169)
<b>Age category</b>				
Less than 20	6.45	1.75	0	3.4
20-24	35.48	26.32	25	29.93
25-29	24.19	43.86	28.57	32.65
30-34	16.13	7.02	10.71	11.56
35-40	12.9	8.77	7.14	10.2
40+	4.84	12.28	28.57	12.24
<b>Gender</b>				
Women	9.68	21.05	28.57	17.69
Men	83.87	73.68	67.86	76.87
Other	6.45	5.26	3.57	5.44
<b>Highest educational attainment</b>				
Other	1.61	1.75	7.14	2.72
High School	17.74	31.58	7.14	21.09
Technical	17.74	24.56	21.43	21.09
University undergraduate	38.71	29.82	42.86	36.05
University graduate	24.19	12.28	21.43	19.05

# Results

## Risk-taking

	Food delivery	Document delivery (messenger)	Other	Total
<b>Do you wear a helmet when you are working?</b>				
Never	8.22	20.9	18.75	15.12
Rarely	2.74	1.49	0	1.74
Sometimes	2.74	8.96	6.25	5.81
Frequently	5.48	11.94	3.12	7.56
<b>Always</b>	<b>80.82</b>	<b>56.72</b>	<b>71.88</b>	<b>69.77</b>
<b>When you are biking on the job, are you generally willing to make a <b>DETOUR</b> in order to use a bike path?</b>				
<b>Yes</b>	<b>26.09</b>	<b>16.13</b>	<b>40</b>	<b>24.84</b>

# Results – Collision

	Food delivery	Document delivery (messenger)	Other	Total
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## OVER THE LAST MONTH, what was the MOST SERIOUS injury you suffered?

<b>Total reported injuries</b>	<b>56.16</b>	<b>35.38</b>	<b>29.03</b>	<b>43.2</b>
Sprain	6.85	3.08	0	4.14
Broken limb (arm, leg, etc.)	5.48	3.08	6.45	4.73
Open wound (requiring stitches)	0	3.08	0	1.18
Burn, significant scrape	6.85	7.69	0	5.92
Concussion	2.74	1.54	0	1.78
<b>Bruises</b>	<b>20.55</b>	<b>7.69</b>	<b>16.13</b>	<b>14.79</b>
Frostbite	2.74	0	0	1.18
<b>Inflammation/tendonitis</b>	<b>10.96</b>	<b>9.23</b>	<b>6.45</b>	<b>9.47</b>
NO injuries	43.84	64.62	70.97	56.8

## OVER THE LAST MONTH, what was THE CAUSE of the accident you were involved in that resulted in this injury?

Lack of attention	5.56	6.25	6.45	5.99
Using phone or walkie-talkie	5.56	0	3.23	2.99
Alcohol or drug use	1.39	0	3.23	1.2
<b>Cut off by a car, truck or bus</b>	<b>15.28</b>	<b>10.94</b>	<b>3.23</b>	<b>11.38</b>
Being too close when passing a car, truck or bus	1.39	1.56	0	1.2
Door opening	6.94	4.69	3.23	5.39
Pedestrian coming out of nowhere	2.78	1.56	0	1.8
Other cyclist	1.39	3.12	3.23	2.4
<b>Condition of the road (potholes, etc.)</b>	<b>12.5</b>	<b>7.81</b>	<b>9.68</b>	<b>10.18</b>
Black ice/ice storm	4.17	0	0	1.8
Construction-related activities	0	1.56	0	0.6
NO collision	43.06	62.5	67.74	55.09

# Conclusions

## Fast changing environment

- Multiple new services and organizational models
- Combined use of various strategies = reasonably sized sample, but not representative
  - Universe cannot be defined
    - fluctuating
    - hard to reach
- Some groups not reached
- Workers of different services have different characteristics, behaviours and self-reported collisions