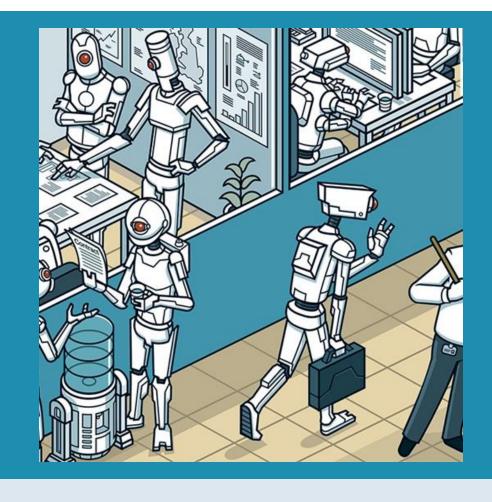


Imagining the (distant) future of work



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This research was funded by an FWO project grant from the Research Foundation Flanders (G074418N) and an Internal Funds C1 grant from the KU Leuven (C14/17/014).

The Future Does Not Exist

An existential crisis

If this is all true, will our field not very soon become very outdated in terms of how we understand and study the world of work?

How could we as social scientists (and not AI or robotics specialists) understand and contribute something of value to this topic area?

How could we as researchers **empirically** study the future (rather than being 'futurism gurus' who only write think-pieces); what **data** would we use for that?





A Dean, a colleague, a Dad, and a friend

That stuff about disruption is all scientistic.



I wish I could build a time machine and **go back** to the society I knew when I was younger.

I'm afraid we will lose our **humanity** through these novel technologies.

Let mankind destroy itself, if they so want—give the Earth back to nature.





A research question with several layers

"How (and why) are competing narratives of the future of work construed and subscribed to by different actors?"

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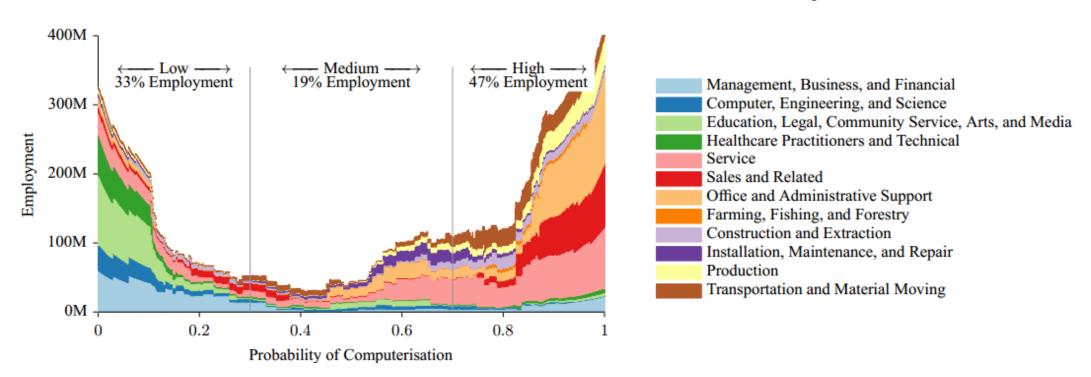
How (and why) are competing narratives of the future of work construed and **subscribed to** by different actors?

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The (good ol' boring) 'prediction paradigm'

"47 per cent of occupations in the United States are at 'high risk' of automation in the next 10 to 20 years"



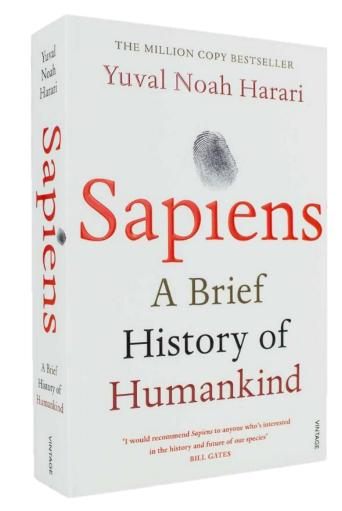
(Frey & Osborne, 2013, "The Future of Employment: How susceptible are jobs to computerisation?")



The problem with predictions

First-order chaos = Events that do not respond to prediction. For example: the weather. A weather forecast with a good level of accuracy will 'come true' based on its accuracy, not because the weather adapts to the prediction.

Second-order chaos = Events that <u>do</u> respond to prediction. For example: political elections and the stock market. This makes them less predictable.



► The illusion of determinism: "Only one path leads from the past to the present, but from the present many possible paths branch out to the future."

(Harari, 2015: "Sapiens: A Brief History of Humankind")



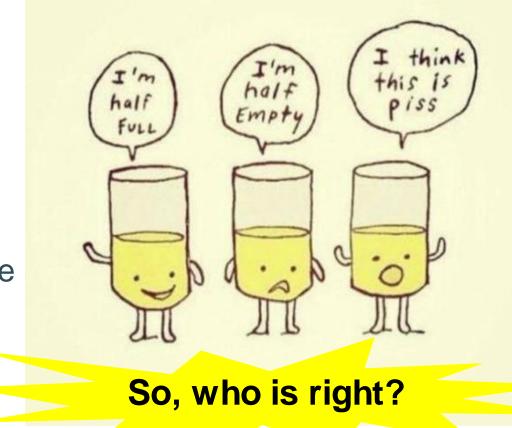
There are three types of people in this world ©

Optimists = Tend to focus on the potential of new technologies to augment human

labor.

Pessimists = Focus on the threat of automation and the massive job loss that would come with.

Sceptics = Believe that claims about the velocity and scope of projected transformations in the world of work are vastly exaggerated, and that the future will look more or less like the present, with a few tweaks here and there.





That is probably the wrong question to ask!

Narrative economics: "The future cannot so much be accurately predicted, than that it is *willed into being* through the dominant narratives of powerful stakeholders."





Framing contests

"Activities in which social movement actors engage in an attempt to mobilize others around a specific point of view"

→ Actors, responding to their own incentives, shape agendas and control information flows to steer strategic choices in a preferred direction.



How we saw it



How it really happened

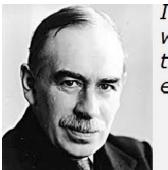


(Sarah Kaplan, 2008, "Framing contests: Strategy making under uncertainty")



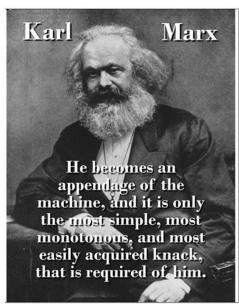
The (much cooler) 'imaginaries' paradigm

Imaginaries = "emotion-laden stories about future society that inspire people into collective action/resistance" (Levy & Spicer, 2013)



In the 21st century a 15 hour work week will suffice, as we turn instead to how to use freedom from pressing economic cares





(John Maynard Keynes, "Economic Possibilities for our Grandchildren", 1930)



(Karl Marx, "Fragment on Machines", 1857)

(Karl Čapek, "Rossum's Universal Robots", 1920)

(David Graeber, "Bullshit jobs", 2013)



Two studies, six abductive research steps

How to empirically study something that has not happened yet?



- **Study 1:** content analysis of 485 print press articles from last 5 years
- Study 2: survey of 570 stakeholders from 5 actor groups (i.e., Economy/labor market experts, Tech/innovation experts, Policy makers/public administrators, Authors/journalists, and Engaged citizens)

Step 1: Preliminary Survey Development

Step 2: Frequency Analysis of Common Narratives and Actors in the News Media

Step 3: Final Multi-Actor Survey Development and Administration

Step 4: Content Analysis of (Counter) Narratives in the News Media

Step 5: Analysis of Multi-Actor Survey Data

Step 6: Mixed-Method Analysis of News Media and Survey Data









Example

Terug









Een robot als collega?



Het Laatste Nieuws*. Za. 26 Okt. 2019, Pagina 52

Artificiële intelligentie zal onze jobs niet af nemen, denken technologievisionairs: ze zal sámen met ons werken. Maar hoe zal dat precies in zijn werk gaan? En hoe zorgen we ervoor dat we ons dan als mens niet nutteloos gaan voelen?

Hoe zal onze werkplek er binnen tien à dertig jaar uitzien, wanneer artificial intelligence (AI) zo ver gevorderd geraakt dat ze verstandig genoeg zal zijn om delen van ons werk over te nemen? Momenteel is er natuurlijk nog geen reden tot paniek: we beschikken over het soort computerintelligentie dat nu nog eenvoudige toepassingen als Siri op de smartphone of de slimme Google Homeluidsprekers aanstuurt. Die dingen zijn nog zo lomp dat het zelfs een beetje belachelijk klinkt om ervan uit te gaan dat ze ooit zo slim zullen worden als de mens.

Maar de ontwikkelingen gaan razendsnel op gebied van Al. En de manier waarop kunstmatig intelligente systemen worden ontworpen ligt al zo dicht bij de manier waarop menselijke hersenen zijn 'bedraad', dat het alleen een kwestie van doorrekenen is om te bepalen wanneer 'ze' ons verstandelijk zullen hebben bijgebeend.

Geen Terminator

Informaticagigant IBM bouwde bijvoorbeeld al artificieel intelligente computersystemen waarvan de 'neurale' bouw bestaat uit 16 miljard kernen of 'neuronen'. Computerbedriiven hanteren die laatste term omdat de kern van hun moderne netwerken eigenlijk hetzelfde werkt als die groei in computerkracht een beetie door, zeggen computerwetenschappers, en de intelligentie van de machines zal ook die van de mens benaderen en - daarna overtreffen. De doorbraak van die 'algemene artificiële intelligentie' is nog niet voor morgen, maar het is toch dichterbij dan je misschien denkt: bij recente enquêtes onder computerwetenschappers wordt er op 2040 tot 2060 gemikt.

Gaan computers die slimmer zijn dan wij ons misschien niet willen vernietigen, zoals in de Terminator-films waarvan onlangs de zesde in de bioscoop kwam? Zo'n vaart zal het wellicht niet lopen, denken wetenschappers, omdat ze in de software van die systemen nu al een soort 'geweten' aan het programmeren zijn. Maar die dingen moeten natuurlijk wel iéts doen. Wordt je toekomstige collega of misschien zelfs baas echter een computer of een robot? Heel wat experts denken van wel.

Job-apocalyps

Er zijn studies die zeggen dat 50 procent van alle taken die alle werknemers op de wereld vandaag uitvoeren, kan worden geautomatiseerd door AI en robotica. Er zijn scenario's berekend, zoals bijvoorbeeld door het studiebureau McKinsey, waarin tegen 2030 zo'n 30 procent van alle huidige jobs zal kunnen worden vervangen door machines. En voor enkele decennia later liggen er nog ergere scenario's klaar. "Mensen die in een sociaal secretariaat, een bank of een verzekeringsmaatschappij dossiers beheren, bijvoorbeeld: die hun job zal de komende jaren ingrijpend veranderen", vertelde technologievisionair Peter Hinssen ons onlangs. "Mensen die met informatie werken, met gegevens: de kans is bijna gegarandeerd dat er in de komende jaren een algoritme opdoemt dat de job veel beter kan doen."

Maar tegelijkertijd gloort er ook hoop; verscheidene studies zeggen dat tot 65 procent van alle toekomstige jobs nog moet worden uitgevonden, omdat de komst van Al nieuwe bekwaamheden van de mens vereist. Zo zal volgens van een menselijk brein. Alle en heaf dat de consultancybedrijf KPMG een menselijke 'Al-ethicus', een soort a meezenier voor artificieel intelligente computers, net geweten van computers te testen. consultancybedriif KPMG een menseliike 'Al-ethicus', een

n zijn er heel wat menselijke vaardigheden die

niet zo gauw door een computer zullen worden overgenomen. In jobs in techniek (jemand moet de machinerie ook bouwen en onderhouden), zorg, fijn vakwerk en creativiteit zitten net de elementen die ons mens-zijn uniek maakt, "Computers zullen binnenkort veel kunnen en de vraag zal zijn: wat doe je als mens daar bovenóp?", zegt Hinssen, "In een wereld waarin technologie normaal wordt, zal alles wat met menselijk contact te maken heeft een enorme meerwaarde krijgen. Anderzijds zul je moeten inzetten op het creatieve, op het vinden van toegevoegde waarde. We gaan in een situatie komen waar mens plus machine altijd beter is dan mens of machine alleen."

En zelfs áls het ooit zo ver zou komen dat zo goed als alle menselijke jobs kunnen worden overgenomen door superslimme machines, dan hoeft dat nog geen ramp te zijn. Computers en robots doen dingen veel productiever dan mensen, onder meer omdat ze niet hoeven te rusten of nooit een baaldagie hebben. Daardoor brengen ze, naarmate ze meer worden gebruikt, ook veel meer op.

Lekker luieren

Volgens een recente studie van marktstudiebureau Gartner zal Al alle bedrijven op de wereld tegen 2022 al een extra inkomst van 2,6 triljoen euro opbrengen. Trek dat door naar pakwed 2030 of 2040 en we worden als mensheid slapend rijk door de robots ons werk te laten doen, waardoor we ons de hele dag kunnen bezighouden met onze hobby's en

Alleen moet er worden gekeken naar hoe de vruchten van die computerarbeid kunnen worden herverdeeld. Captains of industry als Mark Zuckerberg (Facebook), Richard Branson (Virgin) en Elon Musk (Tesla) stellen al dat de groei van Al moet gepaard gaan met de invoering van een universeel basisinkomen voor iedereen. "Al is de recentste technologie die ons toelaat om een hoop meer producten en diensten te produceren met minder arbeid", zei Microsoft-oprichter Bill Gates onlangs. "Dat is altijd goed geweest voor de samenleving. Ooit deden we allemaal aan landbouw. Nu hebben we betere zaden en meststoffen. En de meeste mensen op de planeet zijn geen landbouwers meer. Al brengt ons, op diezelfde manier, immense nieuwe productiviteit."

GAME

Sega-nostalgie naar de huiskamer

Er waren al officiële miniversies van de NES, Super NES, Commodore 64 en PlayStation, dus ook Sega kon niet meer achterblijven. Met de Mega Drive Mini maken ze dat goed. Er komen al jaren Mega Drive-replica's op de markt van het bedrijf ATGames, maar dat zijn povere maaksels, met een aanbod van B-titels die bovendien op een schrale manier naar het scherm werden gebracht. Voor zijn eigen product deed Sega een beroep op een eigen designteam, dat oudies als 'Altered Beast', 'Space Harrier II', 'Ghouls 'n' Ghosts', 'Golden Axe', 'Contra: Hard Corps', 'Ecco the Dolphin', 'Castle of Illusion Starring Mickey Mouse' en natuurlijk 'Sonic the Hedgehog' in hun volle glorie uit de vroege nineties weer naar een modern scherm bracht. Zelfs wanneer je ze uitrekt naar de 16:9-beeldratio van een moderne ty zien ze er prachtig uit, en je kunt er een - hoewel nét iets te veel aangezette - laag gesimuleerde strepen van een oude beeldbuis-tv overheen leggen. En ook qua prijs (80 euro) zit ie goed. (RMe)

RONALD MEEUS ...



Seven narratives about the Future of Work (i)

Narrative 1: Dataism = "The wide-scale acceptance of the authority of algorithms and Big Data, effectively transforming all political and social

structures into data-processing systems based on real-time tracking and predictive analysis."

Phenomena:

- ✓ The emergence of a fully data-driven society
- √ The demise of privacy
- ✓ Growing dependency of humans on technology
- ✓ The rise of a powerful elite of rich and technocrats







Seven narratives about the Future of Work (ii)

Narrative 2: Exterminism = "The rich hoarding all the resources while the earth burns, in the process eliminating all people who produce little or no economic value."



"Yes, the planet got destroyed. But for a beautiful moment in time we created a lot of value for shareholders."

Phenomena:

- ✓ Climate change
- ✓ Ecological disasters (e.g., mass flooding, climate refugees)
- ✓ An increased risk of war
- ✓ Growing economic inequality



Seven narratives about the Future of Work (iii)

Narrative 3: Re/upskilling = "The need for continuous retraining in response to the obsolescence of existing skills (reskilling), and/or the necessity to learn

entirely new skills (upskilling) in adaptation to changing demands."

Phenomena:

- ✓ Workers needing to keep up with new technologies
- ✓ Partial automation (of tasks)
- ✓ Emergence of new types of jobs and industries
- ✓ Learning to work with algorithms and 'cobots'





Seven narratives about the Future of Work (iv)

Narrative 4: Augmentation = "Computers (algorithms) and humans working together, by design, to enhance one another, such that the intelligence of the resulting system improves."





Phenomena:

- ✓ AI making human work faster and easier
- ✓ Increased productivity
- ✓ Tech enhancing rather than replacing human labor





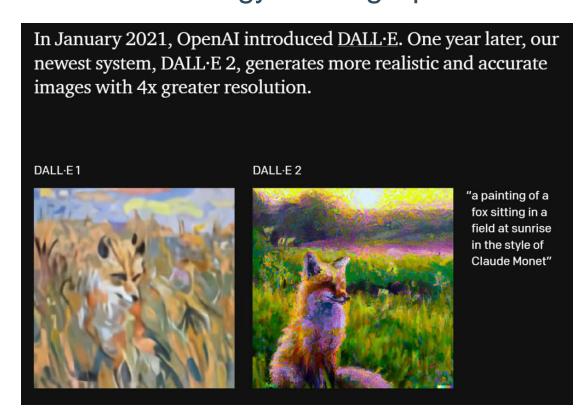
Seven narratives about the Future of Work (v)

Narrative 5: Singularity = "Artificial intelligence (AI) transcending human intelligence, as a result of exponential growth in the technology leading up to a

'point of no return'." (also: 'Robocalypse')

Phenomena:

- ✓ Humanity entering a new phase of evolution
- ✓ Full automation (of jobs)
- ✓ Intelligent machines surpassing human capacities







Seven narratives about the Future of Work (vi)

Narrative 6: Job destruction = "The mass unemployment of workers in many industries as a result of automation and structural shifts in the labor market."



Phenomena:

- ✓ The disappearance of jobs and industries
- ✓ Not compensated for by new job creation
- √ Mass unemployment





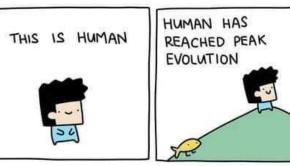
Seven narratives about the Future of Work (vii)

Narrative 7: Work deintensification = "The opposite of work intensification, the historical phenomenon characterized by increasing levels of work intensity, heightened pressures during work hours, and the potential for work to invade the private life through demands on personal time—so, the idea of humans

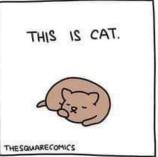
working less in the future."

Phenomena:

- ✓ Universal basic income (UBI)
- ✓ Less work hours (cf. Keynes: 15-hour work week)
- ✓ More leisure time
- ✓ Pursue passions, renaissance of craftwork

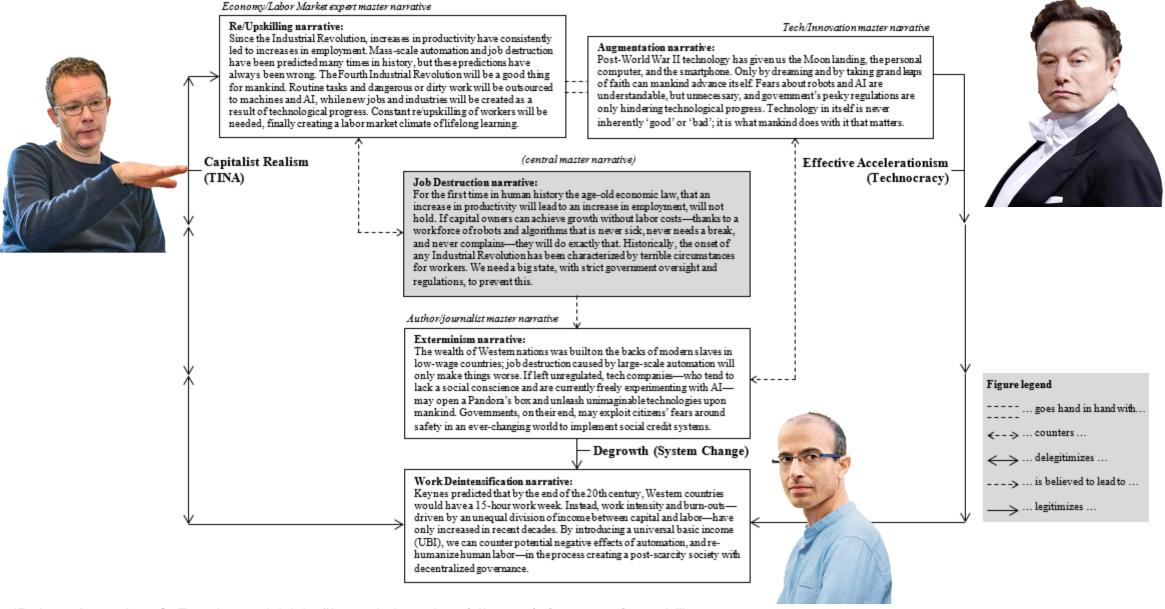














		Near future		Distant future	
	Never	Good	Bad	Good	Bad
Dataism					
Exterminism					
Re/upskilling					
Augmentation					
Singularity					
Job destruction					
Work deintensification					





	Never	Near future: New Tech, Acceptance, Trust, Information Seeking		Distant future: Politics, Ideology, Social Movements	
		Good	Bad	Good	Bad
Possible actions	Imagine	Support	Resist	Co-create	Organize/Vote

Where to start?

- ✓ When you read something about the future of work, don't just look at what is predicted and by when, but who is saying it and why (what society do they want? how does it benefit them?)
- ✓ What is your utopia/dystopia? What society do you (not) want?
- ✓ What should we do (or stop doing) in the short, mid, and long term:
 - ☐ To move towards desirable scenarios?
 - ☐ To reduce the risk of undesirable scenarios?
 - ☐ That can create 'points of no return' for the distant future?
 - That we have most control over, from our role/position of influence? (cf. career choice)
 - ☐ To partner with others who have control/influence we don't have?





Take-home messages

- ✓ Not only what is being predicted (and why when) ... but who is saying it and why
- ✓ Experts have different access to info and different (socialized) traits
- ✓ Numbers, figures (and historical 'facts') provide an illusion of objectivity
- Vork has always been political, while currently the dominant discourse is deterministic (think: why?)
- The distant future can actually be more actionable than the near future!
 - ✓ If you don't "do" politics, politics will do you!





The Future Is What We Make It

























Extra slides



Contact me at nicky.dries@kuleuven.be

This research was funded by an FWO project grant from the Research Foundation Flanders (G074418N) and an Internal Funds C1 grant from the KU Leuven (C14/17/014).

Why? Corresponsive mechanisms

- ✓ People select into environments that are consistent with their dispositions, which are consequently further developed, reinforced, and strengthened by their experiences in that environment.
- ✓ Over time, this leads to homogeneity within social environments, such as occupations and organizations. This theory, thus, offers a plausible account for the similarities and differences we found within and between the groups of actors in our data.
- ✓ It also explains why it is so difficult for actors to engage in **perspective taking**. Not only do they hold different views of the future of work. It is quite hard to take the perspective of a person who is different to you in every way, not only today but as a result of their cumulative life experiences.













(Woods, Edmonds, Hampson, & Lievens, 2020: "How our work influences who we are: Testing a theory of vocational and personality development over fifty years")



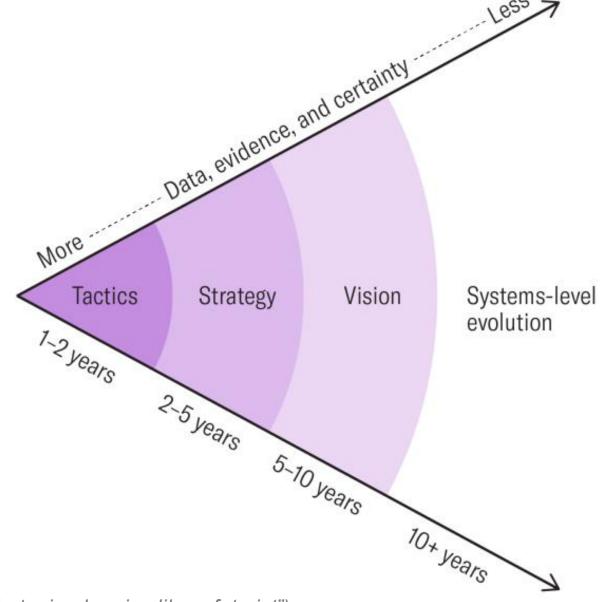


Overview of Key Discoveries.

	Acto	or role		
	Narrator	Subscriber		
	How are competing narratives of the future of work construed by different actors in the public debate?	How are competing narratives of the future of work that exist in the public debate subscribed to by different actors?		
	Key discoveries:	Key discoveries:		
How?	 The public debate around the future of work is an arena for discursive struggles between different groups of actors, each pushing different narratives about the future that align with their vested interests, and each trying to 'win' the debate by getting the public to subscribe to their master narrative. 	 The narrative subscription of actors to a specific narrative of the future of work in the public debate is the result of selective information processing, motivated by whether or not that narrative fits their vested interests. 		
	2. Discursive closure tactics are used by all actors in the public debate around the future of work, to undermine and delegitimize narratives that run counter to their master narrative. Delegitimation of a narrative typically leads to lower narrative subscription, reducing the chance of that narrative coming true.	2. In addition to universal biases like optimism bias, accessibility bias, and framing bias, narrative subscription goes hand in hand with group membership, such that members of a given actor group subscribe more to narratives pushed by actors of that same actor group. This is because members from the same actor group tend to interact more often, thus reinforcing field frames.		
	Theoretical mechanism: Framing contests (Macro)	Theoretical mechanism: Narrative subscription (Micro)		
	Why are competing narratives of the future of work construed by different actors in the public debate?	Why are competing narratives of the future of work that exist in the public debate subscribed to by different actors?		
	Key discoveries:	Key discoveries:		
Why?	 Members of a specific actor group hold taken-for-granted cognitive frames typical of their field of expertise (of which they are often unaware), that translate into a shared vocabulary, and determine how they construe narratives of the future of work. 	 Actors select into fields of expertise based on pre-existing individual differences the are typical of that field, and are subsequently continually reinforced through field socialization. Over time, fields become more homogenous in terms of the type of people that work in them. 		
	2. All actor groups in the public debate about the future of work believe their master narratives are based on neutral facts and objective numbers, figures, and trends—and believe that those of the other groups are not. This is because actors from different fields hold different understandings of how to interpret data and what constitutes 'evidence'.	2. Individual differences stand in logical relation to membership of a specific actor group, which in turn influences subscription to different narratives about the future o work. People from one actor group often find it hard to understand the perspective of another actor group, as a result of their lifelong socialization into distinct fields.		
	Theoretical mechanism: Field frames (Macro)	Theoretical mechanism: Corresponsive mechanisms (Micro)		







(Webb, 2019: "How to do strategic planning like a futurist")



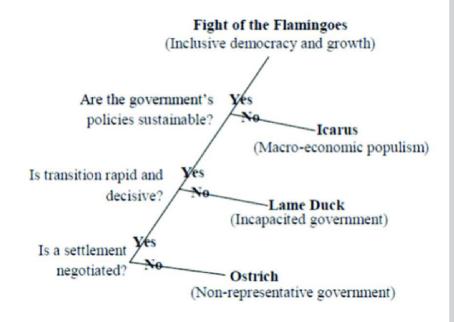


- **Step 1.** Define the problem, the purpose, and the audience of the scenario exercise.
- **Step 2.** Define a time frame and region, and identify issues outside of control.
- Step 3. Identify facts and trends in the past and present (e.g., ageing society).
- Step 4. Compose a list of questions you would like to ask the Oracle of Delphi.
- **Step 5.** Infer your uncertainties from 4, and project different outcomes from there.
- **Step 6.** Evaluate how internally consistent, plausible, and relevant your scenarios are.
- Step 7. Evaluate your strategic readiness on key decision points in each scenario.
- Step 8. Create a strategic vision that can work in many different scenarios.
- Step 9. Create a portfolio of strategic actions to choose from when reality branches off.
- **Step 10.** Identify indicators to monitor all scenarios in real time.

(Schoemaker, 2020, "How historical analysis can enrich scenario planning")







BOX 1 The Mont Fleur Scenarios in a Nutshell

The message of Ostrich was that a non-negotiated resolution of the crisis would not be sustainable. This was important because elements of the National Party (NP) government and the business community wished to believe that a deal with their allies, instead of a negotiation with their opponents, could be sufficient. After hearing about the team's work, NP leader F.W. de Klerk was quoted as saying, "I am not an Ostrich."

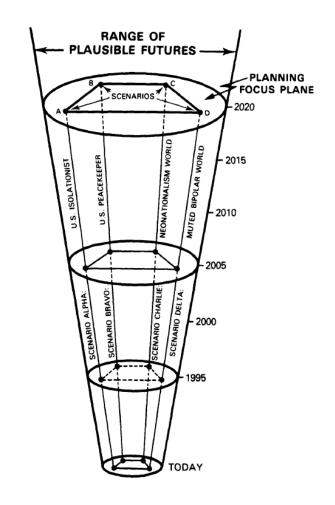
Lame Duck's message was that a weak coalition government would not be able to deliver and therefore could not last. This was important because the nature, composition, and rules governing the Government of National Unity (GNU) were a central issue in the pre-election negotiations. The NP wanted the GNU to operate subject to vetoes and other restrictions, and the ANC wanted unfettered "winner takes all" rules. Lame Duck explored the boundary in a GNU between compromise and incapacitation.

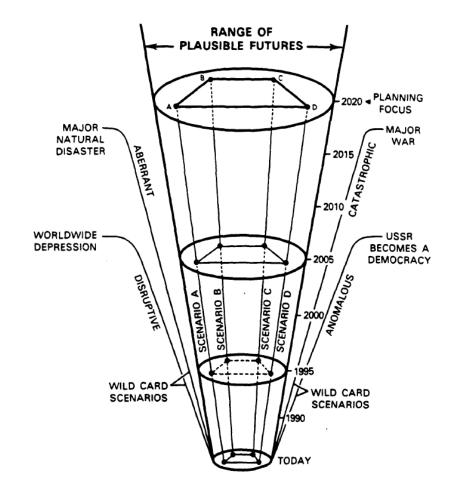
Icarus warned of the dangers of a new government implementing populist economic policy. This message-coming from a team which included several of the left's most influential economists-was very challenging to the left, which had assumed that government money could be used to eradicate poverty quickly. The business community, which was worried about Icarus policies, found the team's articulation reassuring. The fiscal conservatism of the GNU was one of the important surprises of the post-election period. The simple message of Flight of the Flamingos was that the team believed in the potential for a positive outcome. In a country in the midst of turbulence and uncertainty, a credible and optimistic story makes a strong impact. One participant said recently that the main result of the project was that "We mapped out in very broad terms the outline of a successful outcome, which is now being filled in. We captured the way forward of those committed to finding a way forward."

Source: Adam Kahane (1999); Le Roux (1992); http://www. gbn.org/scenarios/fleur/fleurIntro.html.

(Schoemaker, 2020, "How historical analysis can enrich scenario planning")







THE CONE OF PLAUSIBILITY

FIGURE 1. THE CONE OF PLAUSIBILITY

(Taylor [Strategic Studies Institute, US Army War College], 1988: "Alternative world scenarios for strategic planning: Futures report")



just-shower-thoughts

When people talk about traveling to the past, they worry about radically changing the present by doing something small, but barely anyone in the present really thinks that they can radically change the future by doing something small.



sonyaliloquy

...dude.

https://feb.kuleuven.be/research/FEBTalks





Comments?

Questions?



Contact me at nicky.dries@kuleuven.be

This research was funded by an FWO project grant from the Research Foundation Flanders (G074418N) and an Internal Funds C1 grant from the KU Leuven (C14/17/014).