Cargo Culture:
What the story can tell us.

Dr. Pete Sykes

From Newcastle. For the world.

Background: eHUBS







Interreg
EUROPEAN UNION
North-West Europe
eHUBS
European Regional Development Fund

Background: eHUBS

- The initial research plan was to identify and quantify themes in documents related to electric based shared mobility using Qualitative Data Analysis.
- This revealed a shortfall in academic research in the use of ECargo Bikes in a shared mobility context.
- The focus shifted to addressing that gap.
- An evolving methodology previously used in Newcastle was adopted for the study. Its goal is to identify the drivers of an infrastructure project or a policy initiative and the uncertainties within it.
- Findings and policy implications are reported here.

Method

Basis of Method 1

Scenario Planning:

A scenario is a narrative of a potential future

Formed of tacit and explicit knowledge

The scenario tells a story which links various inter-dependent events or conditions that contribute to that future.

Stakeholders are invited to critique the story and the relationships in it drawing on their tacit knowledge as much as explicit facts.

”Storytelling reveals meaning without committing the error of defining it.”

Newcastle University

Cross Impact Model

Build up chains of causality:
A depends on D, B depends on A, C depends on B and A etc.

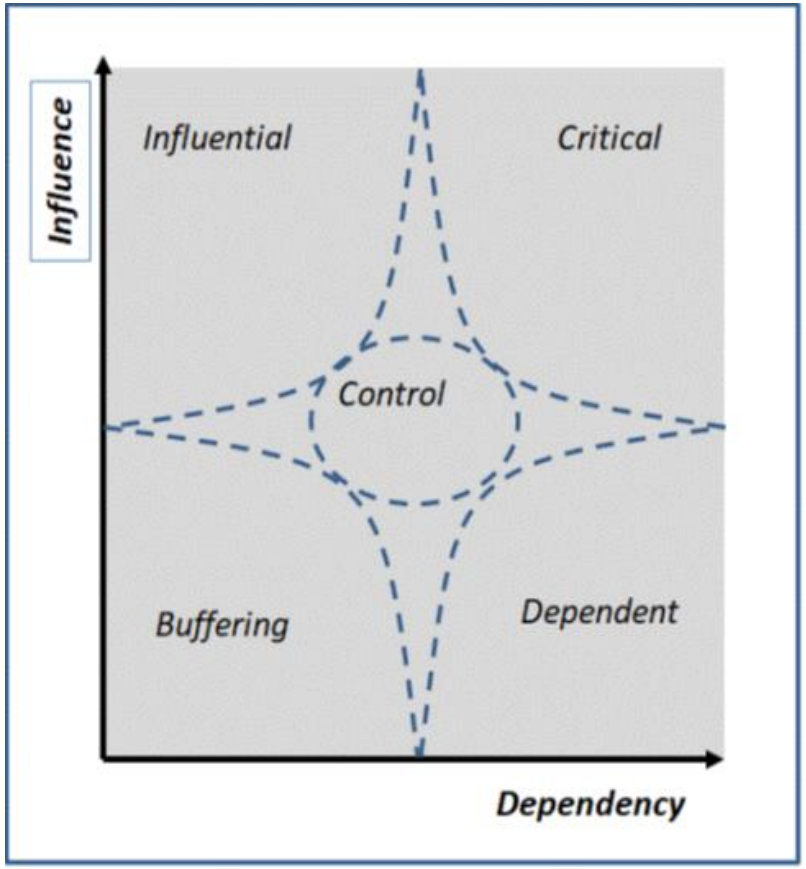
Head of chain == Influence,
Tail of chain == Dependency

	A	B	C	D
A				*
B	*			
C	*	*		
D			*	

Influence Matrix

$$I_i = \sum_{d=1}^{depth} \sum_{j=1}^{n} s_d(i,j) * w(d)$$

$$D_j = \sum_{d=1}^{depth} \sum_{i=1}^{n} s_d(i,j) * w(d)$$



Case Study

ECargo Case Study: Normative Scenario

Scenario derived from textual adjacency analysis of Ehubs related documents.

Focus on personal use while carrying “stuff” rather than access to a PT hub or last mile delivery.

- Set a few years in the future, John and Anne have just sold their car, bought an ECargo bike for local trips and joined a car club for longer journeys.
- The scheme operators whose ECargo bike they had been using had withdrawn the ECargo offering due to cost and administration issues.
- Costs and admin had risen because Govt had implemented new Legislation and Regulation in reaction to safety issues.
- Previously, John and Anne had been car drivers and cyclists who also hired a hub based ECargo bike on occasion and found it useful.

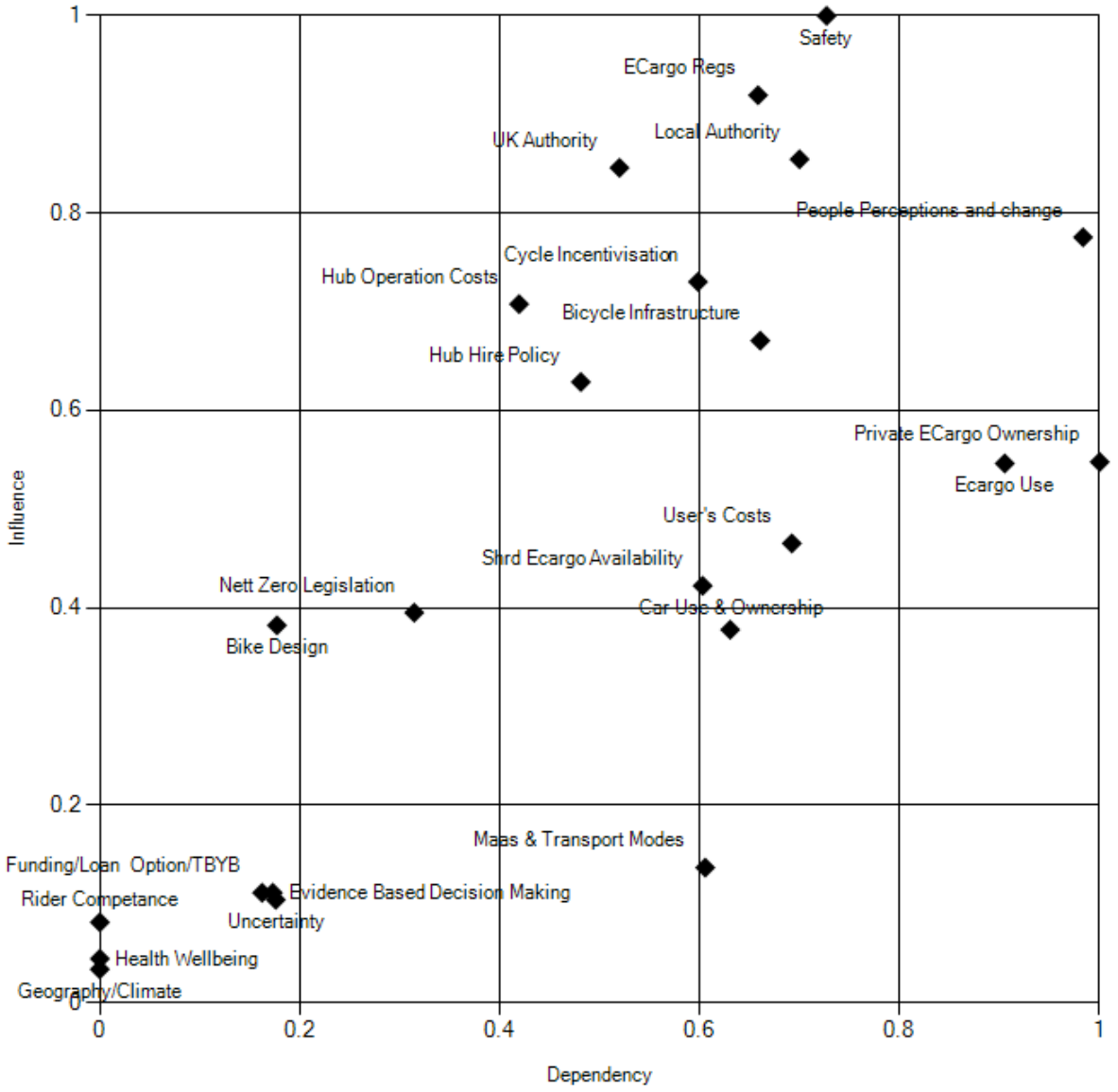
ECargo Case Study: Elicitation

- Ask if scenario is plausible.
- Explain variables derived from textual analysis
- Elicit new variables
- Explicitly query causality

- Data from representatives of eight of the cities that have installed eHUBS sites.
- Sample Bias: All very involved in creating eHUBS

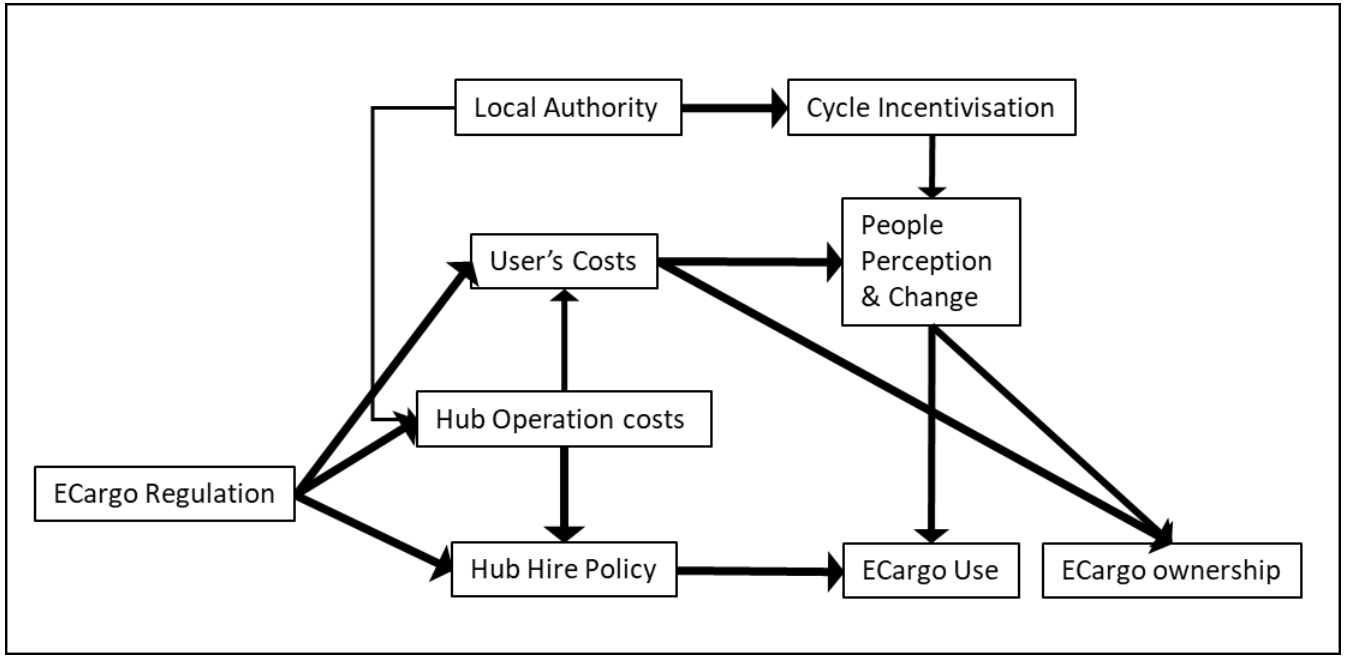
Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	N1	N2	N3	N4
1 Car use and ownership	--		X		X										X			X
2 Private Ecargo Ownership		--	X		X													
3 Ecargo Use			--		X										X			X
4 Bicycle Infrastructure		X	X	--						X					X			X
5 User's costs	XX	X			--										X			
6 Existing shared mobility bike scheme.			X			--									X			
7 Shared Ecargo availability			X				--										X	
8 Hub Hire Policy			X		X			--							X		X	X
9 Operator Costs					X		X	X	--							X		X
10 Safety			X							--	X				X		X	X
11 UK Authority Planning				X							--	X	X					
12 Local Authority Planning					X							--				X		
13 Ecargo Regulation		X	X					X	X	X			--		X			X
14 User Insight														--				
Behaviour change	X	X	X												--			X
Communication		X	X													--		
Uncertainty		X													X		--	X
Maas & transport modes	X	X													X			--

ECargo Case Study: Consolidated Results



Outputs and Policy Implications

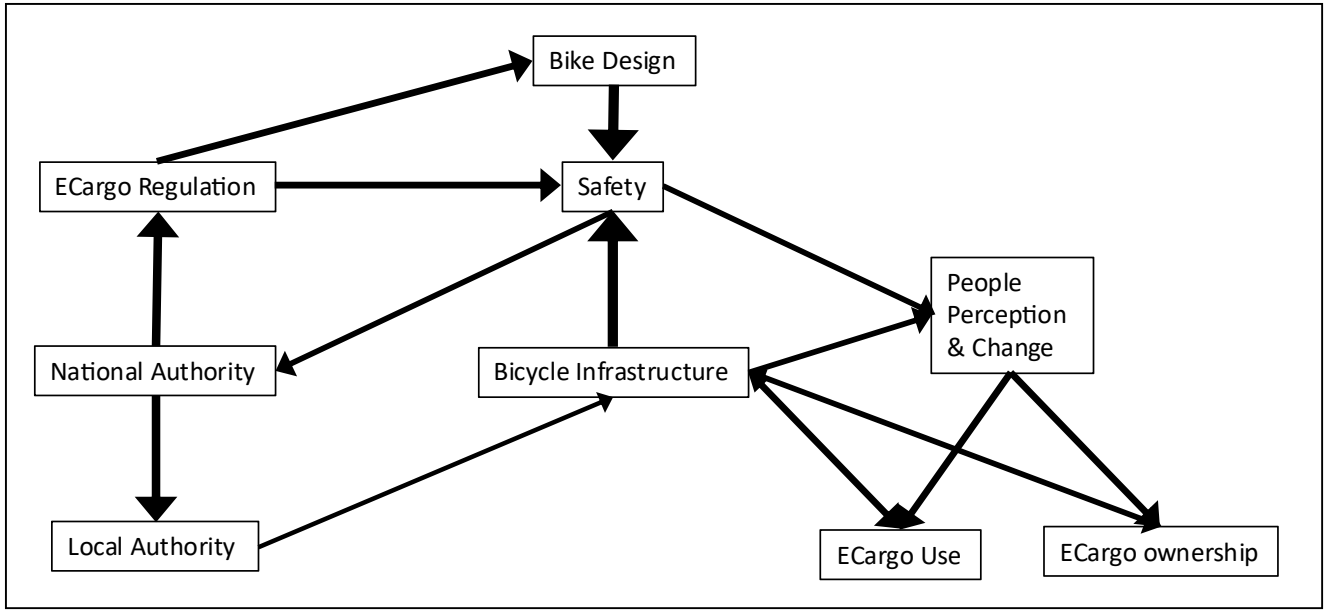
ECargo Case Study: Regulation and Costs



Causality path from ECargo regulation via hub operational costs to users' costs and onto public perception and change and hence use.

Policy requirement to be sympathetic to cost in regulation of heavier electric bicycles so as not to damage an emergent cargo bicycle culture.

ECargo Case Study: Safety and Regulation



Perception and cycle culture is the key to growth of sustainable cargo bike use

Safety is a strong policy driver central to this influence loop.

Safety is affected by policies on:

- Bike Design
- Bike Infrastructure
- Regulation

Three Policies

- Bicycle infrastructure
- Cargo bike design
- Rider regulation
- Re-introduce : Initiatives in promoting last mile delivery

Bicycle Lanes: Road or Pedestrian Area



Bicycle infrastructure is moving from bus lanes or marked areas of road space to be closer to the pedestrian space to encourage cyclists to use bicycles more and feel safer.







Audience Participation: How many Cargo Bicycles?













Audience Participation: Who is time stressed?



All of them.





One is working against time for competitive honours.

The rest are working against time for a wage.



Potential Conflict in Policy

- Bicycle infrastructure is now more oriented to segregation of cars and bicycles.
- … which moves it closer to pedestrian spaces.
- Cargo bikes are getting bigger and heavier
- … and are ridden with delivery time and productivity pressures.

Need to reassess preconceived notions of what is a "Cargo Bicycle" and who is vulnerable: the driver, the rider, or the pedestrian?

Review

By participants in the Ehubs Project

Policy Question

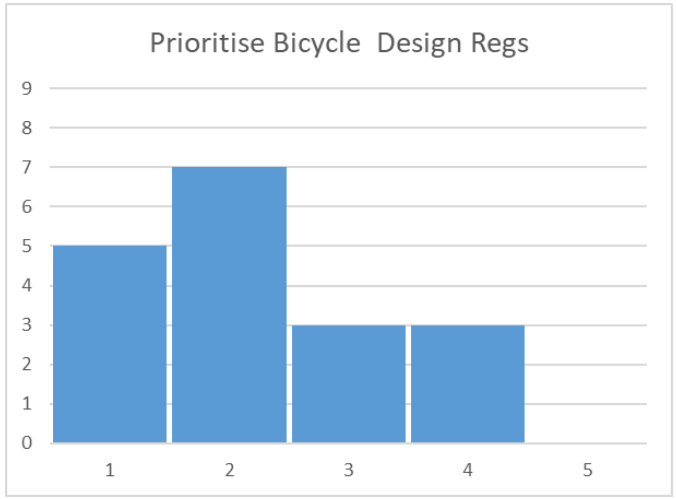
What form should future policy take in managing the risks posed by heavy Ecargo bicycles?

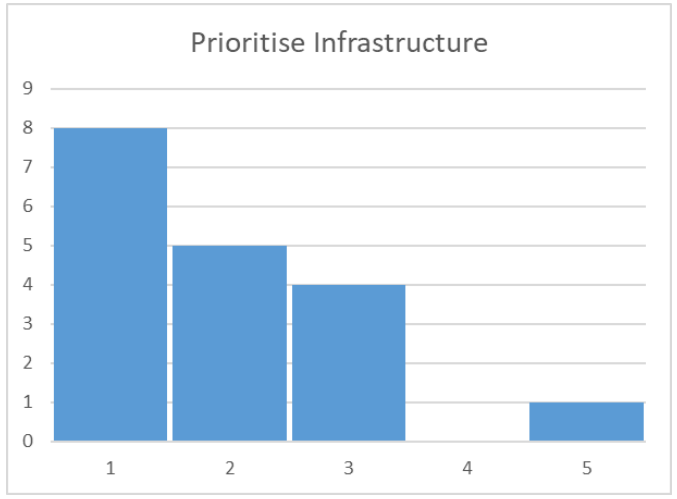
		True	False
1	Nothing, it's not a problem.	1	18
2	Nothing, it will sort itself out without intervention.	1	18

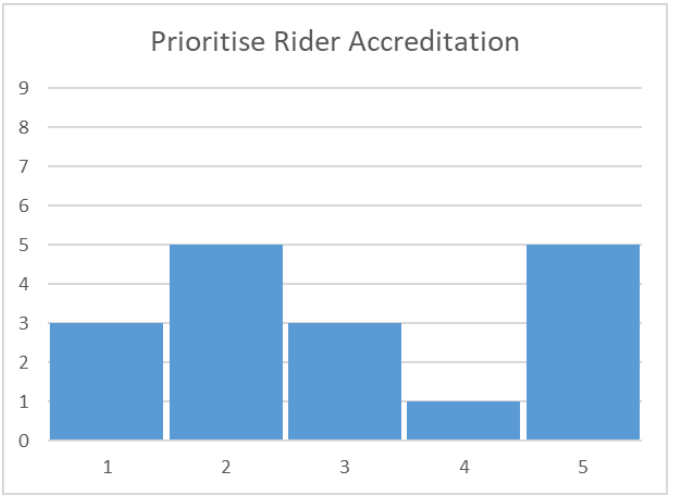
Policy Questions

Rank Interventions by priority 1 – 5 (Low – High) 18 respondents

		Min	Max	Median	Mode
3	Re-write the Construction and Use Regulations which define a bicycle and hence control access to bicycle infrastructure.	1	4	2	2
4	Change the design guidance for bicycle infrastructure to cater for heavier ECargo bicycles.	1	5	2	1
5	Licence riders of heavier ECargo bicycles.	1	5	3	5







Potential Conflict in Policy

- The design of bicycle infrastructure is increasingly focused on separating cars from bikes.
- … which enhances the connection to pedestrian areas.
- Cargo bikes are becoming larger and more substantial.
- … and are used under the pressures of delivery timelines and productivity.

And there is no clear consensus within the academic, planning and consulting communities about the best course of action to take to alleviate the emerging problem.

Thank you… and Questions

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