



# Transformation in a changing climate

**Bilbao 2019**

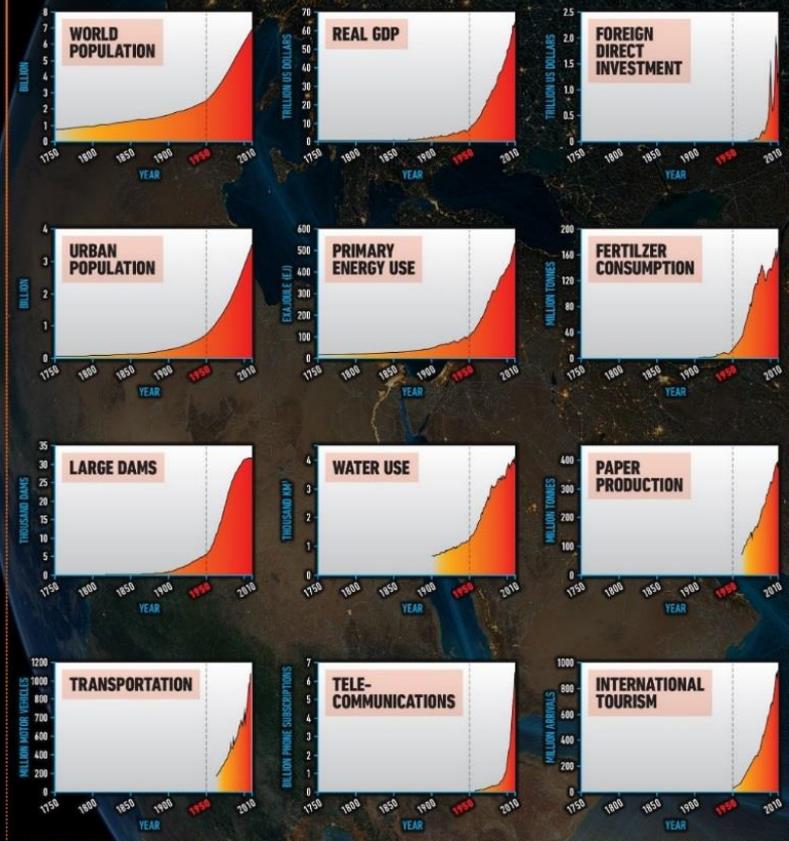
**Ioan Fazey**

**Environment and Geography**

**University of York, UK**

# THE GREAT ACCELERATION

## SOCIO-ECONOMIC TRENDS



## EARTH SYSTEM TRENDS



REFERENCE: Steffen, W., Broadgate, L., Deutsch, O., Gaffney, C. & Ludwig (2015), The Trajectory of the Anthropocene: the Great Acceleration, Submitted to *The Anthropocene Review*.  
 MAP & DESIGN: Félix Pharand-Deschênes / Globaia



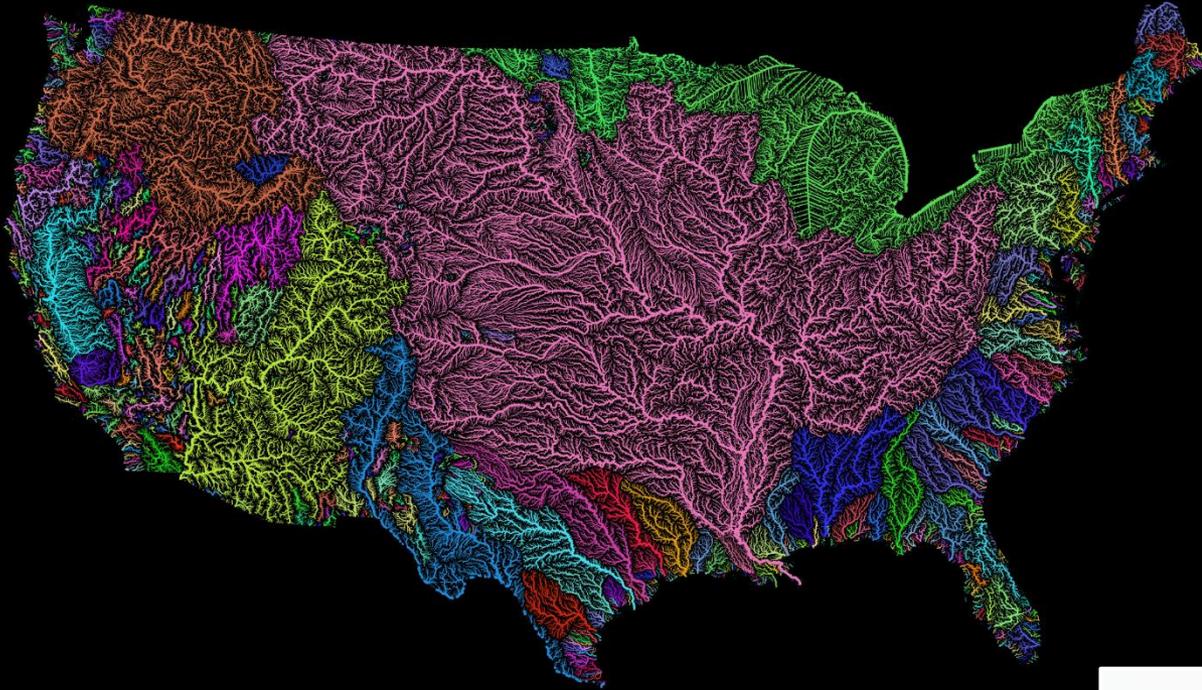
**Transformations are already happening:  
We are at the end of the world as we know it**



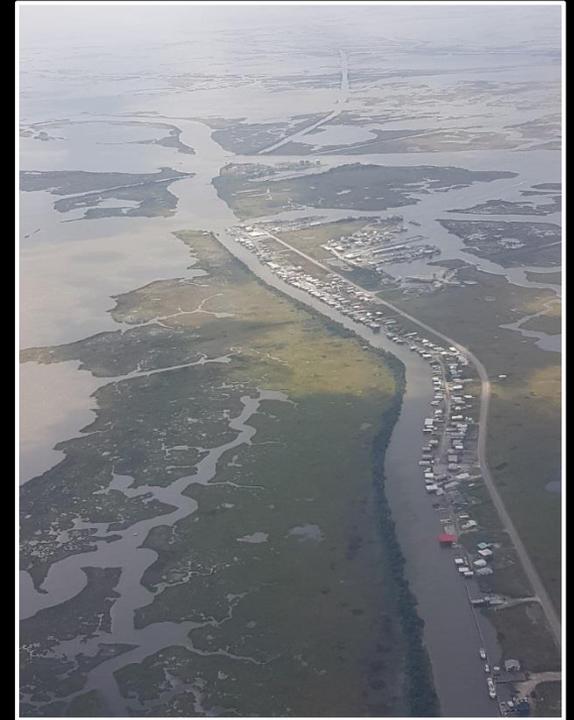
**Emergence of new  
challenges - Louisiana,  
U.S.A.**



# History & Development



[Map by Robert Szucs](#)  
[www.grasshoppergeography.com](http://www.grasshoppergeography.com)

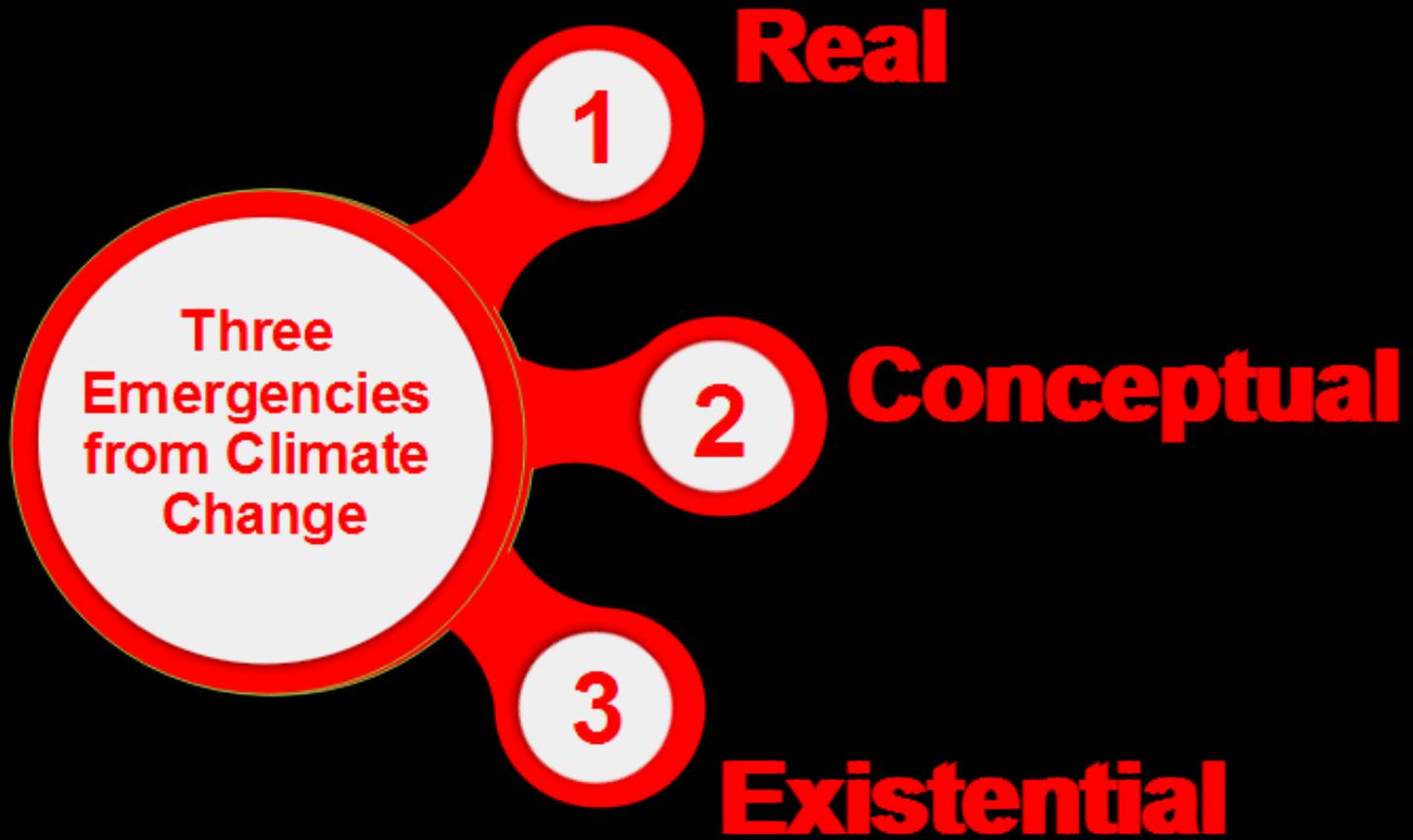




CENTER for  
PLANNING  
EXCELLENCE



University  
of Dundee



**We urgently need to think and act differently at the  
end of the world as we know it**



Please note:  
The post-apocalyptic  
fiction section  
has been moved to  
Current Affairs

**Why have these kinds of  
challenges emerged?**



**Science, research & technology**  
Many benefits, but also unleashed challenges



**Unleashed  
enormous  
capacity for harm**

All images: [pngtree.com](https://www.pngtree.com)

**Challenge #1**



All images: pngtree.com

# Unintentional highly interconnected challenges

## Challenge #2

**We have unleashed things we  
cannot control or understand**

**Just like the story of...**



Disney

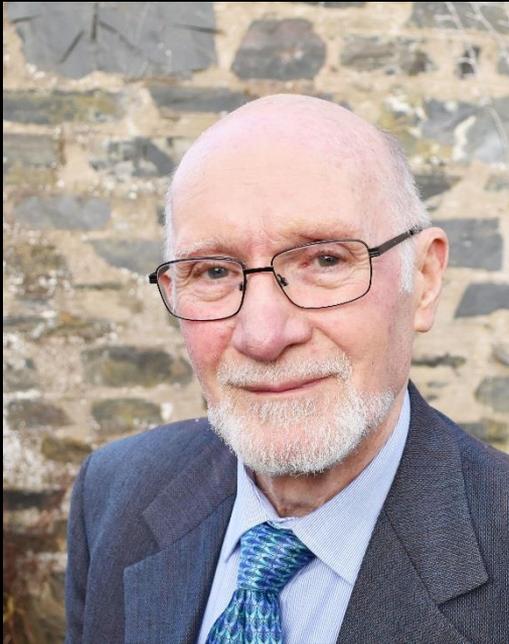
...You, hell's miscreate  
abortion,  
Is this house doomed to  
perdition?  
Signs I see in every portion  
Of impending demolition.  
Servant, cursed and senseless,  
Do obey my will!  
Be a broom defenseless,  
Be a stick!  
Stand still!

## The 'Sorcerers Apprentice'



[pngtree.com](https://www.pngtree.com)

# The 'Sorcerers Apprentice': Tony Hodgson's version



H3Uni.org

There is no  
sorcerer

We are all  
apprentices at the  
end of the world as  
we know it

**We produce lots of 'knowledge'  
but not necessarily 'wisdom'**

**Challenge #3**

# Good at knowledge, not Wisdom

**Knowledge  
(research)** + **What is  
good/right  
(ethics)** + **What is beautiful  
(aesthetics)**

Hanlon, P. et al (2012). Perspectives in Public Health 132, 313-319.



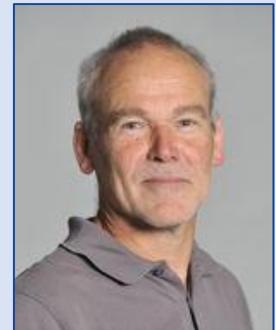
**Universities need to  
develop wisdom,  
not just knowledge**



Maxwell, N. (2014) How universities can help create a wiser world. Imprint Academic, Exeter, UK

**Lack of accountability of  
science to society...**

Kläy, A. et al 2015. Futures. 65: 72-85



# **Summary so far**

**We need very different ways of thinking/approaching challenges**

**We are all apprentices**

**We need to question deep assumptions**

**What does this mean for us as  
'researchers'?**

**Are we doing things right?**

**What are the right things?**

**What is right?**

**What should I be doing?**

**Who should I be?**

# Three questions...

1. What should I be doing?

2. What changes in the 'system' are needed to help me do this?

3. How can we be creative to make this happen?

**1. What should I be doing at the end of the world as we know it?**



**What would you do at the end of  
the world as we know it if you had:**

**\$**

**Time**

**Expiry  
date**

**What do you think you  
should you focus on?**

# **Key message:**

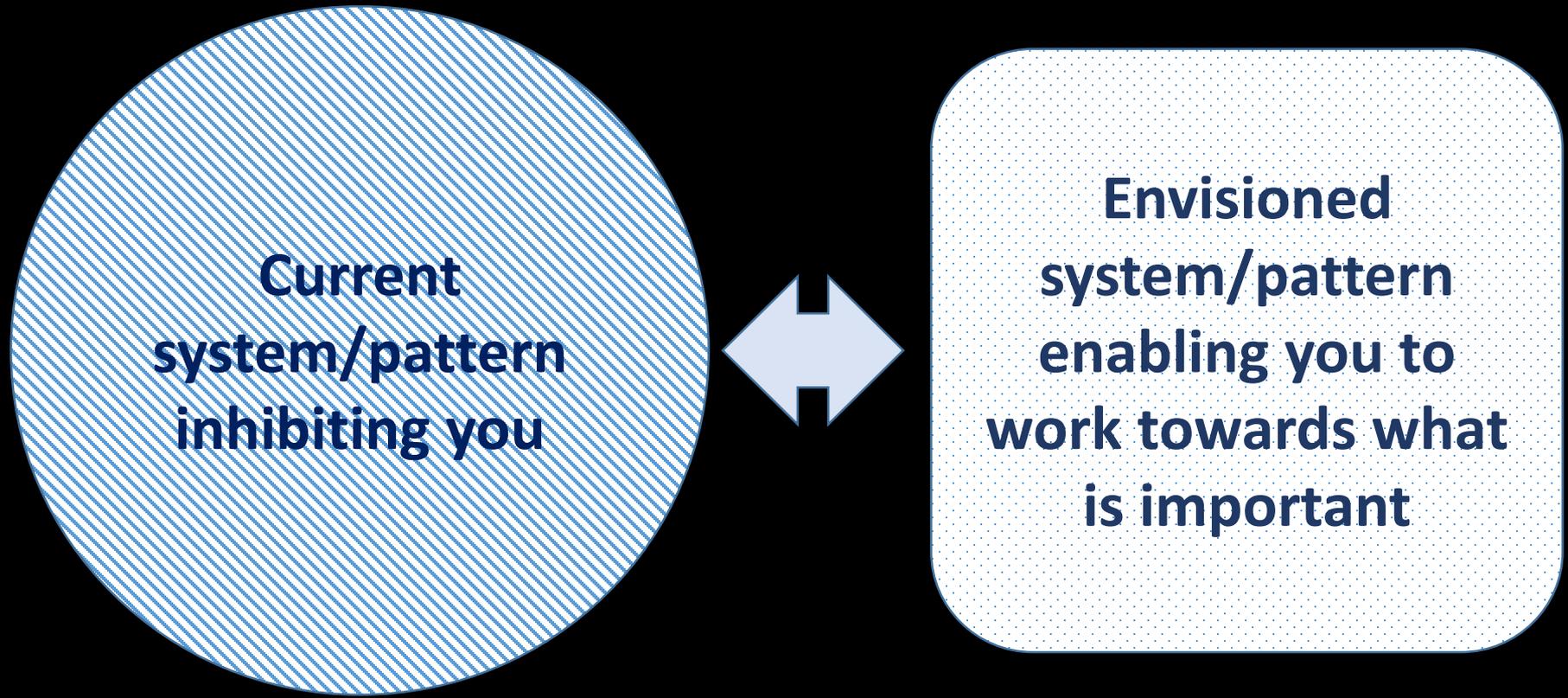
**At the end of the world as we know it  
we need to re-evaluate:**

**What it means to be a researcher**

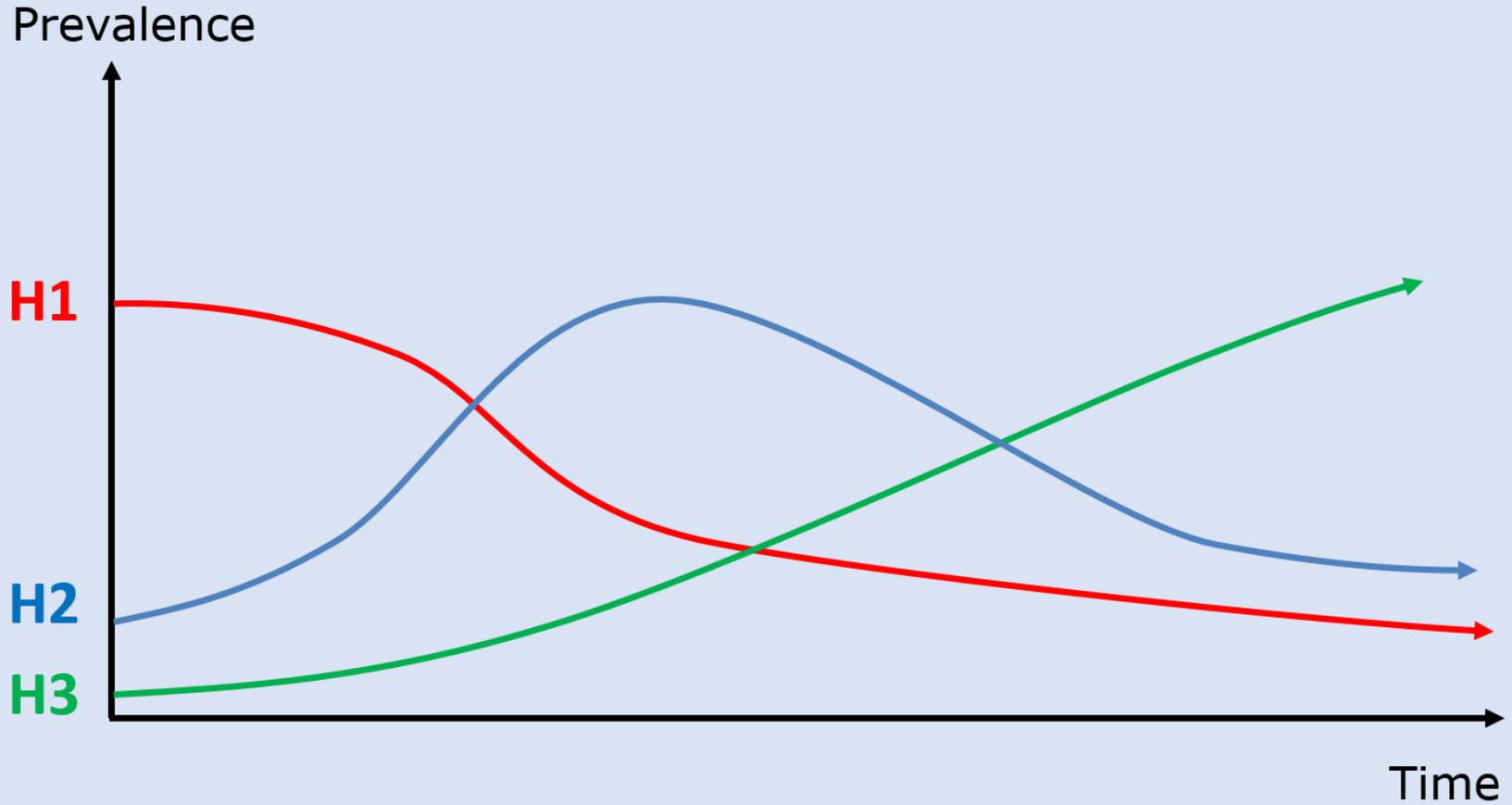
**Assumptions**

**Who we are/should be...**

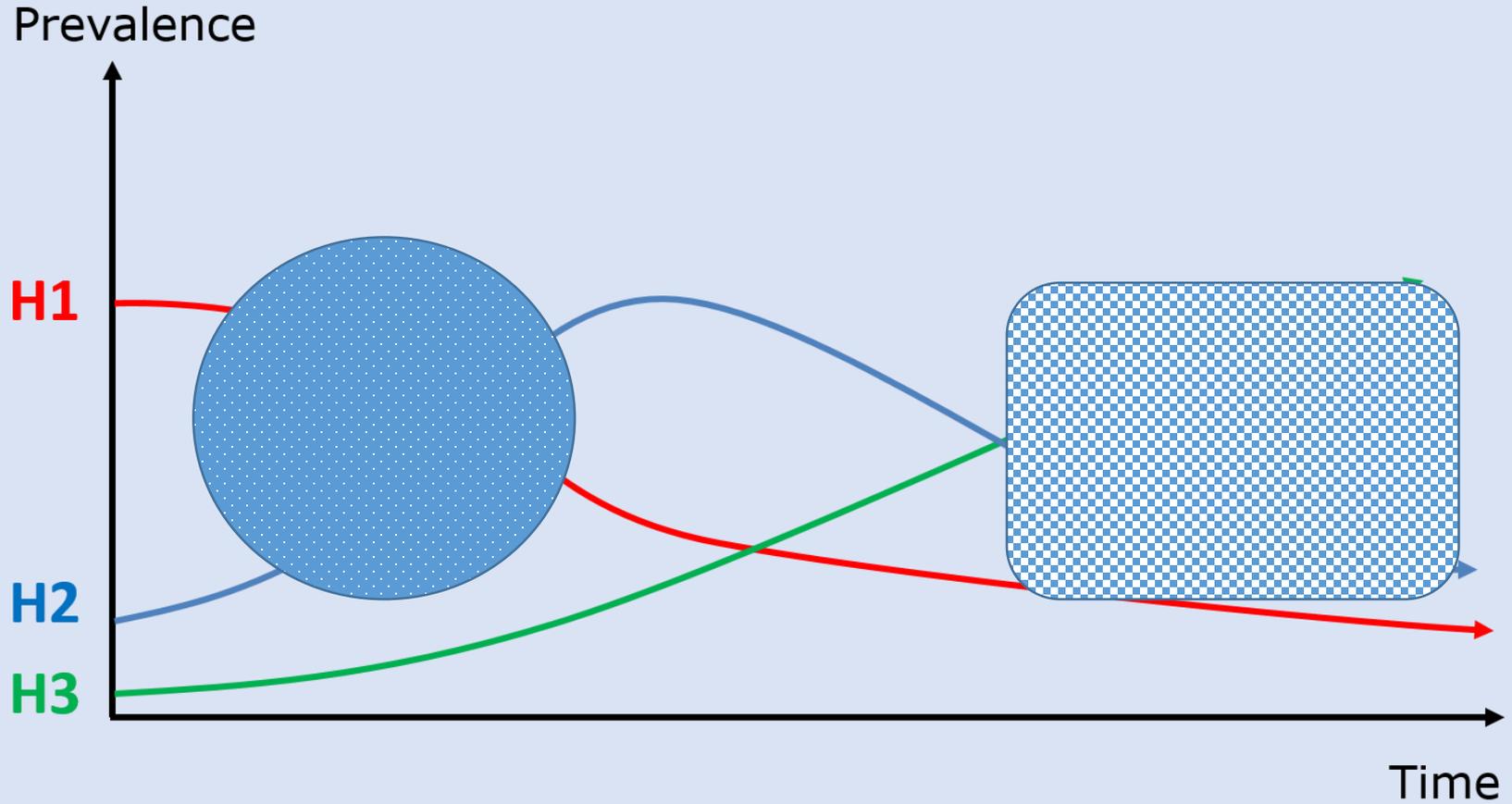
## 2. What system changes are needed to help you change your practice/ work patterns?



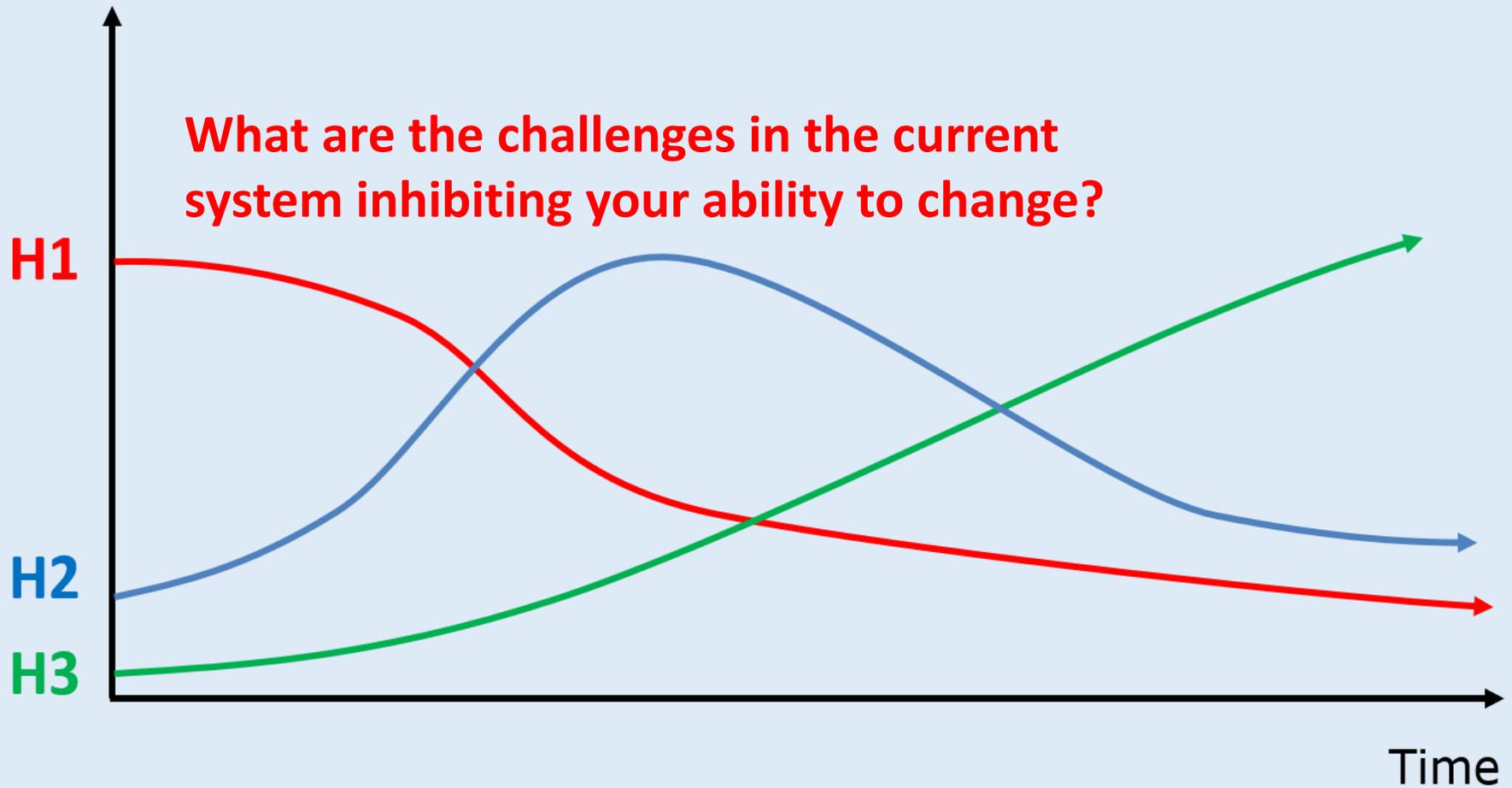
# Three Horizons Practice



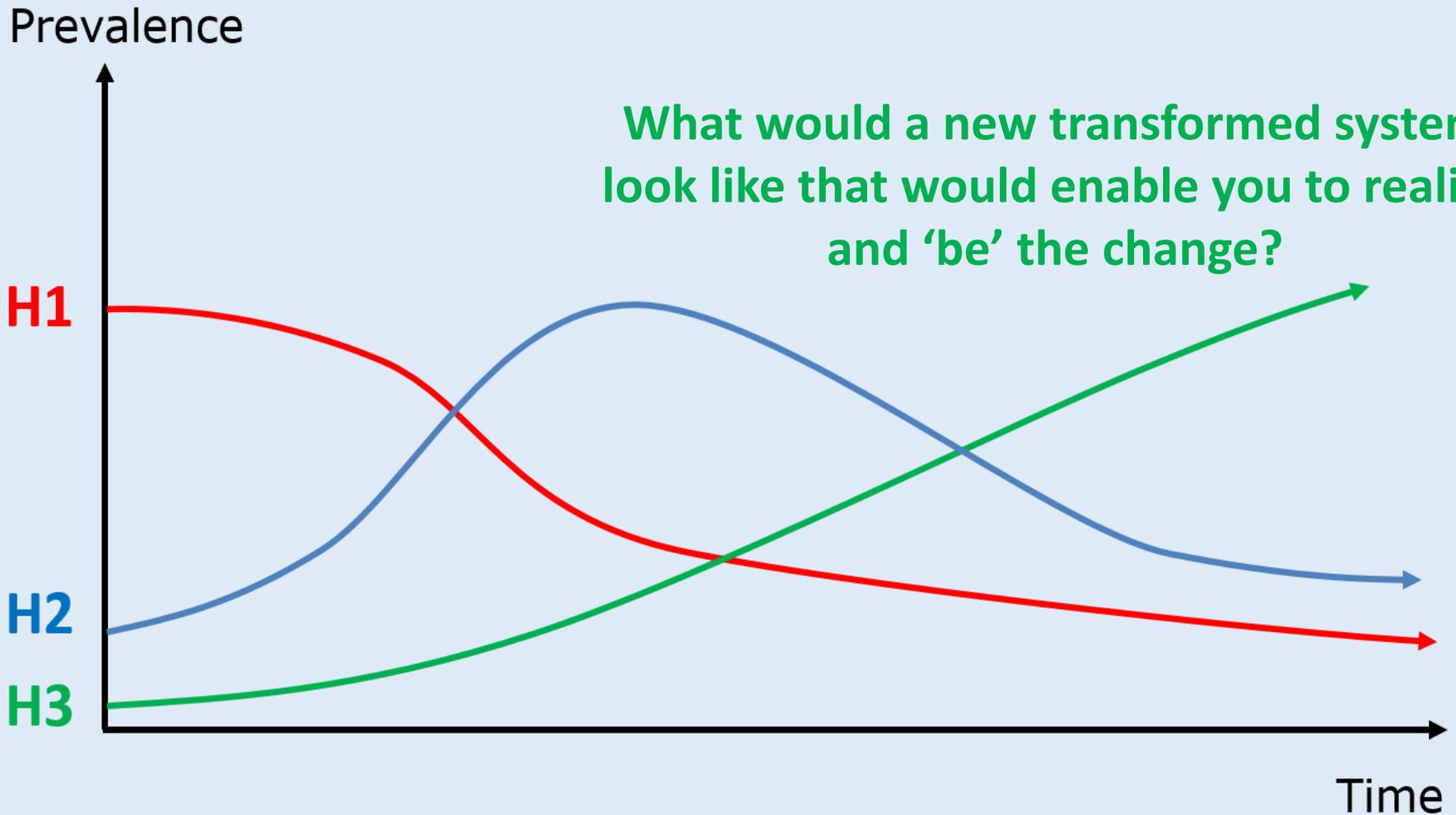
# A pattern shift...



Prevalence



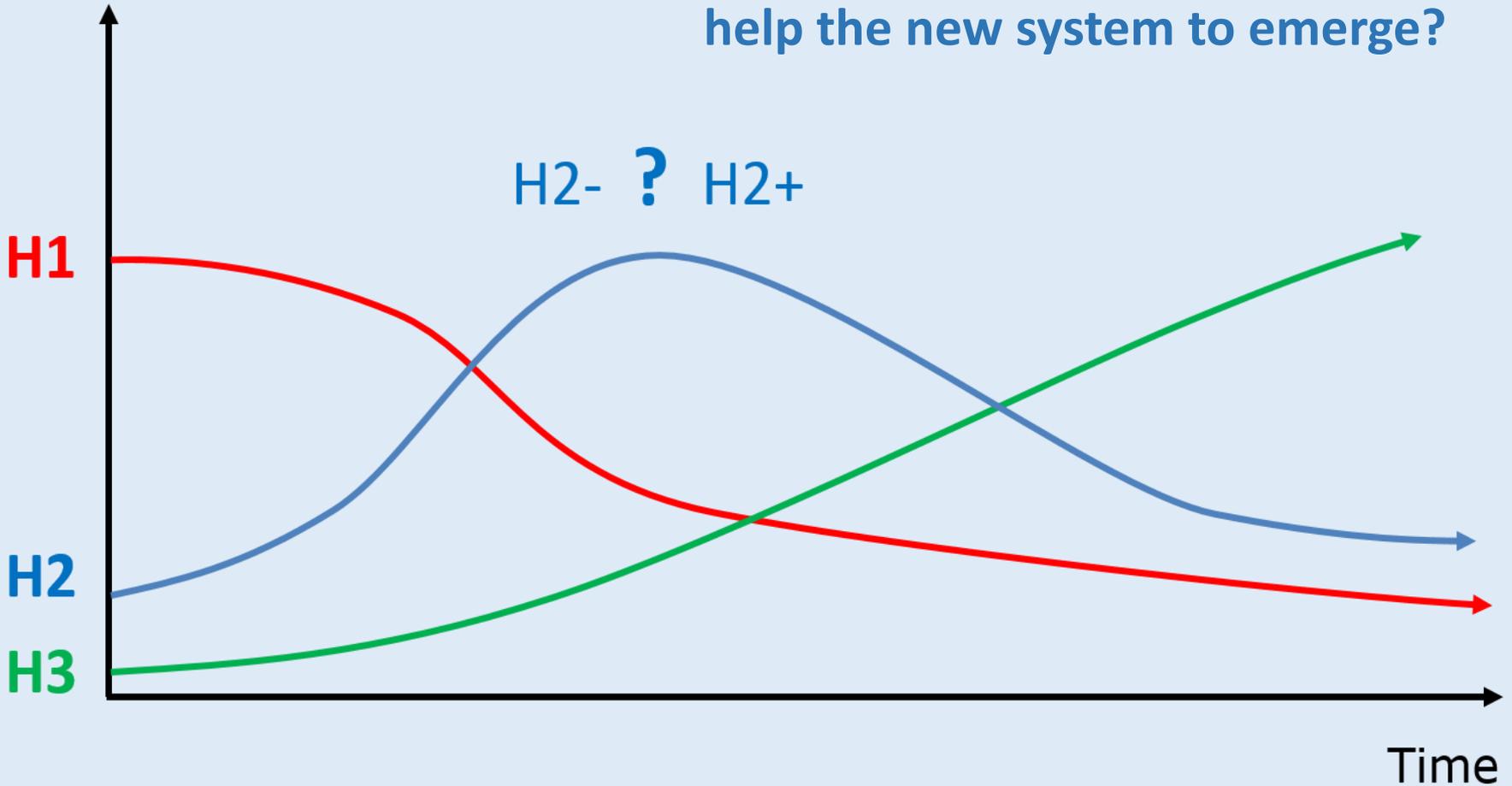
**You have 5 minutes to: Quickly sketch diagram then work in 2-3s to answer the question (1-3 ideas) and add these to your diagram**



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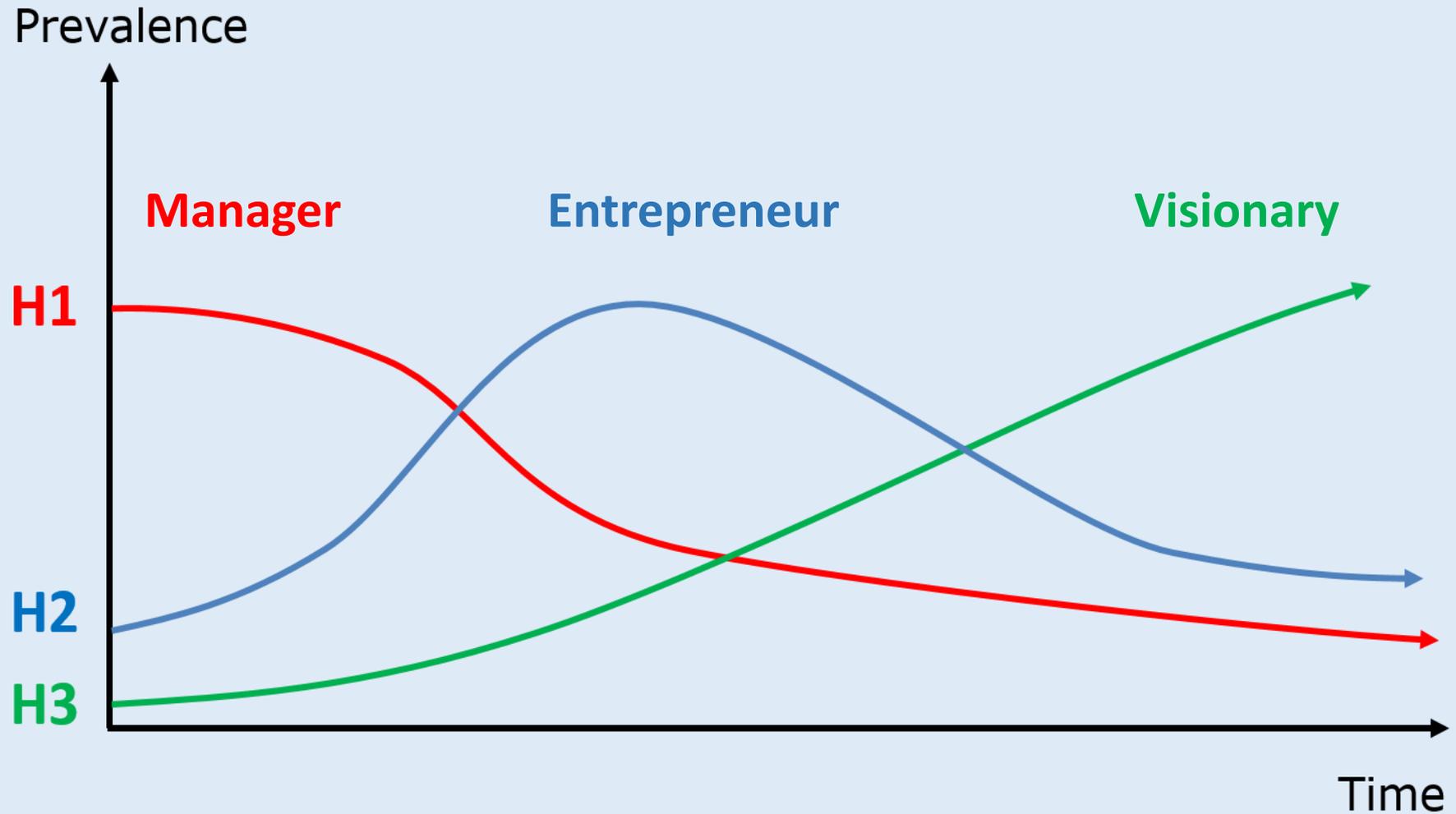
Prevalence

What innovations can you put in place to help the new system to emerge?



You have 5 minutes to: Quickly sketch diagram then work in 2-3s to answer the question (1-3 ideas) and add these to your diagram

# Pattern shifts & futures consciousness



**Key message:**

**Agency is possible, but it  
requires futures consciousness**

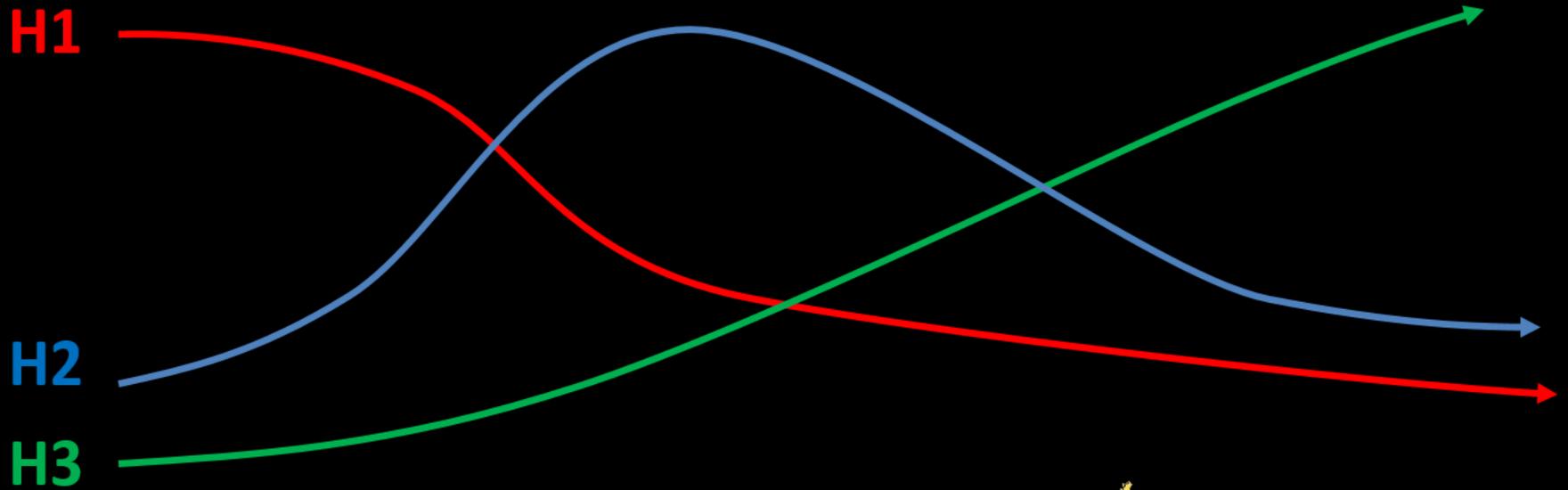
# Three questions...

1. What should I be doing?

2. What changes in the 'system' are needed to help me do this?

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# Creativity & Magic



# Creativity & Magic



[pngtree.com](https://www.pngtree.com)



# What are the implications of this for how we approach our work?



[pngtree.com](https://www.pngtree.com)



# At the end of the world as we know it...

1. What should I be doing?

2. What changes in the 'system' are needed to help me do this?

3. How can we be creative to make this happen?

**My own journey: Who should I be at the end of the world as we know it?**



**Apprentice of shamanistic practice**



**Transformations are already happening.**

**Knowledge systems are also beginning to change.**

**What does this mean for us as 'researchers'?**

**What does this mean for me?**



**Go practice creating your own  
wizardry and change**