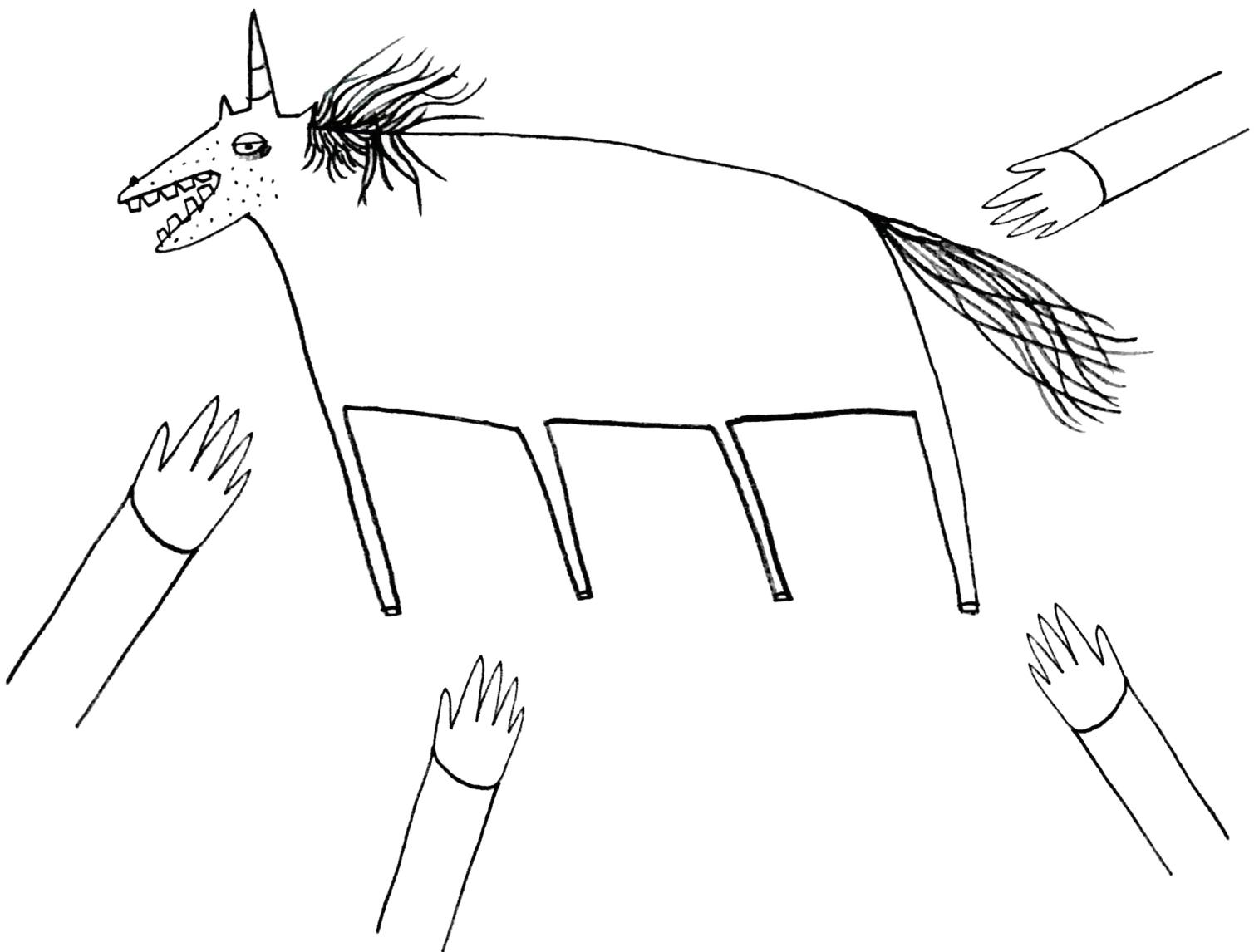


A short guide to ontology and epistemology

(why everyone should be a critical realist)



Tom Fryer

'For the beginner, ontology, epistemology and the whole philosophy of social science can be a maze: it's hard to know which way to turn because it's impossible to see the map. Tom Fryer has been through that maze recently enough to remember exactly how that feels and he has sketched out the main contours of the map to get you started on the route.'

Accessibly. Brilliantly. Critical realist-ly. I thoroughly recommend reading it.'

Dr Dave Elder-Vass, Loughborough University

'This is a really helpful guide for anyone who gets mixed up with philosophical terms like ontology, epistemology, positivism, constructivism and critical realism... Before reading it, I couldn't imagine that these concepts could be explained in such an easy (and fun!) way.'

Ying Yang, University of Manchester

'This guide is perfect for PhD students who want to understand what they do and don't understand and how they might go about understanding more based on how they understand what they understand. Understand?'

Bobbie Dutton, University of Manchester

'You're writing a guide about what now?'

My Gran, Unaffiliated

A short guide to ontology and epistemology: why everyone should be a critical realist

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Tom Fryer, 2022

1st edition

Tom Fryer, 2020

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Cover and design: Joanna Kozak

Thanks

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Hi there.

I'm not sure if you're just about to get started on a postgrad programme, if you're in the middle of a PhD or if you've been tasked with teaching research methods, but welcome to this guide about ontology, epistemology and critical realism.

The whole point of this guide is to try and make your life a little easier. I'm convinced that all researchers should know something about ontology and epistemology, but it can be hard to know where to begin. It can be such a daunting area, and one that you've often not had much training and guidance about.

If you're studying at the moment I'd be willing to bet a serious amount of money that at some point over the next few months you're going to hear someone mention 'ontology', 'epistemology', 'research paradigms' and 'philosophical assumptions'. If you're lucky you might even come across someone chatting about 'normativity'. Most unis run some kind of research design training programme for postgrads, so you'll probably come across these terms, as well as the occasional reference to 'positivism', 'constructivism', 'interpretivism', 'critical realism', 'pragmatism' and 'subjectivism'.

The first point to make is that *you are not stupid*.

There's a stupid number of terms, used in a stupid number of ways, to refer to a stupid number of different things. It really isn't you.

Faced with this situation, it's super tempting to just give up. You might go as far as figuring out a couple of sentences that you can wazz in your thesis like: "I adopt a pragmatist stance because I believe your methodology should respond to the research questions being asked". If you're feeling keen, you might even read Crotty's (1998) *The Foundations of Social Research* and pick your philosophical approach from the 'oven-ready' versions.

Please don't do this.

I'm not normally prone to melodrama, but I'd get down on my knees and beg you not to do this.

Here's my elevator pitch for why.

If you don't think about ontology and epistemology there's a risk that you'll go looking for shit that doesn't exist, or you'll ignore super obvious shit that's right in front of you. There's also the risk that you end up using shit methods, to answer shit questions, which is probably just going to give you shit answers.

Who knew elevator pitches needed more swearing? #ShitInTheElevator

Seriously though, to do good research it really does help to have a decent underlying philosophy.

That's why this guide aims to:

- A. Show you why it's important to think about your philosophical position.
- B. Give you a simple framework to understand all those complicated terms.
- C. Make the case for why you should be a critical realist.

To do this, I've organised the guide into four sections:

1. What's the point of thinking about ontology?
2. How you can understand all the complex terms and concepts?
3. What is positivism, constructivism and critical realism?
4. And, why should everyone be a critical realist?

Happy reading, and I hope it helps :)



#ShitInTheElevator

Section 1: What's the point?

Okay, what's the point of thinking about ontology and epistemology?

First things first. What even are ontology and epistemology?

Ontology is about stuff. It looks at what stuff is in the world and what that stuff is like. It includes questions like: what's in the world or what's real?

We could get all technical and break ontology into its two Greek words meaning *being* and *study*. That makes ontology the study of being, which is just a fancy way of saying the 'study of stuff'.

The other key term is epistemology. Again, it's kinda useful to look at how the word is formed, this time it's two Greek words meaning *knowledge* and *study*. So, epistemology is the study of knowledge.

Instead of questions about what the world is like—that's ontology—epistemology is more interested in how we can produce knowledge about the world. Are there good and bad ways of doing this? How reliable is our knowledge?

Now, it's pretty easy to get ontology and epistemology mixed up. I just saw a tweet that said something along the lines of 'if you know what ontology and epistemology are without googling, then there's a 100% chance you're a douche'.

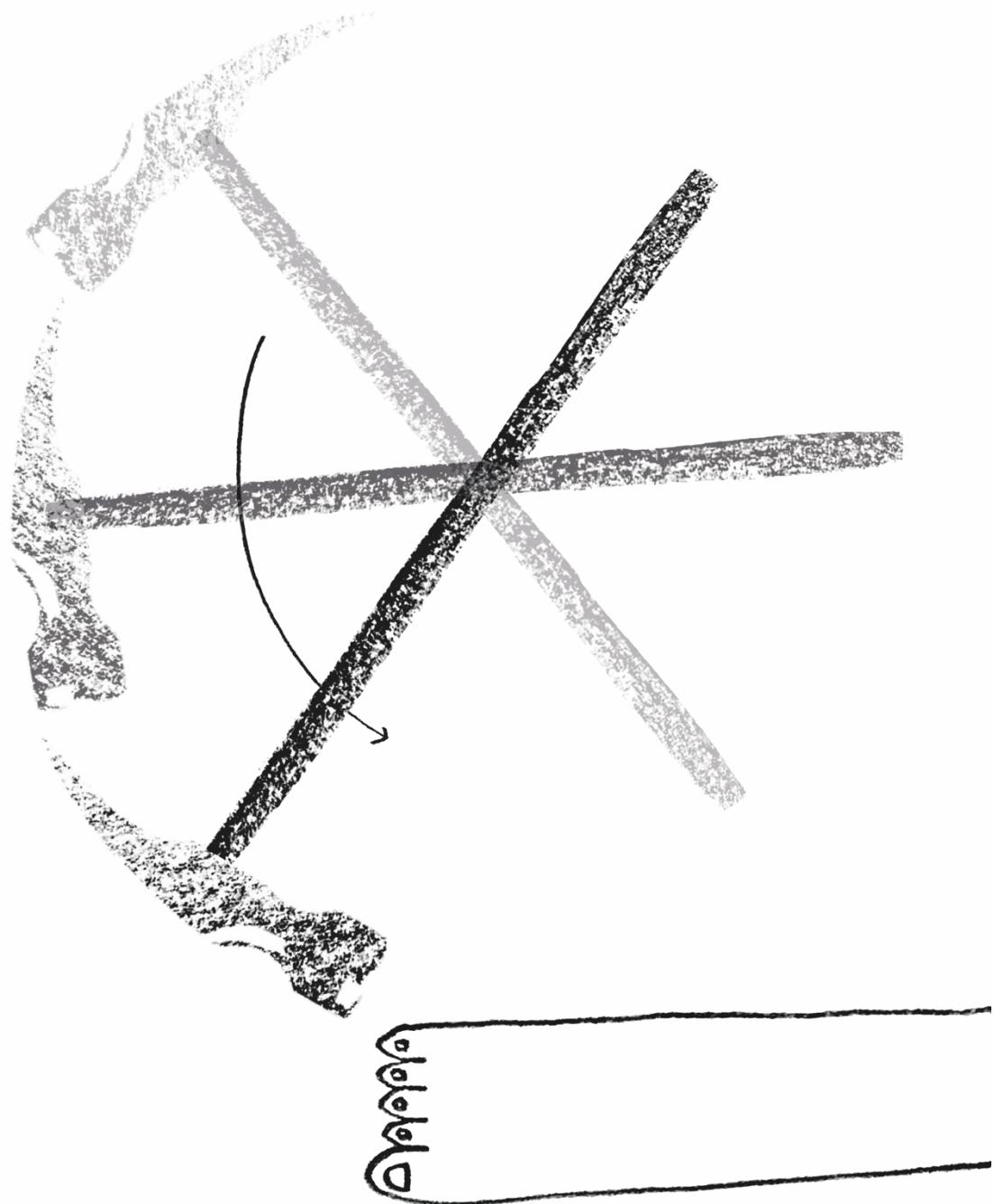
Ouch. That stings.

But it doesn't have to be this way. Here's a silly way to remember the difference:

- Ontology sounds like 'on toe logy', or the study of *what you just dropped on your toe*. If you just dropped a hammer on your toe, I guarantee you're going to be thinking about reality. You're going to be thinking about real hammers and real pain, in the real world. There's no way you're going to be in the mind-frame to ask: "How do I produce knowledge about this hammer?" You'll be pretty focused on its reality. That's ontology.
- Epistemology sounds a bit like 'epic stem ology', or the study of *epic stems*. Imagine your mate, who is a plant scientist, comes up to you and says "Hey buddy, look at the epic stem on this plant, how cool". I'm guessing your first reaction will be: Is that really an epic stem? How does Dave know that's an epic stem? Why does Dave have some right weird opinions? You can see these are all questions about *knowledge*, ie epistemology.

A tad daft, I know. But I hope it helps you remember.

Now we know the basics, let me have a go at convincing you that it's really important to think about which ontology and epistemology you adopt in your research.



'On toe logy'

"If you don't think about ontology and epistemology there's a pretty good chance you'll end up with a naff project."

Okay, here's why ontology is important. All research sets out to find things. Some sets out to find universal laws of nature. Others embark on a journey to collect stories. And a few smarty pants set out to find causal mechanisms that act as tendencies (I'll explain this later).

Now, having a bad theory of ontology means that you risk setting off into the world to find stuff that doesn't exist. This means your research would be doomed to fail from the start. A decent theory of ontology helps by stopping us from looking for the wrong things.

Think about these stories from Aldi (my local supermarket):

I'm having a mid-life crisis and want to buy a Ferrari. I decide to go to Aldi to buy one. As much as I might want to buy a Ferrari, and as much as I might delude myself that Aldi actually sells them, this has absolutely no impact on the reality of the world. Aldi just doesn't sell Ferraris. It's silly to look for Ferraris in Aldi.

Research that uses bad ontological assumptions is as daft as this hypothetical future mid-life crisis me looking for a Ferrari in Aldi. I might set out to find something in the world, but if I'm wrong about the nature of the world, then I'm never going to find it. It's a wild goose chase.

Actually, it's more like a wild unicorn chase, as geese do exist.

There's another way that a bad theory of ontology can set you off on the wrong path. Instead of looking for something that doesn't exist, this time our dodgy ontological assumptions can make us ignore big chunks of the world. Again, let's go to Aldi:

I love carrots. Carrot soup, carrot mash, roasted up with a bit of olive oil and rosemary. Yummy, yummy, yummy, in my tummy, tummy, tummy. I buy all my carrots from Aldi. In fact it's the only thing that I buy from Aldi. That's perfectly fine, if a bit weird. But I'd be wrong to tell my friend that Aldi only sells carrots. I'd be missing out on the big picture and all the other things that Aldi sells. They don't sell everything, but it's definitely more than just carrots.

This deluded carrot-loving fiend is a bit like research that only sets out to find stories. There's nothing wrong with carrots. There's nothing wrong with collecting stories. It can actually be a super important kind of research, engaging with people that academic research has tended to ignore in the past. This type of research only becomes a problem when we assume there's nothing else in the world other than stories. Just like Aldi sells more than carrots, the world consists of more than stories.

So, research needs a decent ontology, so that 1) you don't go looking for something that doesn't exist or 2) so you don't ignore the full reality of the world. If you set off with a bad theory of ontology you really are risking that you'll end up with a naff project.

Convinced? Maybe a little?

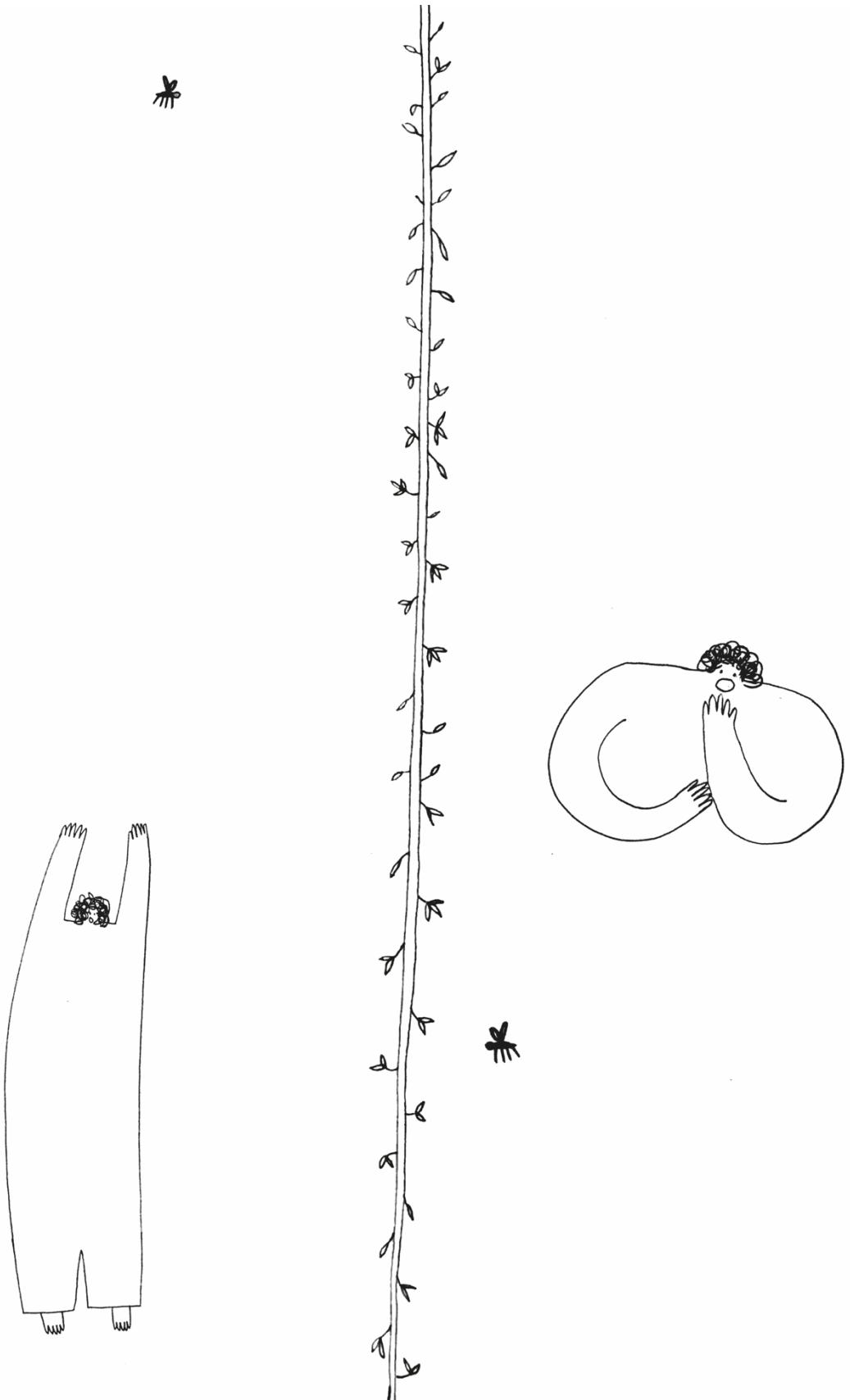
Hopefully you agree that it's at least a bit important to think about ontology. I might have been a little too bold and controversial with my original statement—I read somewhere that you tend to remember things more when you have an emotional reaction, so I'm going to claim this as some pre-planned teaching strategy... If you're still reading this then I guess it worked.

In the next section, I'll introduce a simple framework that helps you navigate through this complex area, with all its complicated terms and concepts.

There's also a glossary at the end with some definitions, just in case I slip into using too much jargon. I'll try not to though.

Key points

- Ontology or 'on toe logy' is the study of being and reality, like the reality of dropping a hammer on your toe.
- Epistemology or 'epic stem logy' is the study of knowledge, or how Dave knows if that stem really is epic or not.
- You should think about your ontology and epistemology before your research otherwise you risk searching for stuff that doesn't exist or missing out on big chunks of the world.



Epic stem, Dave

Section 2: How can I understand all this complicated stuff?

You might be minding your own business, eating a sandwich, dozing off, in an intense meeting with your supervisor or maybe even down the pub (if you've got cool mates), but at some point you'll get asked:

'What philosophical paradigm are you using?'

'What's your ontological and epistemological position?'

Panic stations.

What the hell are you going to say?

You've probably heard a ridiculous number of terms used to describe different philosophical positions. Some of these probably ring a bell: subjectivism, constructivism, interpretivism, phenomenology, hermeneutics, positivism, objectivism, post-positivism, post-modernism, critical realism, critical theory, post-colonialism, pragmatism, structuralism... The list could go on and on. But which one are you going to pick?

Let me let you into a secret. The person asking you these questions probably also hasn't got the foggiest what a philosophical paradigm is. Like you, they keep getting all the terms mixed up. Like you, they think that ontology and epistemology sound like a hospital department specialised on bones and stem cells. Like you, they've probably been put off from looking into philosophy because too much of it seems dense for the sake of being dense, complex for the sake of being complex, discombobulated for the sake of being discombobulated.

The second thing to note is that most of these complicated terms are bollocks.

I don't mean that they're useless. They often do refer to a research tradition, so in that sense they're useful. But the terms really are pretty useless for understanding and categorising different philosophical positions.

It's a classic case of too many cooks have spoiled the broth. There's so many people doing all kinds of research and everyone wants to give their own thing a new name. This means we've ended up with tonnes of different terms, used in different ways by different people, so it becomes almost impossible to work out what anything means. Argh! Stuff is way too complicated!

I propose we start again.

We need to chuck the baby out with the bathwater. Actually, we need to rip out the bath and install a shower—who has time for a bath nowadays?

We need to go back to the basics of what makes a philosophical position and build up our concepts from there. Let's do this.

Okay, for any philosophical position, we only need to think about two things:

- Ontology
- Epistemology

Luckily we already know what these are. Ontology is about stuff (dropping a hammer on your toe) and epistemology is about knowledge (how do you know that's an epic stem, Dave?).

When it comes to ontology, there's two basic positions: realism and irrealism.

It's pretty much what it says on the tin, realists think that there is a real universe out there. There's a real cat on my lap. My decision not to wear a dress is influenced by real gender structures. The other position is irrealism, which denies that there is a real universe out there. Now, most irrealists aren't irrealists about everything. They might think that there is a real cat on my knee, but that social structures aren't real. More on this later.

In epistemology there's also two positions. I'm going to use the terms *objectivist* and *subjectivist*, although there are definitely some positions that fall in the middle. An objectivist position assumes that there are no large barriers to producing knowledge about the world—we can just sit down, observe the world and produce truthful knowledge. A subjectivist position is more sceptical. They might argue that our knowledge could be wrong, that our knowledge is fallible. They also might question if we really can just sit down and observe the world in some neutral and objective way. Instead, subjectivists argue that all our observations are *theory-dependent*.

Let me explain what the *theory dependency* of observation means through an example. It's always easier to use a real-world example to chat about this kind of stuff.

Okay imagine that you're a researcher looking at how refugees are treated in the UK. An objectivist assumes we can just go out into the world, observe how refugees are treated, then write up our findings. That's all there is to it. However, a subjectivist would say that's way too simple. Who we consider to be a 'refugee' is theory-dependent, rather than neutral and objective. Some theories might make a big distinction between 'economic migrants' and 'refugees'—the former are apparently migrating for economic benefits, whereas the refugees were forced to flee for political reasons. Other theories might question this simple binary and argue a refugee is anyone who has fled their home country, for whatever reason. The latter approach therefore defines 'refugee' much more broadly.

The definition of 'refugee' that we use could have super important consequences for our research. Imagine if the UK treats those fleeing for political reasons reasonably well, but is pretty inhumane to those fleeing due to economic factors. If we only look at the former, this would miss the inhumane treatment of the latter. In this way, there's no neutral position from which to undertake research and produce knowledge.

Phew. I think we all need a break after that.

Did you know that the fastest penguin can swim at speeds of up to 22 miles per hour? That is one speedy penguin.

Okay, break over. Let's get back to it.

When we put all this together, any philosophical position needs to pick an ontology and an epistemology. You need to pick *realism* or *irrealism*, *objectivism* or *subjectivism*. Then, bingo, you have a philosophical position. It might not be a good philosophical position, but it is a philosophical position.

We can use this framework to understand all of the other philosophical positions. All we need to work out is:

- Is it *realist* or *irrealist*?
- Is it *objectivist* or *subjectivist*?

Obviously, this means there's four possible combinations:

1. Realist|Objectivist
2. Realist|Subjectivist
3. Irrealist|Objectivist
4. Irrealist|Subjectivist

I'm going to call these:

1. Positivist (Realist|Objectivist)
2. Critical Realist (Realist|Subjectivist)
3. Very Very Confused (Irrealist|Objectivist)
4. Constructivist (Irrealist|Subjectivist)

We can basically ignore Number 3. It makes no sense to be irrealist and think we can produce objective knowledge - how could we produce objective knowledge about something that doesn't exist? Let's get rid of that combination.

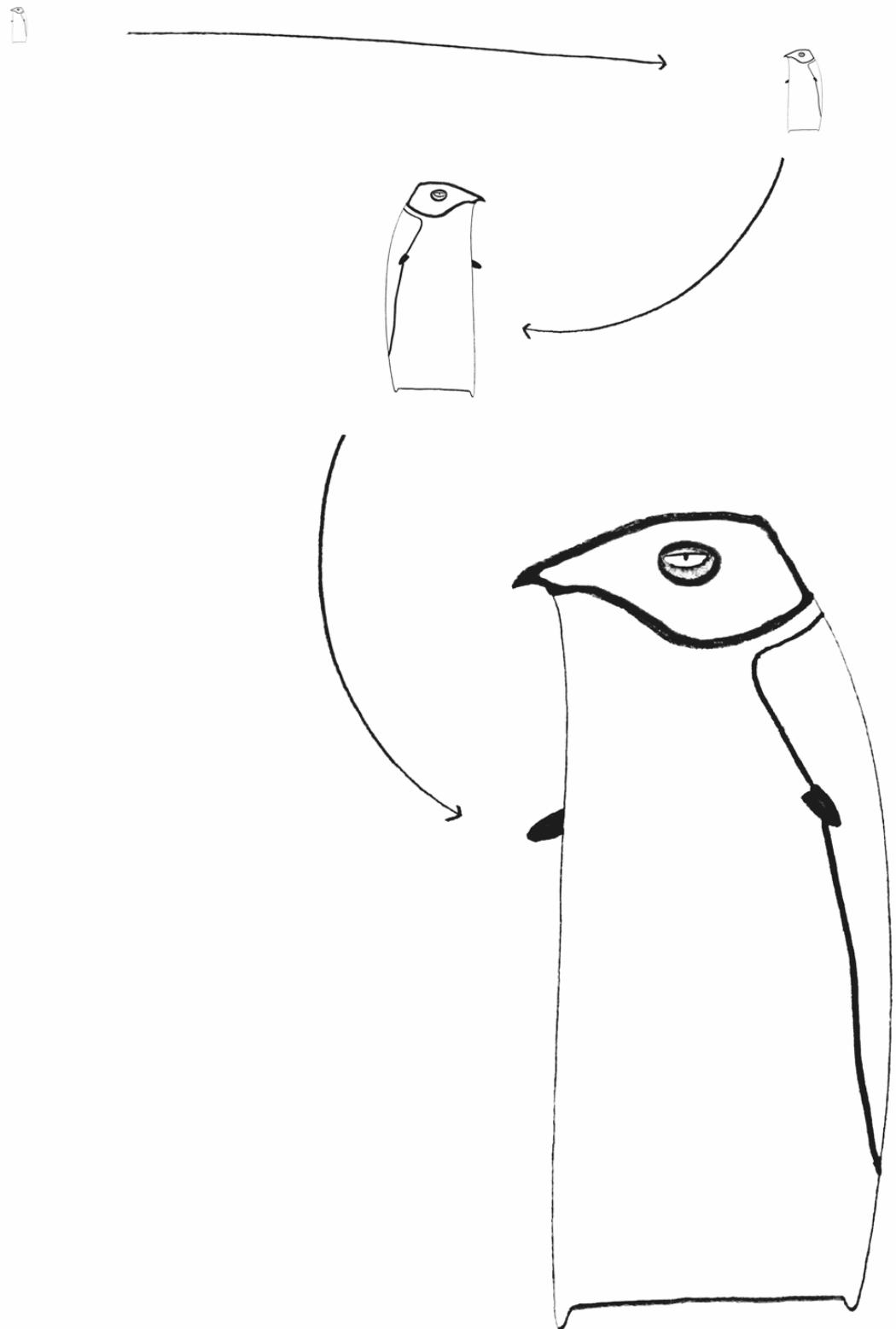
This means all those complicated terms that you've heard can basically be boiled down to: *positivism*, *constructivism*, and *critical realism*.

That's it. Just those three terms.

In the next section, I'm going to explain each of these positions, before arguing in Section 4 that everyone should be a critical realist.

Key points

- A philosophical position is made of ontology (realism or irrealism) and epistemology (objectivism or subjectivism)
- This results in three different positions:
 - Positivism – realism and objectivism
 - Critical realism – realism and subjectivism
 - Constructivism – irrealism and subjectivism



A speedy penguin

Section 3: What are positivism, constructivism and critical realism?

We've seen how you only really need three basic philosophical positions to get an overview of the field of ontology and epistemology. In this section, I'll tell you what each of these are, and how they tend to influence social science research.

Positivism

The first philosophical position is positivism, which takes a realist/objectivist stance. It assumes:

- The world consists of real stuff, specifically *universal laws*.
- We produce knowledge in objective ways.

Okay, let's start with the ontological assumption that the world has real universal laws. What does this mean?

A universal law is basically a statement about how two events are related to each other. I'm sure you've seen loads of examples of this. Here's some made-up ones:

- Gender predicts 12.489% of the variation in mathematics scores at age 16 in England ($p<0.05$).
- Family socio-economic status is a significant predictor of the likelihood of committing a crime, with an effect size of 23.8977469% ($p<0.01$).
- The habit of drinking directly from the kettle predicts 0.1% of the variation in burns victims ($p<0.1$).

The problem with positivism's ontology is that 1) universal laws between events don't exist, and 2) this is such a shallow approach to causation.

Let me try and explain the first point through the example of gender and maths scores. Maths scores might be influenced by a tonne of things, from teaching quality to confidence, from educational background to whether you consistently go to school hungry. Even if gender is one of the things that influences your score, it could interact with all these other factors in complex ways. Gender might interact with confidence, if girls are discouraged from grappling with problems "Don't worry about it Love, maths just isn't your thing". Gender might also interact with parental educational background, if students from less privileged backgrounds are more likely to have mothers who weren't encouraged to study maths, cementing the idea that it's not for girls. Gender could have similar interactions with teaching quality (the teacher focuses mainly on boys), hunger (being hungry might be a tipping point for some girls who were already discouraged) and any other factor. All this varies from person to person, from context to context, and makes it impossible to quantify a universal law about gender and maths scores. This just isn't what the world is like. It's the wrong ontology. It's like searching for unicorns.

Secondly, trying to find a universal law linking gender and maths scores is a really shallow approach to causation. If you do find an association this tells you absolutely nothing about *how* gender influences test results. We've no idea if this is due to gendered expectations of teachers, a lack of role models or even some biological factor. Finding an association tells us diddly-squat about why these events are linked. The association doesn't show us that gender is causal—all it shows is a correlation. And, as the saying goes, correlation doesn't imply causation.

So, research that seeks out these universal laws is deeply flawed. Instead, research should tell us about how causal mechanisms produce the events that we observe.

In the discussion above I've not meant to imply that quantitative methods and statistics are inappropriate. In fact I'd argue the opposite, they can be an essential part of our research. But what they can't do is find universal laws (because universal laws don't exist). For more on this point, I'd really recommend Doug Porpora's *Do realists run regressions?*

Another problem with positivism stems from its objectivist epistemology. It assumes that we can simply observe the world and produce knowledge. This fails to recognise how our observations are theory-dependent. Think back to the refugee and economic migrant example. By ignoring the ways that research is theory-dependent—such as by drawing on a theory to conceptualise what it means to be a 'refugee'—positivistic methods misrepresent knowledge production. We don't simply observe the world from some objective stance and produce knowledge. One consequence of this mistake is that positivism doesn't recognise the need for reflection in the research process. We need to think about the theories we are using, where they came from, who they benefit, and who they exclude. This is our responsibility as researchers.

Constructivism

The second philosophical position is constructivism, which takes an irrealist | subjectivist stance. It is:

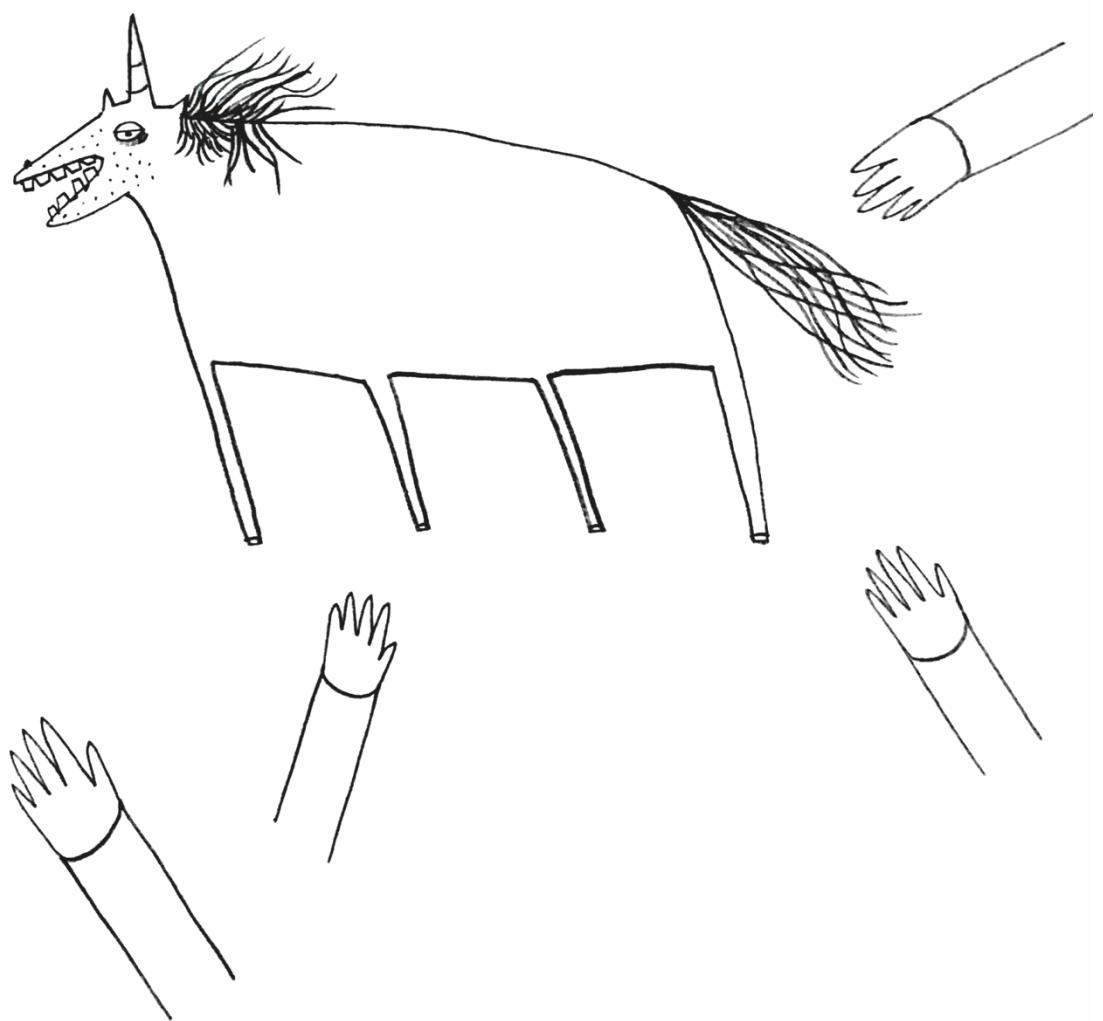
- Largely irrealist, ignoring (less extreme constructivism) or denying (extreme constructivism) the reality of big chunks of the world.
- Subjectivist, seeing knowledge production as *fallible* and *theory-dependent*. Extreme constructivism might go even further and argue that knowledge is *theory-determined*.

In one sense, constructivism takes a big step forward from positivism. It fully acknowledges that it makes no sense to go looking for universal laws. However, the problem is that it goes too far in its critique. It becomes too pessimistic about our ability to produce knowledge about the world.

In social science, constructivism tends to influence studies by encouraging them to focus on *discourse*, *meaning* or the *experiences* of people. This is not a false ontology in the same sense as positivism—constructivism doesn't go searching for things that don't exist. The problem is that constructivism takes too narrow of a perspective on the world by encouraging us to only focus on discourse, meaning or experiences.

This is less a wild unicorn chase, and closer to the belief that Aldi only sells carrots. Or it's like convincing yourself that you're taking the dog-lead for a walk, rather than the dog.

I'm sure you've come across studies that focus on the *experiences* of people. These studies often do 'give voice' to an under-represented group that has been marginalised by previous research. Listening to and engaging with these experiences is an important part of ethical research.



Searching for universal laws

However, the endpoint of our overall research shouldn't be the collection of stories, worldview or experiences. This might be the end of a particular paper or study, but the research process should continue and build upon this.

Imagine there's a study of poverty in a particular context. It's essential to understand the worldview of people in your research project, rather than designing an intervention without understanding and engaging with this social context (this is still done too often). But, in an ideal world, the study should go beyond describing people's experiences. We need to find the causes of why people are in this position and how these barriers can be transformed.

Philosophical constructivism can hinder these next steps in the research process—it can hinder the movement from stories to causal explanations and transformations. I say 'philosophical constructivism' because I reckon if you asked most social science researchers who identify as 'constructivists' they'd say that they do believe in causes and they hope their research will help to overcome some of the barriers people face. In this way, by the definitions I've used in this guide, they wouldn't be a philosophical constructivist. Although few social scientists actually are philosophical constructivists, this position can still have an influence by encouraging us to stop too early in the research process - we've got to go beyond discourse and experiences to also look at causes.

Let's look at another example. Imagine a study analyses the ways refugees are represented in discourse—whether linking refugees to diseases or the ways in which a binary is created between refugees and economic migrants—this is good and important research. The problem is when the analysis stops here. We still need to ask questions like:

- What impact does this discourse have in the world?
- In what ways do people suffer because of this discourse?
- To what extent do different people adopt this discourse and how does this influence their actions?

The fact that there is a discourse does absolutely nothing to show the impact of discourse in the world. It is up to researchers to study the impact and consequences of this discourse. More extreme forms of philosophical constructivism can deny that this is possible, which wrongly discourages us from taking this next vital step.

Another problem with some forms of constructivism is that it holds a problematic epistemological position. These more extreme forms of constructivism argue that knowledge production is *theory-determined*, not just *theory-dependent*. This denies that the world can influence our theories, and ends up with complete relativism—there's no way of saying one theory is better than another.

Imagine you go to the pub and the bloke at the bar start telling you about how babies are brought by a flying stork after being made in a secret lake. That is one theory you could hold about human reproduction. But, just because this fella believes this theory, this doesn't make the world that way—his theory does not *determine* whether babies really are formed in a secret lake. Our observations might be dependent on our theories, but our theories definitely don't completely determine what reality is like.

Critical Realism

So, if positivism goes chasing unicorns, and more extreme forms of philosophical constructivism are adamant that they only take the dog-lead for a walk, what does critical realism bring to the table?

Critical realism builds on both of its rivals. It acknowledges that the world is real, and that knowledge production is fallible and theory-dependent but not theory-determined. It's happy to say that meaning and discourse are important, but that they're not the only things that exist.

I'm actually going to tell you more about this in the next section, and I'll try to make the case for why you should be a critical realist.

But, let me end this section with a quick rant about 'pragmatism'.

There's a school of social theory in the US called 'pragmatism'. This isn't what I'm talking about. I'm talking about 'pragmatism' as the belief that philosophical questions of ontology and epistemology don't matter for researchers.

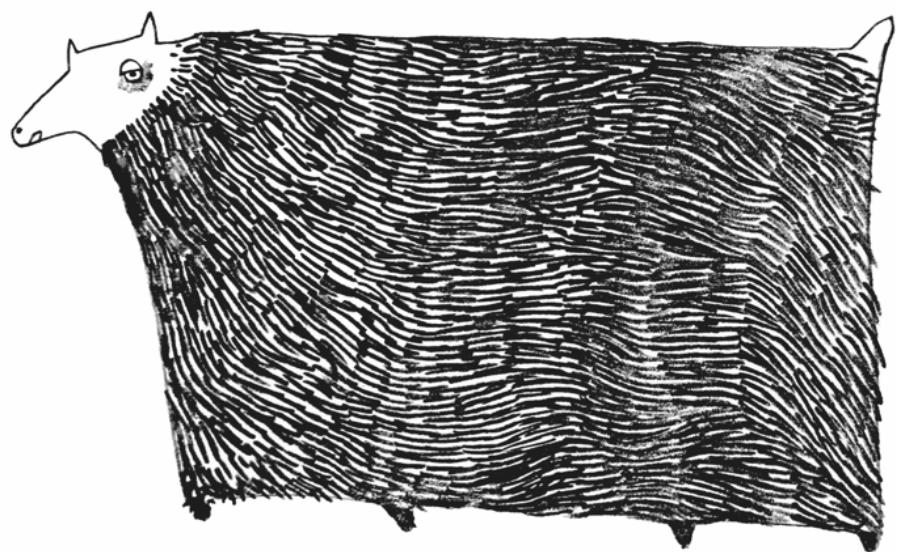
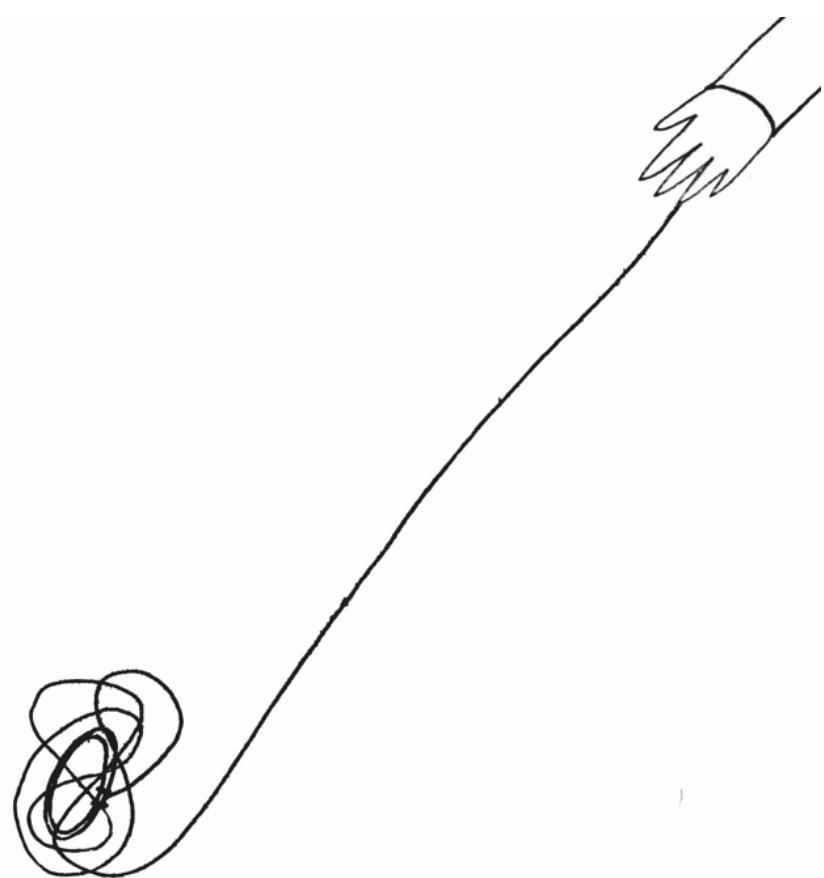
You'll often hear pragmatists say things like "It's okay to adopt whichever philosophical position you want. All you need to do is to make sure it's consistent". If I was a betting man, I'd guess that most methods training in universities tend to adopt this pragmatist position. In some ways this makes sense, if you have a class full of researchers from very different disciplines. In other ways, it's utter rubbish.

I hope you can see why. Without a decent theory of ontology and epistemology you could go looking for stuff that doesn't exist, or you could end up accidentally ignoring a big chunk of the world. Being consistent doesn't make these problems go away.

What we need is the best philosophical position, not just one that we apply consistently. I think this is critical realism.

Key points

- Positivism goes looking for universal laws that don't exist. It gives a very shallow perspective on causation.
- Constructivism encourages researchers to only consider meaning and discourse. We must go further to look at causes, social structures and their impacts.
- Pragmatism (not the US school) is utter rubbish.



Taking a dog-lead for a walk

Section 4: Why everyone should be a critical realist

Okay, so what is this critical realism that I've been banging on about? And why is it the best theory of ontology and epistemology?

Let's start with the second question.

Critical realism is the best theory of ontology and epistemology because it reaches its conclusions through a powerful method called retroductive reasoning.

Don't worry, retroductive reasoning isn't as complicated as it sounds. It's basically a kind of logic that looks for the best explanation. Say you just put some chocolate next to your baby, and then a minute later the chocolate has gone and Little Billy has chocolate smeared round his face. What's the best explanation for this? We'd be justified in concluding that 'Little Billy ate the chocolate'.

Roy Bhaskar, the founder of critical realism, used exactly the same kind of reasoning to work out what the ontology of the world must be like. He asked the slightly odd question of: *what must the ontology of the world be like in order for scientific experiment to be possible?*

To do this, Bhaskar starts with the assumption that scientific experiment can produce knowledge. This isn't really too controversial. If you tend to rely on drugs prescribed by your doctor then you're probably okay with the idea that scientific experiment can produce knowledge.

So, just like we asked, 'What is the best explanation for how the chocolate disappeared?' Bhaskar asks, 'What is the best explanation for how scientific experiment can produce knowledge?'. Or, 'If scientific experiment is possible, what must the ontology of the world be like?'.

If anyone wants to see this written in some formal logic, here you go:

Major Premise	Only if Q, then P.	Only if the world has ontological properties X, Y and Z, then scientific experiment is possible
Minor Premise	P	Scientific experiment is possible.
Conclusion	Therefore, Q	Therefore , the world has properties X, Y and Z.

I'll explain what the ontological conclusions X, Y and Z are in a minute.

The reason why critical realism is the best theory of ontology and epistemology is because of the strength of this retroductive argument. There are only a few ways it could be faulty. We've already seen that it's a bit daft to argue that the minor premise is wrong, we all live our lives in ways that acknowledge that scientific experiments are possible, at least in some parts of natural science, and they do produce knowledge.

The other main way that critical realist conclusions could be wrong is if there's some dodgy reasoning in the major premise. That's definitely possible, but it wouldn't make critical realism useless. To correct a mistake in the major premise would only make critical realism a

better account of the world. Critical realism's a bit like the hulk getting angrier, the more you correct (or add to) the major premise the stronger it gets...

That doesn't work perfectly as an analogy, but you get the idea.

Neither positivism or constructivism have an underlying method like this retroductive reasoning. This is part of the reason why positivism ends up trying to find universal laws, which don't exist. Similarly, philosophical constructivism has some real insights on the ways in which knowledge production is subjective, but runs into problems when this critique is taken too far—whether in denying the reality of big chunks of the world, or arguing that knowledge is theory-determined. This all means that these philosophical positions aren't able to give as good an account of ontology and epistemology as critical realism.

I wanted to share this 'method' of critical realism to give you some sense of where its conclusions come from. However, this isn't the time to completely map out how it uses this method to reach all its conclusions. Instead, I thought it would be more useful to tell you about two of its main conclusions, and why I think they are particularly important for social science researchers:

1. We need three key concepts: experiences, events and causal mechanisms.
2. Social science research must consider structure, agency and their relation.

If you do want a more detailed introduction to critical realism, check out Gorski (2013) *What is Critical Realism? And Why Should You Care?*, Collier (1994) *Critical Realism: An Introduction to Roy Bhaskar's Philosophy*, or the resources on the Critical Realism Network.

Three key concepts

I reckon the most useful thing about critical realism are the three concepts of experiences, events and causal mechanisms.

Here's some quick definitions:

- Experiences - these are the perceptions of things by agents, eg I experience eating chips by the seaside.
- Events - these are the things that happen in the world, some of which are perceived by agents, eg a bird poops on my head.
- Causal mechanisms - these are the things that produce events, eg the financial precarity that constrains a student from going to university.

Once we know the difference between experiences, events and causal mechanisms we're in a pretty good position to go and do research in a vaguely coherent way. The concepts allow us to understand what our data is (often agents' experiences of events or measurements of events), and what we should be aiming to do (offer explanations of how causal mechanisms bring about these events and experiences). The three concepts stop us from falling into the trap of only focusing on what we can measure and observe (events and experiences), and reminds us of the task of finding the underlying causal mechanisms.



Little Billy and his chocolate

Let's jump back to the example of gender and maths test scores to see the three concepts in practice. Okay so, firstly there's experiences—students have particular experiences within the classroom. Secondly, there's events, such as the scores that students get in an exam. Then thirdly, there's causal mechanisms or the things that cause these experiences and events. Imagine we find a pattern in gender and maths scores—critical realism pushes us to ask what causes this pattern of events. In this way, the three concepts help us to clarify what we're looking at in our research.

There's a few more things to unpack here.

One. The concepts make it clear how critical realism's approach to causation differs from positivism and constructivism. Critical realism says causal mechanisms are the things that cause events to occur—the impact of gender on students in a classroom. Positivism's mistake is to look for causality between events—it looks for associations of maths scores and gender, but ignores the underlying causal mechanisms. Constructivism is too pessimistic to even attempt this search for causes, and is content to focus on experiences.

Two. Critical realism shows that causal mechanisms act as tendencies. The world isn't a scientifically controlled lab, there's always loads of stuff happening and tonnes of causal mechanisms in operation that interact in complex ways. This means causes act as tendencies, they only *tend* to bring about events. We can't quantify these tendencies as universal laws, like positivism claims—there's no universal impact of gender on maths scores, but instead a variety of causal mechanisms that will have more or less impact in different contexts with different students.

Structure, agency and their relation

Another of critical realism's key contributions is to give us a theory about the relation between structure and agency. The key person here is Margaret Archer.

Archer argues that both structure and agency are real. They're both ontological features of the world, and it would be a mistake to ignore either of them. Neither should we fuse them together, as structure and agency exist at different 'levels'. There's not space to explain this, but critical realism makes the case that the world is *emergent and stratified*.

In terms of the relation between structure and agency, Archer argues that we should conceptualise this relation through a three-step process that considers:

1. The situations in which people act, and how these are shaped by social structures.
2. The concerns of agents and how they reflect on their situations.
3. The projects agents undertake in these situations, and their impacts.

Think about the example of understanding why someone goes to university or not. This three step process helps to separate out social structures, agency and their relation.

If we're looking at whether a person chooses to go to university, we need to firstly think about the situation they're in. How is this person positioned in terms of financial resources? Do they have childcare responsibilities? How stratified is the higher education system? We then need to think about what the person is concerned about. What are their aims, and what do they care about? Finally, we should look at what this person chooses to do to bring about their concerns in this specific context and what the impacts of this action are. These

impacts could be on the individual, eg whether the person experiences social mobility by attending university, or these impacts could be on the social structures, eg whether a social structure was transformed or reproduced.¹

In this way, social structures and individual agency exist together. We must consider them together in our research. If we don't do this we're making an ontological mistake.

This has some pretty big implications. If a theory ignores structure (as with some rational choice theories) or ignores agency (as with some interpretations of Durkheim), or doesn't separate out structure and agency but smashes them together (as with Giddens' structuration theory) then these theories are problematic—they are problematic because they miss a basic ontological feature of the world. At the very least they need modifying to address this issue.

In this way, critical realism can help us choose which social theories to use in our research and how we might need to adapt them. It won't narrow this down to one theory, but it can help you to narrow the range or point towards the ways that a theory should be adapted.

Well folks, we've reached the end of the road.

I hope this guide has helped introduce you to this area and gives you a way to navigate your way through questions from people about your ontology and epistemology. Also, for any keen beans I hope this is the start of you getting to know critical realism.

Let me leave you with this. When you turn to your research, just ask yourself:

1. Which philosophy underlies my research and can I justify this?
2. Does my research distinguish between experiences, events and causal mechanisms?
3. Have I considered structure and agency in an appropriate way?

If you ask these three questions, you're well on the way to a great project. Best of luck with it!

Key points

- Critical realism is the best theory of ontology and epistemology, using a powerful kind of retroductive argument to reach its conclusions.
- Conclusion 1: the concepts of experiences, events and causal mechanisms are essential to have an adequate approach to causality.
- Conclusion 2: agency and social structures are ontological features of the world, and they exist relationally. We should use social theories that accept this ontology.

¹ Archer says that social structures tend to change through collective rather than individual action. For example, to transform the social structures that make it more challenging for people from disadvantaged backgrounds to attend university requires collective action around things like admissions requirements, university outreach and previous schooling.



The Hulk

Glossary

Term	Definition
Ontology	The study of stuff, or the study of being.
Epistemology	The study of knowledge.
Philosophical position	Every philosophical position has an ontology (realist or irrealist) and an epistemology (objectivist or subjectivist)
Realism	An ontological position that says there is a world that is (at least in some way) independent of the researcher.
Irrealism	An ontological position that says there is not a world that is (in any sense) independent of the researcher.
Objectivism	An epistemological position that says we can simply observe the world and produce knowledge.
Subjectivism	An epistemological position that says we cannot simply observe the world and produce knowledge. Instead, knowledge production is theory-dependent or theory-determined.
Theory-dependent knowledge production	A view that knowledge production is influenced by the theories that a researcher adopts.
Theory-determined knowledge production	A view that knowledge production is completely determined by the theories that a researcher adopts. This results in the view that all knowledge is equally valid.
Positivism	A philosophical position that is realist objectivist.
Constructivism	A philosophical position that is irrealist subjectivist.
Critical realism	A philosophical position that is realist subjectivist.