

Reality-drag

Scientific realism as a set of practices that achieve realness

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P.I. MEATigation: Towards sustainable meat-use in Norwegian food practices for climate mitigation. (KLIMAFORSK 2020-2024)

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P.I. Epistemic and Ethical Functions of Categories in the Agricultural Sciences. (National Science Foundation 2023-2026)



Thesis : reality

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Reality is performatively constituted by

- performing the real
 - realing
- achieving realness

Outline

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- Drag influence
- What is reality?
- Scientific realism?
- Drag as method for understanding realness
- Performing science, achieving realness
- Case: performing meat
- So, what is different from all the other scientific realisms?

Method : drag

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Drag shakes concepts of reality
as a thing or state:
it 'outs' reality as performatively
constituted.

Background

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Inspiration: drag

Ballroom culture

- New York City 1980s-90s Black and Latinx gay and transgender communities
- Response to exclusionary practices of predominantly white pageants

Photo credit: Chantal Regnault



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RuPaul's DRAG RACE



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Cast of Season 10

<https://www.vox.com/culture/2018/3/22/17144202/rupauls-drag-race-history-season-10>

Efstathiou 2022

“Performing ‘meat’: Meat replacement as drag”

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MEAT is performatively constituted
--and it can be constituted differently.

Efstathiou & Kendig

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REALITY is performatively constituted
--and it can be constituted differently.

What is real?

Standard position

- Realism must entail commitment to a mind-independent world of categories, kinds, processes, and relationships that are “out there” (Chakravartty 2023: 16).

Non-foundationalist approaches

- Realist commitments about data, phenomena and natural kinds are conceivable only insofar as they are considered from a human point of view (Massimi 2022)
- The real world is as we experience it is defined through operational coherence between it and our theories. What's real is what works. If you don't know if it's real, then 'suck it and see' (Chang 2016, 2022)

Method: Drag



- Intersecting conventional norms but transgressing them
- Shaking 'reality'

achieving 'realness'
creating new realities

Performing reality as achieving realness

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Reality vs. Realness

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- Concept of realness: key to Ballroom

How close one is to “blending in” or “passing” as real

-- KEY for emancipatory/revisionary work aimed at remaking and resisting oppressive realities

Dressing-up and performing reality



Duhem famously said that the task of science is

“to strip reality of the appearances covering it like a veil, in order to see the bare reality itself”

(Duhem 1991).

Our proposal is that science is rather, in the business of dress up and make up: creating the right veil for the right occasion for the scientific claim to ‘pass’ as real and convince the right people.

Achieving realness in drag & science

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DRAG – achieving realness reconciles possibility with ‘reality’ in making the possible reality in pageants

SCIENCE – making possible entities real through modelling, constructing counterfactual statements, or devising proof of concept experiments in support of potential technological interventions

Case: Performing MEAT

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Science of meat analogues



'First generation' plant-based meat analogues

- Designed to emulate the structure of meat
E.g. Texturised Vegetable (soy) Protein

'Second generation' plant-based meat analogues

- Designed to emulate the taste and colour of meat
E.g. Beyond Meat TM, Light life TM, Impossible Foods TM

(He et al. 2020)

What is 'meat'?



Cross-cultural survey by Hansen et al. (2021)

"We concluded that the concept of meat is centered on the notion of '**muscle parts of animals**', although depending on cultural background, not all animals or all parts of animals are considered sources of meat." (10041)

What is 'meat'?

That thing you cut,

cook,

chew on,

taste,

smell,

look at... ?

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What is 'meat' in food science?

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That thing you cut,

cook,

chew on,

taste,

smell,

look at... ?

'Meat' performed in/as food science

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That

STRUCTURE,

COMPOSITION,

FUNCTIONALITY,

MOUTHFEEL,

FLAVOUR,

ODOUR,

APPEARANCE...

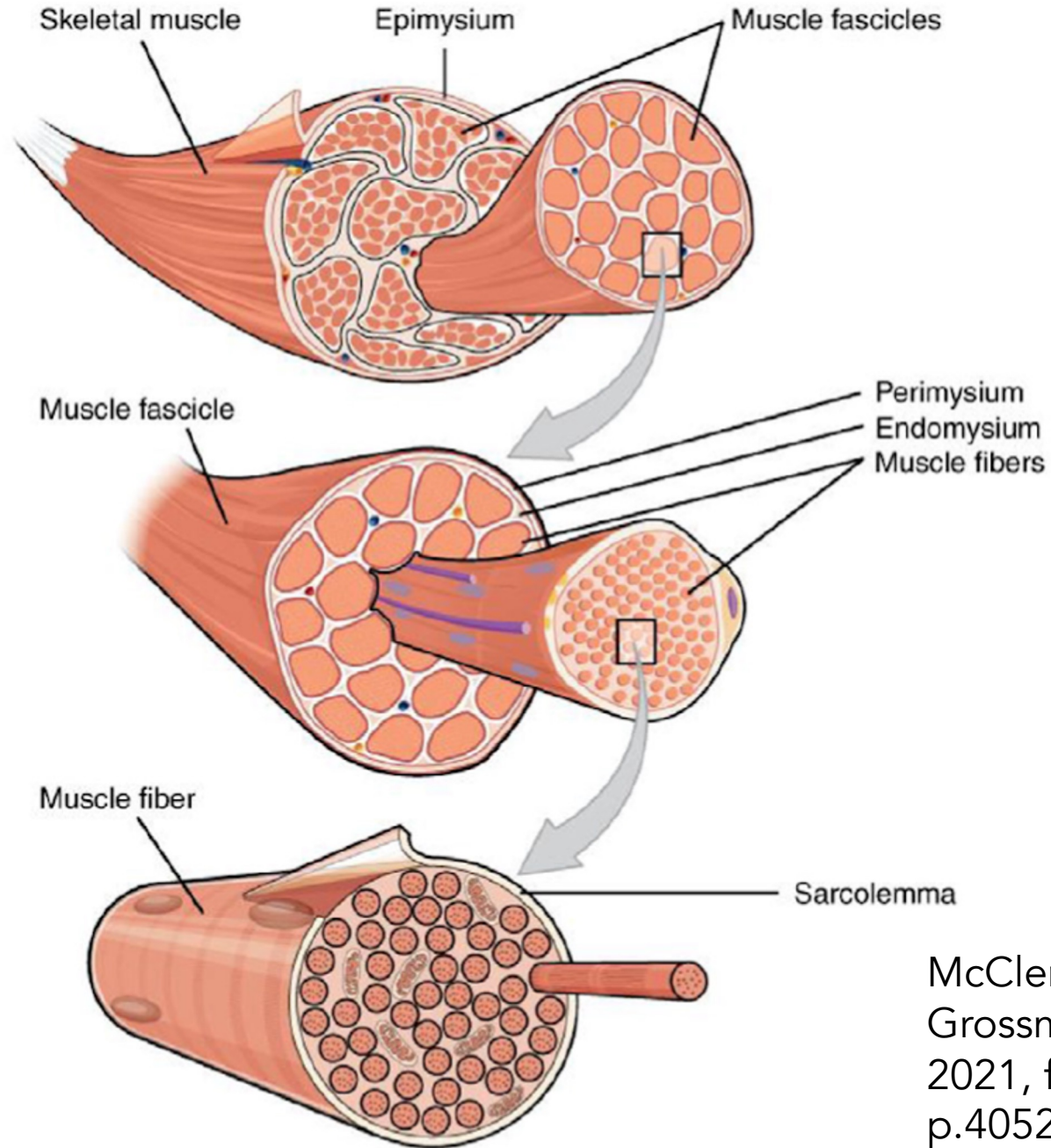
'Meat' performed in/as food science

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- **Structure** - fibrous
- **Composition** – proteins, lipids, water,
- **Functionality** – cooking loss and textural changes
- **Mouthfeel** – melting, crystallization
- **Flavour** – umami taste
- **Odour** – aroma when cooked
- **Colour** – red turns brown when heated

(He et al 2020; McClements & Grossmann 2021)

Structure



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McClements &
Grossmann
2021, figure 4,
p.4052

Structure

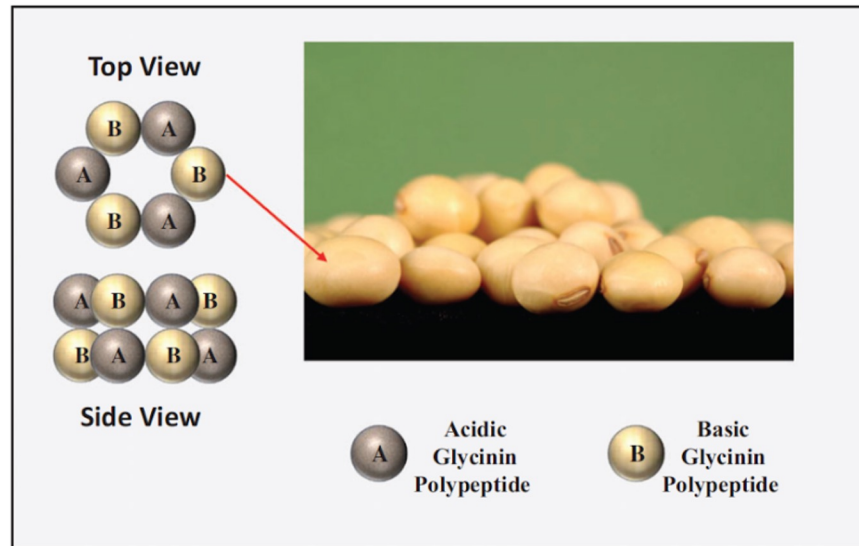


FIGURE 2 The globular proteins in plant materials are often present as multimers that are physically and/or covalently linked together. The functionality of these proteins depends on their denaturation and aggregation state after isolation. Here, the proposed structure of the native form of the 11S-form glycinin molecule is shown, which consists of (a) acidic and (b) basic polypeptide chains. Image of soybeans from CSIRO (Creative Commons 3.0)

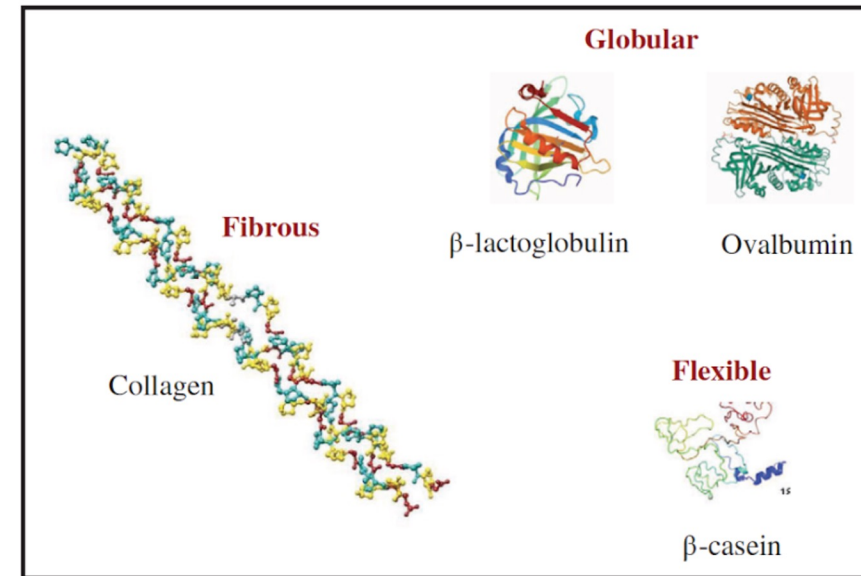
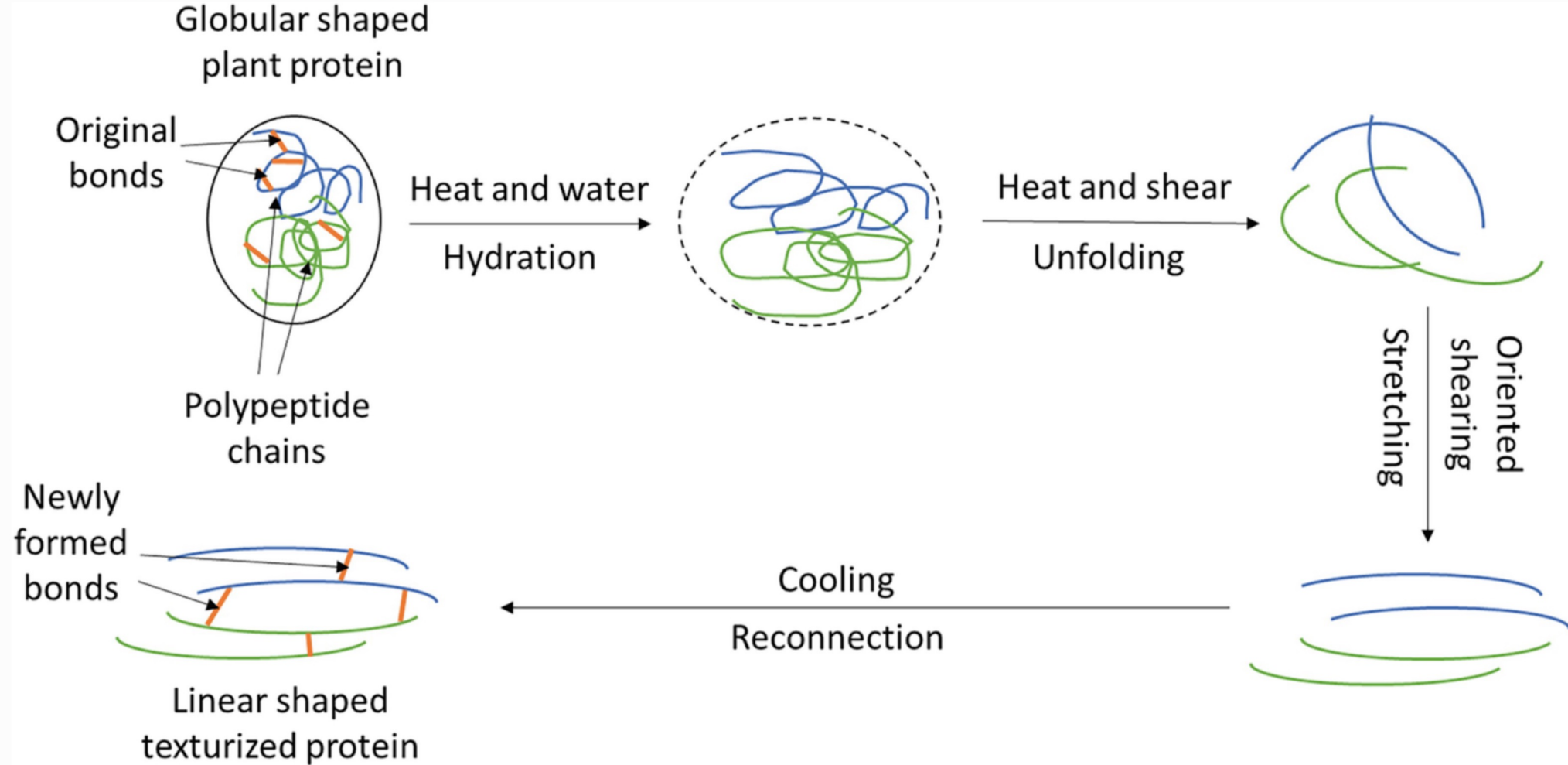


FIGURE 3 The proteins in animal foods come in a variety of different structures, which impacts their functionality. Finding plant-based ingredients that mimic these structures and functionalities is challenging. Protein structures from the Protein Database (NIH): Collagen (1CGD); β-lactoglobulin (3NPO), ovalbumin (1OVA). The structure for β-casein is from: Zhou et al. (2019)

From: [Plant-Based Protein Meat Analogues](#)



Conceptual representation of plant protein texturization

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Achieving 'meat' realness through food science and biotech

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Table 2

Structures obtained after heating and simultaneous heating and shearing of blends made from SPI, WG and the SPI-WG blend.

	30% SPI	30% WG	15% SPI + 15% WG
Not sheared	Brittle, porous gel 	Short, thin fibers (multidirectional) 	Gel with short, thin fibers (multidirectional) 
Sheared	Firm dense gel	Long, thick fibers in a shear direction 	Gel with long, thick and thin fibers in a shear direction 

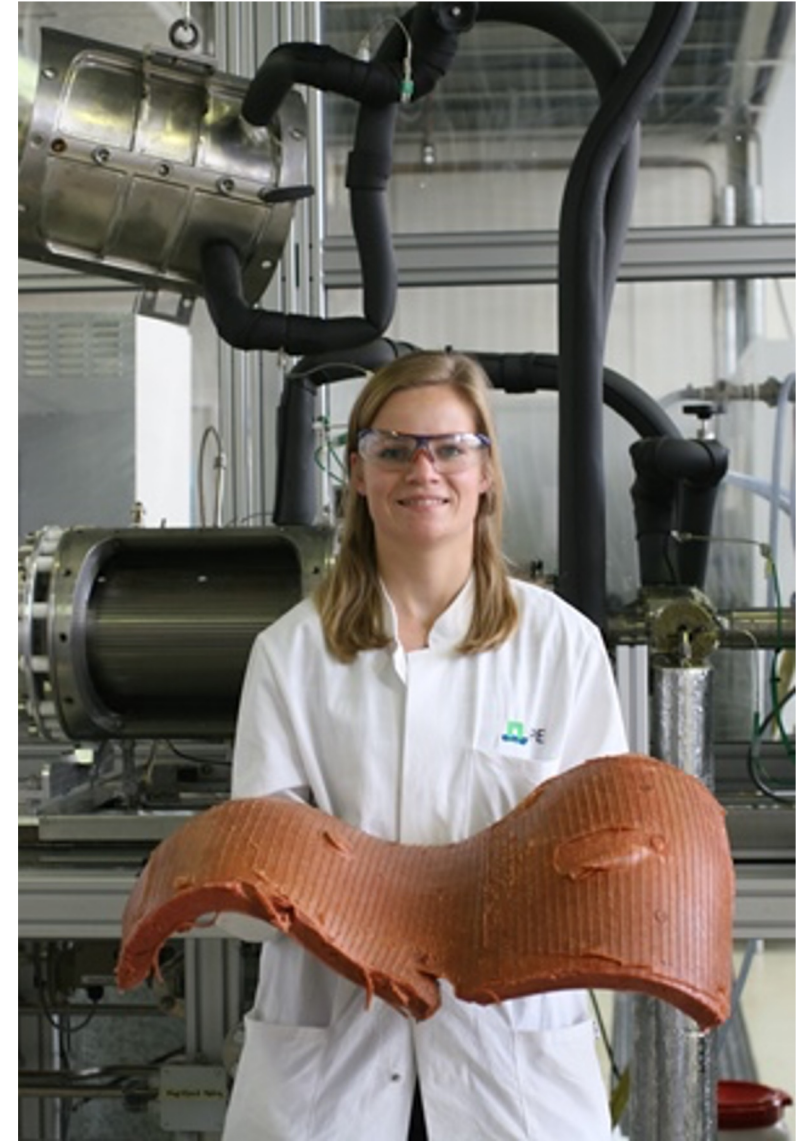
E.g. Shear cell technology (since 2000s)

Soy-Protein Isolate (SPI) and Wheat Gluten (WG) mixes in Grabowska et al. (2014, p. 745)

Realing meat – achieving steak realness



Couette cell technology – Birgitte Dekkers, WUR; Co-founder of Rival Foods



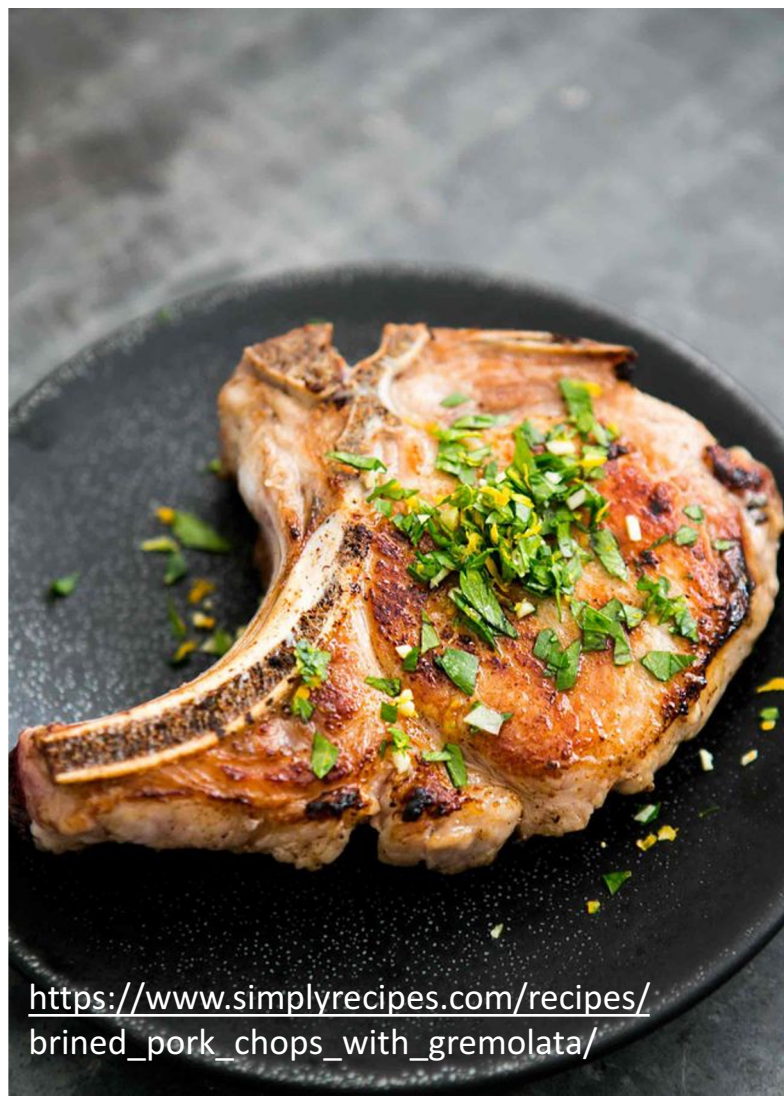
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From Ivar



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to pork chop



[https://www.simplyrecipes.com/recipes/
brined_pork_chops_with_gremolata/](https://www.simplyrecipes.com/recipes/brined_pork_chops_with_gremolata/)

From animal to edible

Bjørkdahi & Syse (2018, 217)

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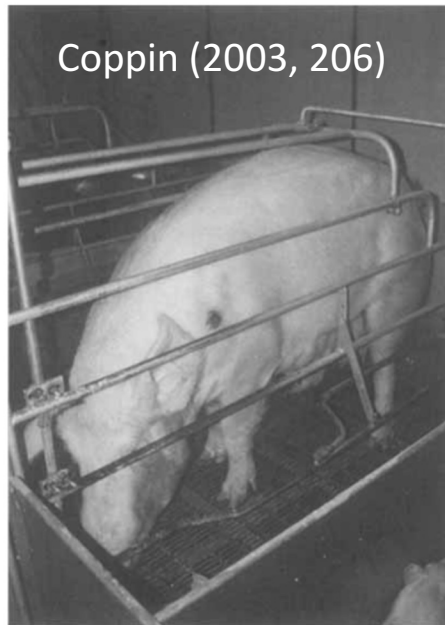


FIGURE 1. SOW IN FARROWING CRATE

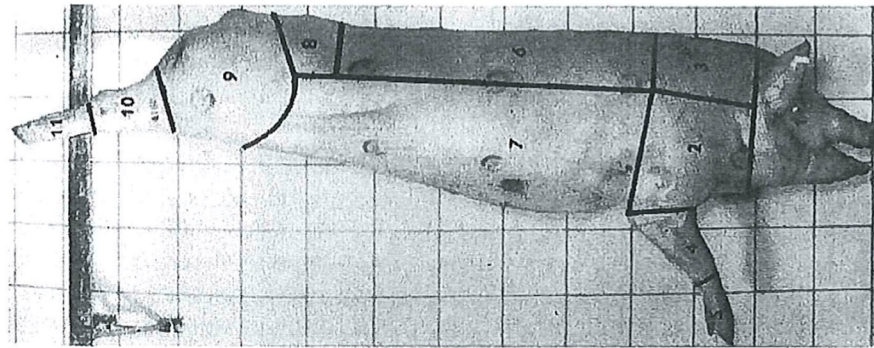


Figure 11.1 In the 1955 edition of *Gyldendals*, an explicit photograph of a pig carcass is delineated to show the various cuts of meat

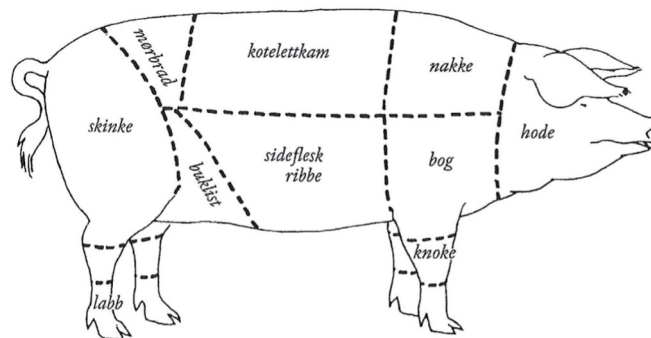
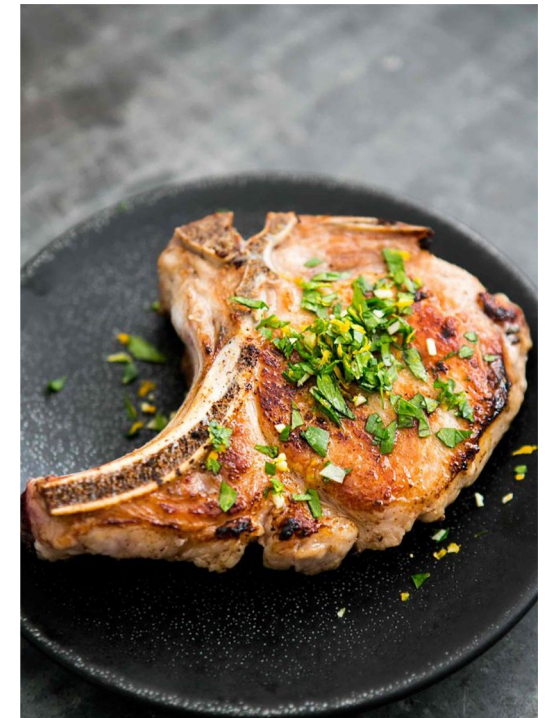


Figure 11.3 In the 2002 edition, the explicit representation of a carcass is replaced by a sketched silhouette of a pig



Nothing necessarily porkchoppy here

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How is realing different?

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- Realism
- Alt-realism
 - Perspectivism
 - Operational coherentism
 - Constructive Empiricism
 - Conventionalism
 -
- Founding/kinding



Conclusion

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REALITY is performatively constituted
in part through science
achieving and maintaining realness

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Thank you!

Comments – QUESTIONS

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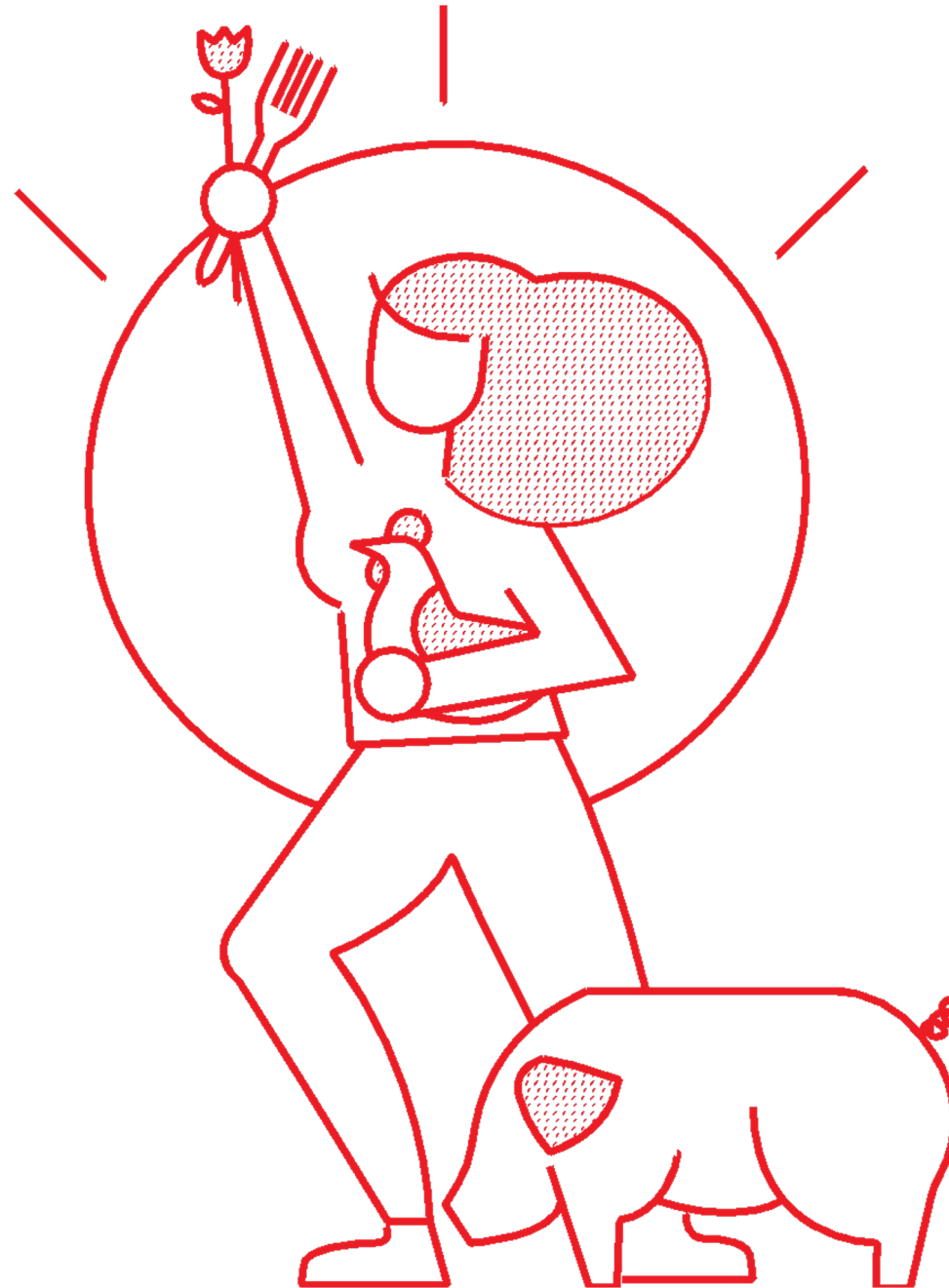
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