

Flexibility Workshop - Jordans YHA 24-26th September 2018

The DEMAND Centre – Dynamics of Energy, Mobility and Demand - (www.demand.ac.uk) ran a two day workshop on the topic of Flexibility – designed as a contribution to the new CREDS -Centre for Research into Energy Demand Solutions (www.creds.ac.uk). During the workshop, we discussed papers by the authors listed below. Get in touch with them individually if you would like to know more about what they wrote. This note is an attempt to organize and represent some of the discussion that arose, and to generate more.



Within the DEMAND centre, we produced ‘pieces of thought’ – like a chain letter which one person started and others continued, commented on or responded to. So please send me (Elizabeth Shove, e.shove@lancaster.ac.uk) your paragraphs, critiques and reactions and we’ll extend the note accordingly. Feel free to do so whether you were at Jordans or not.

As befits the occasion, the note also includes some pictures, recipes and new inventions.

Contributors:

Elizabeth Shove and Noel Cass, Lancaster University, background paper: [‘Time, practices and energy demand: implications for flexibility’](#)

Mike Greenhough, Lancaster University (commentator only)

Mikko Jalas, Aalto University, Helsinki. ‘Flexibility as a new temporality of consumption’

Stanley Blue, Lancaster University, ‘Flexibility as Feature of Open and Emergent Practice Complexes’

Stefan Smith, Reading University, ‘Flexibility and Demand: Variance and Constraint’

Jenny Palm, Lund University, Sweden, ‘Reflections on time, practices and energy demand’

Sarah Royston, Sussex University, ‘Sarah’s thoughts on flexibility’

Dale Southerton, Bristol University, ‘Is flexibility a useful concept?’

*Antti Silvast, University of Durham, ‘Promoting flexibility in resilient critical infrastructures’

Eva Heinen, University of Leeds, 'Flexible workshop: response to background paper'
Mathieu Durand Daubin, 'Time, practices and energy demand: implications for flexibility'
*Sergei Shubin, Swansea University, 'Time and flexibility in the context of international labour migration'
Martin Green, Reading University, 'Living aboard temporal rhythms of dispersed grids'
Glenn Watts, Environment Agency, 'Water supply planning: reliability, variability and flexibility'
Nicola Labanca, European Commission, 'Insights on Flexibility from an Historical Approach to Energy, Time and Instrumentality'
Roger Fouquet, LSE, 'A very brief history of time(management)'
*neither could make it to Jordans but we discussed their contributions anyway

This note is in six sections:

1. Flexibility: definitions – goal oriented and systemic/textural
2. Flexibility: in relation to variation; scale; storage, technologies
3. Flexibility: comparing across sectors – water, electricity, transport, labour
4. Flexibility: narratives and storylines – time, measurement, discourses
5. Flexible leftovers and more unfinished business
6. Topics and questions for Antti and Sergei
7. Recipes and new inventions

1 Flexibility: definitions

I think we adopted two really broad ways of defining flexibility – one was in relation to **the achievement of some (usually unstated) goal** or end. Such definitions tended to focus on alternative ways of achieving a (usually unstated) goal – e.g. alternative affordances, consumer or producer 'choice'), in the face of disruption (resilience), or despite variations (seasonal; demographic).

For example:

Does flexibility mean some kind of change in forms of ease and convenience?

Is flexibility always about choice and the availability of other options/time

Clashes in flexibilities (within households, of employer-employee) are endemic: fixed/rigid arrangements for one may be part of creating flexibility for another.

Fixed obligations mean that other practices are organized around that priority

Flexibility is the 'ability to change state or structure' (but who or what's ability)

'Perspective' matters for flexibility: who you are and what 'you' want to do.

Flexible time is not 'less harried' – an observation more than a definition

Flexibility is an individual quality: some have more of it than others (meaning they are in a position to manage other schedules).

Flexibility is about achieving an end in the face of variation: e.g. of institutional responses to variations in patients' conditions. Tensions between standardized and equitable (inflexible) procedures that have to be applied to many different settings (flexible). Are variations in patients' conditions a source of flexibility in the system (or an occasion for it) and how are these variations handled in the institution. Is flexibility, in these cases, the potential for variation?

Flexibility is about adaptability: For instance, and with Martin who lived on a canal boat, learning how to adjust to different and also intersecting times/time scales (deadlines for work, hours of sunshine) depends on also adapting what it is that is being done, and how. (e.g. 'grid jumping' to a library, working different hours). Stefan wonders if there are relations between temporality and adaptability that need exploring. Long-term adaptation (e.g. growing different crops due to climate change or changing building design to suit different demands) vs. short term response (e.g. greater irrigation due to drought, or temporary use of air conditioning in heat waves).

Flexibility in relation to supply and demand relates to the goal of some kind of ongoing equilibrium. Discussions of flexibility in terms of the relation between supply and demand involve the metaphor of a 'spring' – feedback, reaction, adjustment and response are about keeping the system in balance by modifying both consumption and provision. So flexibility is about the scope for short term response to a change in supply – with the goal of equilibrium.

Discussions of flexibility often suppose people are without connections, or practices are isolated from each other. This is wrong. Flexibility is about negotiating constraints: If constraints on doing (urgency/injunction; availability, sufficient time) are 'relaxed' is there more flexibility? (to do what)

Defining flexibility as agency – as the ability to do, or as a constraint on (someone else's) agency – overlooks the coordinated nature of social life. But it fits in well with notions of consumer (and other forms of) choice. Eg. flexibility depends on the 'offerings' of the system: e.g. bus or cycle, or tram or car offer choices with which to get from A to B. E.g. are systems where there are many providers more 'flexible' (offering choice) than those that are monopolies. This is to equate flexibility with individual choice.

Other definitions took flexibility to refer to something about **how social practices are configured**. Examples include the kinds of interconnections that exist between practices; the societal ordering of practices in time and space, how technologies and supply chains constitute forms of flow, stasis and linkage and how they relate (or not) to ideologies of choice.

For instance

Are there are 'limits' to forms of interlinkage as these are situated/historical? Where there are fewer linkages is there is greater or lesser scope for flexibility?

Flexibility and resilience: adaptability (of something/someone) to a shock. So is flexibility (as resilience) about not breaking under strain, or about bouncing back after the shock (more broadly, how does flexibility relate to resilience, and the potential for adaptability). Flexibility is about coping with risk (to achievement of a specific goal). But it might also be related to the more systemic organization of 'opportunities'.

Flexibility is often in one aspect only – and that can be and often is in tension with other aspects. For instance, flexible supply chains are in tension with those that are efficient and 'lean'. Flexible ones have redundancy built in.

'Flexibility in society affects transport': situates transport not as a form of flexibility but as an expression of it, and of the many interconnections that define the social-spatial-temporal mesh.

Flexibilities and limits to them are embedded in infrastructures, material arrangements, rules and 'nature' (physical properties) – but *never* in absolute terms, since these arrangements are always instantiated in practice.

These two groups of definitions are not disconnected: goals and priorities, e.g. social commitments, schools, clubs create forms of 'inflexibility' (for which read priorities), and also figure in the collective ordering of space and time.

How does the 'flexibility' (aim to achieve goal) of an individual relate to the flexibility of an organization; a family; a school; a workshop; a society. Sometimes goals are aligned, but not always. Flexible organisations can rest on inflexible (aspects of) labour.

If flexibility is about improvisation and adaptation, is that not also related to forms of learning (Lave and Wenger); - flexibility is about how people adapt, acclimatize or become acculturated, and how, in the process, they also transform that which they are becoming part of.

More broadly, how are different kinds of flexibility generated by the social. How are potentialities for adaptation and improvisation generated and on what are these based?

See also the idea that the main cultural driver of flexibility is unpredictability: If social systems were predictable there would be no need for flexibility. Stefan notes that social systems at scale demonstrate some regularity (in terms of energy use), but it is the variability of supply which drives need for flexibility in this case - whether the social system is predictable or not. According to Nicola – and others - systems become more unpredictable as they become more complex and as they have more interconnections.

2 Flexibility in relation to: variation, scale, storage, space, technologies

In the energy world, lots of variation in what lots of people do at a certain time is taken to indicate 'flexibility': the implication is that any one person could probably switch what they do, since others are doing different things at that time. But aggregated variation need not indicate flexibility for any one actor.

Variations: for instance in nature (seasons), or in forms of supply (war, disruption) can trigger 'flexibility' in the sense of configuring ways of achieving specific ends. Some kinds of social and technological arrangements can 'flatten' such variations – e.g. 24/7 societies, or lighting that does away with the dark, and so enables many practices to continue, also forms of storage.

There are different forms of variation: contemporaneous, and change over time. We mostly stuck to the first.

Greater flexibility and 'choice' on the part of individuals does not necessarily result in more variable (recorded) outcomes. There can be variations in all sorts of different dimensions but these don't result in flexibility – in the sense of adaptive potential.

Scale: There are intriguing issues of scale: especially within networked systems characterized by different forms of inter-dependencies. Large aggregated systems can encompass variability more readily than smaller ones (but is variability the same as flexibility?).

Are larger more interconnected networks more or differently resilient than those at a smaller scale? Are they equally more vulnerable/fragile or likely to fail in a 'big' way?

How is the state involved in maintaining extensive functioning networks? Are infrastructures forms of 'protected' provision – and thus the 'fixed' backdrop to other more flexible arrangements?

Small scale storage (on a boat) means interacting with multiple different supply systems and so a series of 'crises' of running out, but on different time scales: of water, of food, of fuel, battery power etc. relating to the size of the tanks, the cupboards etc. (see storage)

Storage: how forms of storage at one 'layer' or in one dimension of daily life matters for others: for instance stores of money can be translated into other items that are kept, used up, or used to change systems and technologies of provision (e.g. investment in nuclear power plants). There are also 'metabolic' aspects of storage: ice cream melts outside of a freezer; money is kept differently; water has volume and weight. (see cross sectoral differences).

Flexibility and contingency: building in more contingency is 'expensive' in terms of energy, and also (often) money. E.g. large reservoirs for large amounts of storage/resilience. Wide motorways; extensive back up systems for power.

But note some puzzles over storage and transport: - yes there are issues of parking, bike and taxi ranks etc., but perhaps transport is 'essentially' mobility: that is, it is about moving between sites of storage (e.g. of human labour – commuting; of goods (container shipping) etc.); replenishing or diminishing stores that are implicated in the conduct of other practices.

Storage typically enables displacement of the time of consumption from that of activity. So you don't need to destroy social rhythms in order to shift the time of use of energy. For instance, heat is always about storage. Automation is not about storage but it is about dissociating time of 'doing' by the human from time of energy use. So how do forms of automation and storage interact?

Space: how do spatial aspects of flexibility relate to temporal aspects? Are there different forms of flexibility (temporal) that relate to different 'scales' of aggregation and also to different spatial distributions. Mmm... could link to ideas of city rhythms, slow travel...

In the energy system, large parts of variability are NOT to do with flexibility. For instance, they are tied to spatial distributions and densities.

The spatial aspects of water are critical: so providing water to dense urban areas has a long pre-Roman history, and arguably made cities possible. The density means there has to be a hinterland of supply (also typically true for forms of energy, e.g. wood energy).

Travel is all about flexibilities/movements in space – but also about 'speed' and time.

Do certain practices (like having a workshop or seminar) have spatial 'requirements' that can be met in a variety of ways: e.g. in a hotel, a youth hostel but not a lake. Are other practices less 'flexible': e.g. they have more precise 'demands' in terms of space – and more? And in which case what is it that is flexible: the living room of the youth-hostel, or the practice of having a workshop?

Technologies: So-called flexibility technologies (convenience, or time shifting) may enable more consumption: not only spreading the load, but also making more forms of consumption possible – e.g.

via multi-tasking, automation or separating times of consumption from times of doing. For instance, washing machines etc. often matter for the timing of activities and how they are sequenced and scheduled. Technologies mediate flexibilities (in terms of goal orientation and the texture of society).

However, smart fridges only work if you live a predictable (inflexible) life. But only in some respects... in this case in relation to milk consumption. Having the milk bought for you, regularly, perhaps enables you to do a wider variety of other activities (more flexibility). Jacopo notes that (un)predictability and flexibility are interesting to reflect on and not really debated at Jordans.

Does automation and the scope for disconnecting timing of activity/practice from energy 'demand' – create more scope for 'adjustment' – if so, could this be called flexibility. Or does it create more behind the scenes interdependence, including on IT and control?

There are many different ways in which time of consumption and time of use relate: e.g. taking a shower can be using instantaneous hot water, or from a storage tank, (which is also about replenishing for tomorrow). This is not the same as the forms of time-activity displacement involved with the laundry.

3 Flexibility: within and across sectors

There are important cross sectoral (water, energy, money, labour) characteristics and differences in how social arrangements generate different types of 'flexibility' – both in the sense of how goals are achieved and in the space-time texture of society. Also, many practices depend on several 'sectors': thus water and energy, or one product (in plentiful supply) and another (that might be scarce).

How do 'flexibilities' at work relate to 'flexibilities' at home: for instance in terms of employment patterns and domestic 'work'. Ways of thinking about productive labour at home or at work are different: these reproduce what also become arbitrary but significant fault lines in debates about time and energy use (domestic, non-domestic). What is flexibility in an organization compared with a home: what are the institutional priorities and flexibilities/opportunities/affordances in how those priorities are realized and (flexibly?) negotiated.

In travel, being able to switch destinations is one form of flexibility (For the traveler, but also relating the social organization of provision – shops, schools, leisure etc.); but there might be no 'choice' (flexibility) in which mode; and some modes (car, bus) are defined by differently flexible features (you can work, you have to sit still, one route, alternative routes). There might also be flexibility in when to travel, and in how activities are sequenced, and punctuated by injunctions (to collect children from school etc.). Are these inter-related configurations of 'choice' special to travel?

In transport, flexibility is strongly tied to space (intended destination/s). Some claim that congestion is 'self regulating' in terms of feedback but does this mean there 'is' flexibility or does this depend on 'flexibility' or does it generate flexibility on the part of those who form the traffic jams.

What about financial flexibility and the need to deliver return on investment in nuclear power, as well as needing to keep it running at full load.

The weight of water, and its ability to travel downhill is key to where it 'lies' and how it is distributed, and for the energy costs of moving it around. Equally, water is not 'one' thing: treated water has different supply-demand relations than 'green' water that is 'there' but stored in trees and plants.

As with renewable energy supplies, the 'supply' of water in the form of rain is variable but demand is less so (though increases – for garden watering (with treated water), when water (rain) is in short supply). So this is as much about the relation between 'forms' of water as it is about 'water' as such. Despite knowing very little about the details of demand, the water system works relatively well. This is probably also true for other sectors. This made Stefan wonder: are there fundamental system differences? Water system also storage system. Issue of quality also different – water pressure can vary, voltage and frequency has very tight constraints. By which I mean over capacity is not so much of an issue.

Need to think more about interactions between goals, space, scale, technologies and modes of management. For instance, the history of energy supply is about meeting demand cheaply and this drives the forms and locations of flexibility involved. Supply systems cannot always make use of 'flexibility' that is 'offered' by the consumer. EDF want manageable, but not necessarily 'flexible' demand: infinite flexibility would be unpredictable and unmanageable. Currently, renewable energy sources take priority in the supply regime (other fuels are reduced to suit), but this then lowers the financial return on these other forms. Whether consumer flexibility is useful or not depends on the detailed organization of the system. Consumer response is geographically localized and effects depend on system design and management overall. Will the possible introduction of electric vehicles and electric heating generate more opportunities for 'flexibility'? (and if so, for whom).

There are issues of 'resilience' and questions about the priorities and goals of water provision as these play back into strategies of 'managing' catchments (so fish and people are in competition with each other). These relate to other flows especially of capital and finance and investment in building and maintaining systems of storage and distribution at different scales.

Are different supply systems: labour, water, energy, transport differently flexible – in the sense of being somehow systematically (but also historically) configured in ways that are variously networked/interdependent; stand-alone; defined by 'choice' or not, etc.

4 Storylines and narratives

These are little runs of argumentation that hold some of the above points together

Is there an ongoing historical battle between people and 'nature' – in which the historical struggle is about somehow resisting natural forces in order to enable 'flexibility'; how to think about seasonal policies and goals of reinserting humans as part of nature – romantic?; essential? A corollary of reification? From this it is an easy move to argue that flexibility is tied to an interpretation of linear time which ties it to a form of managerialism and that it is consequently a rationalizing discourse. There was much talk of 'calendar' time of equal units vs 'social time' or other periodicities of 'rituals' – sometimes associated with profane vs sacred time. And also talk about how different 'types' of time: home, church, work, economic – variously enable and constrain each other. To which we added two points. One was that objectified time is real in its effects and is thus a form of 'social' time. The second is that practices come before time and define meanings of fast, slow, done well etc. Clock time is secondary to this.

Nicola's narrative: How the measurement and knowing of time and energy are organized has a long history. We are now in a period of 'complexity' with unprecedented levels of interdependence, (linked to IT), which results in a highly reified regime of calculation. Accepting that this is so there are

unavoidable tensions with 'other' ways of knowing and doing time and energy. This is in part because complex systems have paradoxical results: they inadvertently generate unpredictability (because of their complexity). Greater measurement also paradoxically relates to less control. In which case, one might argue that the 'aim' is to reduce complexity and thus the 'need' for flexibility – to cope with unpredictabilities etc. (at a certain scale). Alternatively, smaller scale, less complex systems are not inherently predictable: but the nature of the coupling of supply and demand is perhaps different.

The claim is that using renewables in a complex/interdependent system requires ICT and increases the need for flexibility. But renewables in a less complex configuration reduce that need. This argues for different types of flexibility: type 1 relates to matching supply and demand in a 'complex' and reified system; type 2 is about coping with disruptions that are inherent in such systems and type 3 is about reconfiguring the conditions in which disruptions emerge. The question is how to engage with these 'complementary' systems and how to think about them together.

Nicola adds the following 'In my opinion a large scale transition to renewables necessarily tend to reinforce complexification of energy systems and it is quite hard for me to think of how complex systems might come to an end in the perspective of an energy transition. We will have to deal with the "complementarity" you refer to for a long time, if we will actually continue going for renewables on the large scale. As far as scarcity is concerned, I think that representations informed by transformations started in the 19th might actually change. As mentioned during the workshop, a transition to renewables can in my opinion potentially activate market transformations whereby, rather than energy, it will be power (i.e. energy/time) that will become a scarce resource.

But what if complexity is not (or not only) a 'real' phenomenon, but (also) a mode of conceptualizing the world?

Stan's narrative: Flexibility can be conceptualized in relation to individual agents; to practices or to systems of practice, and there are different dimensions of flexibility: temporal, but also spatial. All are linked to social histories of productive, natural, objective and other kinds of time. The material and social organization of different systems (water, transport, energy etc.) are shaped by/reflect all of the above, and by additional features of interdependence. Given all of the above we need to think about the purpose of the language and concept of flexibility. For instance, is flexibility like 'efficiency' – a discrete rationalized measure that is part of optimizing a system?. Or is it, rather, that taking about flexibility represents a means of challenging and also critiquing this view? More broadly, how is flexibility constituted as a discursive object, and how does this shift historically? What are the connotations of saying something is flexible, or not flexible: what kind of discourse is this?

Leftovers and more unfinished business



How to connect discussions about the social organization of time, historically, (as in Martin Green's thesis) to issues of flexibility. Are there different 'types' of time (over time) and therefore also, of flexibility. Maybe, but remember that flexibility is not only about time.

Systems of knowing and describing energy and time are outcomes of how society is organized, but they are also performative: they help organize society. We therefore need to have not 'just' a linear history of time management, but one that is embedded in the social practices and systems of which such systems emerge, and of which they are a part. This would also help explain the apparent 'failure' of decimal systems which were, for some reason, incompatible with practices and systems of practices already in place. But also notice that there are co-existing configurations of practices and times in any one society, so no external technology driven (e.g. the clock) 'shifts' that simply occur.

What methodologies and reifications are needed in order to 'see' flexibility and what are the units of flexibility? – answers clearly depend on all of the above, but these are good questions. This is evident in talking about different 'units' of flexibility, e.g. people, practices, or relations between practices.

On measurement and time: units of time, of energy, of hours of labour, and money are often combined, though each has a different history.

Time (meaning attention; engagement) is not the same as energy demand, and in all practices the relation between them is mediated by technology. Forms of variability, and change over time create conditions of their own making: flexibilities reproduce themselves, and change in the process.

How and when do the roles of consumer and provider flip over and in flipping how do these shifts redefine situated 'meanings' of flexibility? (issues not only of 'prosumers' but also forms of responsibility, ownership, control).

References mentioned:

Lukes, S. (1974) Power: a radical view.

Abbott, A. (2014) 'The Problem of Excess' Sociological Theory
<https://doi.org/10.1177/0735275114523419>



Questions and themes for Antti Silvast

How do 'existing' social systems and patterns of time set the scene for, or prefigure the scope for alternatives?

Is flexibility about the potential to open or develop new supply chains when some are closed.

Is flexibility defined not by the availability of individual materials, but by how combinations of materials are linked in practice. I.e. for what practices are specific combinations required and is there scope for substitution?

What is the difference between stockpiling and ensuring security of supply?: there are spatial differences, but both enable the ongoing functioning of networks.

Questions and themes for Sergei Shubin

OECD is in the business of counting jobs created and jobs destroyed with a focus on protecting employment. From this point of view, flexibility equals precarity. But how are both concepts constructed historically.

Nicola adds: In my opinion this point proves the need for an historical account of how flexibility has arisen in the labour sector (see the text I have written below)

“The flexibility concept arose in the field of labour law in the 1990s and its large scale adoption was significantly inspired by statistical assessments performed by OECD. These assessments were based on the measurement of two numerical coefficients: 1) Job turnover = jobs created – jobs destroyed in a given time period and 2) Employment Protection Legislation (EPL) indicator = coefficient resulting from the combination of 18 numerical factors and assumed to be able to measure the rigidity of national laws in relation to employment and dismissal. The value of these two abstract parameters has been calculated by OECD based on existent historical series available in its Member States and an anti-correlation between the values of these parameters has been identified. This anti-correlation has been interpreted by generally concluding that the more employees are protected by national legislations, the more jobs are lost in a country (see e.g. OECD Employment outlooks produced in the 1990s). Despite OECD revised its conclusions in beginning of 2000s, existing power centres have continued the propaganda triggered by OECD studies and States have continued implementing national laws informed by this interpretation.”

Are there parallels between the apparent trade-offs between flexibility (for workers, for employers) and security (for workers, for employers) that have parallels in the energy world, e.g. between providers and consumers. In some situations, flexibility for one party is at the cost of another, but not always.

Are configurations both of employment and of energy provision both (currently) tied to notions of consumer choice? If are there discourses and forms of ‘flexwash’ in the employment sector?

How does flexibility in the labour market relate to systems of energy and transport? In general, patterns of employment have direct consequences for using energy at home or at work, and for commuting and transport. Employment flexibilities in turn matter for the location of workers (in relation to homes), and to the distribution of goods as well. It would have been great to talk about this more.

There are further issues of seasonality: energy, water, and some kinds of labour are still somewhat seasonal. How are these organized in ways that obliterate these aspects in favour of constant provision despite variable demand.

The issue of human vs non-human labour and automation, and of delegation to (energy intensive) machines raises further questions about humans as forms of energy, but also about the labour and employment involved in managing energy, water or transport systems and how this is organized.

For instance, some consultancies have a reputation for hiring and firing, but also as providers, at short notice, of highly specialist skills. A feature that is ‘needed’ since those specialists are not required all the time.



Recipes

Martin's Aubergine and orzo

1 pot Aubergine Recipe

- ⦿ 1 tbsp olive oil
 - ⦿ 1 small onion, sliced
 - ⦿ 1 garlic clove, crushed
 - ⦿ 1 dried bay leaf
 - ⦿ 2 tbsp thyme leaves
 - ⦿ pinch chilli flakes
 - ⦿ 1/2 aubergine, cut into 1cm (1/2in) cubes
 - ⦿ 150g (5oz) orzo
 - ⦿ 400g tin chopped tomatoes
 - ⦿ 450ml vegetable stock
 - ⦿ ½ lemon, zested
- ☑ 1/2 x 31g pack fresh basil, leaves roughly chopped, plus extra sprigs to serve
- ☑ vegetarian hard cheese or Parmesan shavings, to serve

Heat the oil in a pan over a medium heat. Add the onion with a pinch of salt and cook for 5-7 minutes, stirring occasionally, until softened.

Add the **garlic**, bay leaf, **thyme** and **chilli**. Cook for 2 minutes. Add the aubergine and cook for 3 minutes, stirring occasionally.

Stir in the orzo, tomatoes, stock and lemon zest. Bring to the boil, then reduce the heat. Simmer for 12 minutes, or until the aubergine and orzo are cooked through.

Stir in the basil and season to taste. To serve, divide between large bowls and scatter over the cheese shavings, extra basil and freshly cracked black pepper.

Glenn's Pistou

Ingredients are onion, garlic, tinned tomatoes, a large squash, olive oil, tinned black olives and ideally sun dried tomatoes and balsamic vinegar. And rice.

Additional inventions included:

Spaghetti-porridge; non slip ice/sticky eyes/sleepy eyes (even in Africa); underwater piano; steam phone; uber taxi that takes you where it wants to go; on-demand trains; 48 hour day, disposable clothing; mobile trees; powdered water; cooling gloves....