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RABBIT MEAT: A VALUABLE SOURCE OF NUTRITION OR TOO-CUTE-TO-EAT?

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ABSTRACT

Rabbit meat is a component of traditional diets, often incorporated into iconic dishes of regional cuisine. Its consumption is tracing back to the ancient civilizations of the Mediterranean and beyond, well into the Paleolithic era. Even though it has been representing considerable nutritional and cultural value since millennia, a decline in consumption is now noticeable. Specific categorial dynamics are at play, which are related to the various superimposed roles of rabbits as livestock, game, pests, laboratory animals, and pets. Their perceived cuteness in particular can lead to emotional responses that are hard to reconcile with the sensitivities of the post-domestic paradigm. Such effects compromise the acceptability of rabbit meat in contemporary Western societies that are typified by problematic human-animal interactions and a disconnect from the food chain. Especially the young and urban populations now seem to have difficulties facing the notion that the production of food requires the killing of animals. As a result, a traditional food source risks becoming irrelevant despite its high nutritional value and potential for sustainable meat production, due to reasons that are emotive rather than rational.

Key words: Nutrition, Meat, Welfare, Pet, Society, Food studies

INTRODUCTION

Rabbit meat has a long-standing culinary legacy, being the main element of various traditional dishes throughout the world, especially in the Mediterranean region (Petracci & Cavani, 2013). In Spain, for instance, one fifth of the population is said to eat rabbit at least once a week (Escriba-Pérez *et al.*, 2017). Classical rabbit-containing dishes such as escabeche, paella, and certain typical Christmas meals are important features of its national cuisine (Coxall, 2013). Popular dishes centered around rabbit meat can also be found in, *e.g.*, Italy, France, and Flanders (Peterson, 2002; Boyle, 2014; Dalle Zotte *et al.*, 2017; Petracci *et al.*, 2018).

Such status as traditional food, and all the story-telling that comes with it, is in principle highly valued by contemporary consumers (Geyzen *et al.*, 2012). Although the concept of *tradition* is a particularly fluid and diffuse one (Amilien & Hegnes, 2013), it offers some welcome reassurance in a globalizing food market that may seem threatening and bewildering to many due to hyperpaced innovation, impressive yet intimidating logistics, and aggressive marketing. Such value-from-tradition used to hold particularly true for meat and the various products and dishes derived thereof (Leroy *et al.*, 2013), since these foods have a lot of biocultural capital (Leroy & Praet, 2015) and are arguably among the ones with the longest record of processing and consumption (Geyzen *et al.*, 2019). Their distinct elements of geography, artisan skill, and history offer a lot of diversity and are cherished as part of a rich gastronomic heritage and represent regional pride and uniqueness (Leroy *et al.*, 2015). Such variety and appeal to identity has been aptly used by food writers, chefs, marketers, and policy makers to serve all sorts of cultural, economic, and political agendas and vested interests (Amilien & Hegnes, 2013).

During the last decades, however, the meaning of meat has been facing quite a bit of semiotic turbulence. From a nutritious dietary item at the center of the Western meal, mostly indicating health and vitality (Leroy & Praet, 2015), it is now shifting to one that causes anxiety due to its alleged links with chronic disease, food scares, animal welfare issues, and environmental deterioration (Leroy & Praet, 2017; Leroy *et al.*, 2018a). Although it is counterproductive to focus excessively on a plant/animal binary when talking about healthy and sustainable diets (good and bad practices can be found on either sides of the divide) and although the evidence in support of the dietary advice arguing for a restriction of meat consumption has been identified as too weak to allow for strong recommendations (Leroy *et al.*, 2018b; Johnston *et al.*, 2019; Leroy & Cofnas, 2019), we now seem to be facing an epistemic turn that looks ever more to animal foods among moralistic lines (Leroy, 2019).

The aim of the present study is to identify the historical mechanisms behind such transition away from the traditional value of animal source foods, with a specific focus on rabbit meat as a case study. Compared to other animals used in the human diet, rabbits hold an idiosyncratic position due to their overlapping roles as livestock, game, pest, and pets. The latter in particular - driven by aspects of perceived *cuteness* - is responsible for a changing position of rabbit meat within Western post-domestic foodscapes. Failing to account for such effects would undermine any chance on the successful incorporation of rabbit meat in the healthy and sustainable diets of the future (Petracci *et al.*, 2018). Because, notwithstanding the critical issue of societal perception, rabbit meat certainly has various assets with respect to its production methods, technological potential, and the attractive nutritional composition and sensory properties of the end-product.

HISTORICAL OVERVIEW OF RABBIT MEAT CONSUMPTION

Palaeolithic hunting: from occasional catch to economic resource

The first consumption of rabbit meat was situated in the Paleolithic era, although it must not have been among the most rewarding bounties for ‘Man the fat hunter’, in an ecosystem that was rich in zoomass and where protein poisoning or ‘rabbit starvation’ was to be avoided (Ben-Dor *et al.*, 2011; Smil, 2013; Petracci *et al.*, 2018). During the Upper Palaeolithic in the Iberian Peninsula, however, the high protein level and high bioavailability of micronutrients of rabbit meat became an important supplement to the ancestral diet (Hockett & Bicho, 2000; Bicho *et al.*, 2006; Blasco *et al.*, 2013; Martínez-Polanco *et al.*, 2017). Next to their nutritional contribution, rabbits also served an economic purpose early on (because of their skin and fur) and may have played some other important social roles in hunter-gatherer culture (*e.g.*, as totem animal), although little is known about the latter (Figure 1).

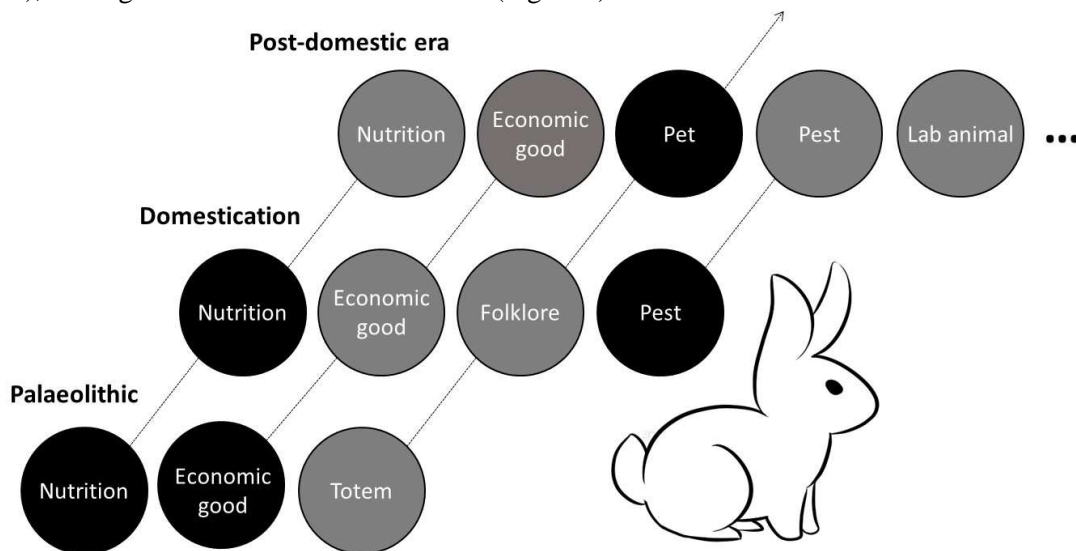


Figure 1: Superimposed societal roles of rabbits throughout the ages (breakdown in three epistemes: the Palaeolithic, the switch to domestication, and the current post-domestic model), whereby the black circles indicate what is likely to have been the perceived predominant function(s) for a given era.

Domestication: a late addition to the livestock inventory

It is not entirely clear, due to the patchiness of the archeological findings, when and to what degree rabbits and hares started to be included as livestock in the settling communities of the Neolithic (Petracci *et al.*, 2018). What is known, however, is that domestication was considerably later than for other animals. A reason for this may have been the relatively low energetic density of rabbit meat (Smil, 2013). Also, there has always been overlap between their breeding and hunting (Carneiro *et al.*, 2014), making true domestication a less stringent requirement.

It is only in the Mediterranean region during the Iron Age that signs of systematic use of rabbits and hares start to become more visible (Lebas *et al.*, 1997, Dalle Zotte, 2014; Petracci *et al.*, 2018), after which Roman and Gallic populations started to hunt rabbits in coneygarths and farm them to some degree (Dalle Zotte, 2014; Irving-Pease *et al.*, 2018). More advanced types of cuniculture were developed in later stages, especially by Christian monks (Clutton-Brock, 1999; Kiple, 2007; Verga *et al.*, 2009). Originally, at least during Roman times, rabbits and hares were mostly reserved to the aristocracy with variable levels of consumption by the lower classes (Alcock, 2006). At some point in time, however, cuniculture for meat production was adopted by Mediterranean rural families and has been maintained as common practice for self-sustenance, although it is recently on the decline (Petracci & Cavani, 2013; Trocino *et al.*, 2019).

As they spread beyond the Mediterranean, rabbits were bred worldwide for meat and fur or kept for hunting (*e.g.*, in England; Licciardelli & Cortese, 1962; Alcock, 2006; Martin, 2010; Beglane, 2015). In some cases, they developed into a destructive pest (in particular as a result of post-Colombian oceanic travels; Camus *et al.*, 2008). The husbandry practice of rabbit-keeping in urbanizing societies also had the benefit of requiring very little farmland in times where land became a limited resource. Moreover, the practice of cuniculture can be easily integrated in city life, as has been documented for the London suburbs during Modernity (Thick, 2016). By then, the domestication paradigm was coming to an end and human societies, especially in the expanding cities of the West with their increasing purchase power and changing demands, were starting to develop new technologies and foodways, as well as a new worldview and conception of what diets should look like. Such epistemic change had a profound influence on the type of human-animal interactions that were abolished, developed, or maintained (Leroy & Praet, 2017).

RABBITS IN THE POST-DOMESTIC ERA

Trapped in a constellation of conflicting categories

As from the 19th century, rabbits started to maintain a rather complex and ambiguous position within the anthrozoological record (DeMello, 2012), which has been described as that of 'edible weeds' (Jones, 2008). Such peculiar identity, combining 'utility' and 'damage' as well as slippery notions of 'nature' and 'wilderness', can be typified as that of a pharmakon (φάρμακον). A pharmakon can be defined as something that is both useful and harmful, in a superimposed manner. Although this concept seems to be generally valid for livestock (Leroy, 2019), rabbits have managed to become a particularly striking example of such superimposition (Petracci *et al.*, 2018). They now accumulate a variety of *appreciated* as well as *despised* societal roles, including that of livestock for the production of meat and fur, of game for hunters, of laboratory animals for scientific research, of vermin in rural areas, of fertility symbol in folklore, of economic resource in a market logic, of pets in urban bourgeois settings, and as a means for zoo-therapy (Wilkinson & Fitzgerald, 1997; Camus *et al.*, 2008; Martin, 2010; Samfira & Petroman, 2011; González-Redondo & Contreras-Chacón, 2012).

These superimposed categories provide a dynamic constellation of which the meaning largely depends on the context and the interpreter. All this does not relate to the rabbit *as such*, or the specificities of its ecological place, but rather to human interpretation and - therefore - the position of the animal in societal practices and their accompanying narratives (Scully, 2002). As an example, rabbits were seen by the British as an agriculture nuisance during the late 19th century but became highly appreciated afterwards as a valuable food source during the Second World War (WWII). Eventually, they were

popularized in British popular culture (cf. the anthropomorphized rabbits of the novel *Watership Down*; Adams, 1972) and obtained a status that is now principally one of companion animal (Martin, 2010).

Contingency on societal trends and discourse implies that the specific roles of rabbits (or the emphasis on some of these roles) may fluctuate considerably over time, depending on both smooth and abrupt changes in worldviews. If shifts are epistemic (cf. Figure 1), as can indeed be the case for human-animal interactions, truly fundamental reconfigurations of meaning can be obtained (Bulliet, 2005; Joy, 2010; Leroy & Praet, 2017; Leroy 2019). Since this also results in a change of attitudes and practices - and given the fact that rabbit meat consumption is declining in many countries (Kallas & Gil, 2012; Trocino *et al.*, 2019) - it is paramount that the dynamics of such transitions are well understood. Although the explanation for the declining levels of consumption is partially due to purely practical reasons, such as price competitiveness in comparison with poultry and the limited suitability for processing due to bone fragility and poor juiciness (Petracci & Cavani, 2013; Cullere & Dalle Zotte, 2018), a large part of the problem can be ascribed to factors that are cultural and belief-driven (Petracci *et al.*, 2018).

Heterogeneity of perception within the post-domestic model

It would obviously be erroneous to assume that contemporary societies behave as monolithic entities, whereby all of the individuals within a population simultaneously maintain or transform the same beliefs and attitudes in response to a given element (*in casu*, the societal place of rabbits). Instead, there seems to be considerable heterogeneity within the post-domestic paradigm. Variability is contingent on such factors as age and gender, ethnicity and cultural background, socio-economic status, and degree of urbanization (Hoffman *et al.*, 2005; González-Redondo & Contreras-Chacón, 2012).

Cultural variability may for instance be related to a lack of tradition with respect to the consumption of rabbit meat (*e.g.*, North America; Lukefahr *et al.*, 2004; Eastern European countries; Szendrő, 2016; Petrescu & Petrescu-Mag, 2018; Africa; Mailu *et al.*, 2017; Maigida *et al.*, 2018) or to religious or other societal restrictions (*e.g.*, Turkey; Wilson & Yilmaz, 2013). In contrast, the Mediterranean with its long-standing practice of cuniculture still has a relatively pronounced fondness for rabbit meat (Escriba-Pérez *et al.*, 2017; Trocino *et al.*, 2019). But also *within* a given cultural context, a considerable degree of stratification can be seen, for instance according to age. Even in Spain, with its traditional keenness on rabbit meat, a decline of consumption is noticeable in the younger segments (González-Redondo & Contreras-Chacón, 2012; Escribá-Pérez *et al.*, 2019). Spanish consumers over 55 years old, on the other hand, provide the societal group that is still regularly consuming rabbit meat, often at a rate of once a week or more (Escriba-Pérez *et al.*, 2017). Such persistence is also specifically the case within the group of middle-aged women who value cooking and food quality (Buitrago-Vera *et al.*, 2016). Additionally, rabbit meat consumption in Spain seems to be more pronounced among the lower socio-economic classes and among those with lower education levels (Escriba-Pérez *et al.*, 2017). In contrast, rabbit meat is becoming increasingly unpopular among young city dwellers, especially among the female ones (González-Redondo *et al.*, 2010), which is suggestive of effects that are transcending the traditional cultural frameworks and seem related to recent lifestyle dynamics that are situated within the urban classes.

Evolving human-animal interactions

Altering foodways lay at the basis of structural changes in human-animal interactions, including the way rabbit meat is provided to the general population. Prior to the industrial revolution, farmers were taking their rabbits directly to the market or selling them to butchers. Since the late 19th century and during the early 20th century, however, animal production - and animal slaughter in particular - have been increasingly removed from the public sphere (Bulliet, 2005; Leroy & Degreef, 2015; Leroy & Praet, 2017). In Spain, for instance, most of the rabbit-producing units are now situated in rural areas (Baviera-Puig *et al.*, 2017).

In parallel, and possibly as a result of this transformation disconnecting consumers from the notion that slaughter is required to generate food, direct confrontation with meat's animality has become problematic to urban populations, particularly so in Anglo-Saxon countries (Leroy & Degreef, 2015). It is also in the latter countries, particularly England and the USA, that animal welfarism, anti-vivisection movements, and vegetarian societies first developed. As an example, British 19th-century animal welfare activists already described rabbit trapping as an inhumane activity (Martin, 2010). It may not be a coincidence that these are also the regions where the removal of scenes of animal production, copulation, and killing from daily life has been the most drastic, particularly in the post-WWII generations (Bulliet, 2005). In such a situation of disconnect, it becomes particularly difficult to face the idea of animal killing for food. This is possibly the case because of empathy and anthropomorphization, whilst the slaughtering process and the resulting animal carcasses also remind us of our own mortality and, thereby, generate feelings of disgust and guilt (Leroy & Praet, 2017).

Status confrontation: when different roles collide

Rabbits hold a special position within the above-mentioned problem of animal killing for food, for a variety of reasons. One of the major elements that are nowadays differentiating rabbits from most other livestock animals is their explicit *cuteness* and their popular status as household pets (Wilkinson & Fitzgerald, 1997; Hoffman *et al.*, 2005; Petracci *et al.*, 2018; Petrescu & Petrescu-Mag, 2018). This is a rather recent phenomenon, at least from a historical perspective, which dates to the Victorian era and was propagated thereafter in popular culture (Anonymous, 2019). As cultural constructs derived from the urban middle classes, pets are known to modulate human attitudes towards the use of animals for food production (Serpell, 2004; Leroy & Praet, 2017), so that the eating of rabbits may even become a challenging issue within cunivore countries (González-Redondo & Contreras-Chacón, 2012). Studies conducted in different countries showed that disgust and ethical concerns were stronger in women compared to men (Rousset *et al.*, 2005; González-Redondo & Contreras-Chacón, 2012; Szendrő, 2016; Petrescu & Petrescu-Mag, 2018). A combined status of meat animal and pet may generate cognitive tension and dissonance upon exposure to the post-domestic consumer.

The fact that rabbits are mostly marketed as entire carcasses, usually without removing the head, tends to make the confrontation too explicit for urban sensitivities (Leroy & Praet, 2017). It is indeed less common and - because of technological constraints - more difficult to hide references to the animal origins of rabbit meat through cutting, packaging, processing, and even mincing or breading, than it is for pork, beef, and poultry (Petracci *et al.*, 2018). In the early 1970s, however, part of the production ended up as pre-packed and cut-up carcasses, for instance hind legs and loin, to meet the demand from urban areas (Petracci & Cavani, 2013; Dalle Zotte, 2014). More recently, sausages and hamburgers of rabbit meat are being commercialized to attract young urban populations (Escribá-Pérez *et al.*, 2019), which is however hampered by their irregular availability at the points of sale (Fernández, 2019).

Some examples of the confrontation between the post-domestic view on animals with their actual use as food have been mentioned previously by Petracci *et al.* (2018). These examples included the practice of backyard slaughter of rabbits in the United States, which has been triggering strong emotional opposition (Blecha & Davis, 2014). A famous English novelist created public outrage, not the least among her fans, when she displayed photographs on social media of how she personally butchered and cooked a rabbit, thereby feeding its entrails to her cat (Gold, 2014). Also, a German primary school made the news after including its pupils in an educational project, whereby a rabbit was slaughtered on the playground to generate awareness that meat involves animal killing (Lüpke-Narberhaus, 2011). The children were requested to 'thank' the animal for its meat, which is reminiscent of how hunter-gatherers generally approach the act of animal killing (Leroy & Praet, 2015). Such approach, which advocates for a higher personal involvement with the act of butchering from an early age, has also been mentioned by Shepard (1998) in his influential work '*Coming home to the Pleistocene*'. The fact that post-domestic families excessively protect their children against scenes that are 'revolting, corrupting, or revelatory' has also been addressed by Bulliet (2005), suggesting that this may be one of the main reasons for the emergence of post-domestic sensitivities whereby fantasy is placed above real-life carnality. It has been empirically shown that Spanish students that have been involved in either hunting or the raising of rabbits also reported higher consumption levels (González-Redondo *et al.*, 2010).

In general, the above-mentioned issues indicate a disconnect of the post-domestic subject from the everyday realities of the food chain. For instance, the fact that even the eating of plants (or vegetarianism for that matter) requires a considerable level of animal killing usually goes unchallenged. Although the actual numbers are hard to estimate with enough precision to allow for definite conclusions (Fisher & Lamey, 2018), crop agriculture requires the killing of a massive amounts of critters due to the use of harvesting machines, ploughing, as well as pest control and poisoning, among which not only many rodents but also an undefined amount of rabbits (Davis, 2003; Archer, 2011). Also, from a utilitarian perspective, it needs to be added that many more rabbits need to be killed per kg of meat than is the case for larger animals, such as pigs or cattle.

CONCLUSIONS

Rabbits are a valuable livestock resource, providing meat, fur, and wool. Given that the need for sustainable and healthy nutrition is one of the key global challenges, they have a lot of potential to offer and the expansion of their husbandry deserves further exploration, especially in deprived areas. Rabbit meat offers quality protein, is rich in a variety of micronutrients, and suffers less from religious constraints worldwide than pork or beef. Its small-scale production offers a lot of flexibility, also within urban scenarios, and - if done well - can be sustainably included in the food systems of the future. The main barrier seems to be its appeal to emotions because of the perceived cuteness of rabbits, especially in Western urban settings that have no or little gastronomic tradition of rabbit-based dishes. Although the anthropomorphization of animals is a general trend negatively affecting the role of livestock in the human diet, rabbits seem to be particularly vulnerable to this issue. This is regrettable in view of the important benefits they could offer.

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REFERENCES

- Adams R. 1972. *Watership Down*. Rex Collings, London, UK.
- Alcock J. P. 2006. *Food in the ancient world*. Greenwood Press, Westport, USA.
- Amilien V., Hegnes A. W. 2013. The dimensions of 'traditional food' in reflexive modernity: Norway as a case study. *J. Sci. Food Agr.*, 93: 3455–3463.
- Anonymous. 2019. Rabbit history. <http://www.justrabbits.com/rabbit-history.html>. Accessed November 2019.
- Archer M. 2011. Ordering the vegetarian meal? There's more animal blood on your hands. *The Conversation*, <http://theconversation.com/ordering-the-vegetarian-meal-theres-more-animal-blood-on-your-hands-4659>. Accessed November 2019.
- Baviera-Puig A, Buitrago-Vera J., Escriba-Pérez C., Montero-Vicente L. 2017. Rabbit meat sector value chain. *World Rabbit Sci.*, 25: 95–108.
- Beglane F. 2015. Anglo-Norman parks in Medieval Ireland. *Four Courts Press, Dublin, Ireland*.
- Ben-Dor M., Gopher A., Hershkovitz I., Barkai R. 2011. Man the fat hunter: the demise of *Homo erectus* and the emergence of a new hominin lineage in the Middle Pleistocene (ca. 400 kyr) Levant. *PLoS ONE*, 6: e28689.
- Bicho N., Haws J., Hockett B. 2006. Two sides of the same coin—rocks, bones and site function of Picareiro Cave, central Portugal. *J. Anthropol. Archaeol.*, 25: 485–499.
- Blasco R., Rosell J., Peris J.F., Arsuaga J.L., de Castro J.M.B., Carbonell E. 2013. Environmental availability, behavioural diversity and diet: a zooarchaeological approach from the TD10-1 sublevel of Gran Dolina (Sierra de Atapuerca, Burgos, Spain) and Bolomor Cave (Valencia, Spain). *Quat. Sci. Rev.*, 70: 124–144.
- Blecha J., Davis A. 2014. Distance, proximity, and freedom: identifying conflicting priorities regarding urban backyard livestock slaughter. *Geoforum*, 57: 67–77.

- Boyle R. 2014. Bite: rabbit with prunes. *Flanders Today*, <http://www.flanderstoday.eu/living/bite-rabbit-prunes>. Accessed November 2019.
- Buitrago-Vera J., Escriba-Pérez C., Baviera-Puig A., Montero-Vicente L. 2016. Consumer segmentation based on food-related lifestyles and analysis of rabbit meat consumption. *World Rabbit Sci.*, 24: 169–182.
- Bulliet R.W. 2005. Hunters, herders, and hamburgers. The past and future of human-animal relationships. *Columbia University Press, New York, USA*.
- Camus P., Castro S., Jaksic F. 2008. European rabbits in Chile: history of a biological invasion. *Hist. Santiago*, 41: 305–339.
- Carneiro M., Rubin C.-J., Di Palma F., Albert F.W., Alföldi J., Martínez Barrio A., et al. 2014. Rabbit genome analysis reveals a polygenic basis for phenotypic change during domestication. *Science*, 345: 1074–1079.
- Clutton-Brock J.A. 1999. Natural history of domesticated mammals. *Cambridge University Press, Cambridge, UK*.
- Coxall M. 2013. Traditional Christmas recipes of Spain. *Cornelio Books, Andalusia, Spain*.
- Cullere M., Dalle Zotte A. 2018. Rabbit meat production and consumption: State of knowledge and future perspectives. *Meat Sci.*, 143: 137–146.
- Dalle Zotte A. 2014. Rabbit farming for meat purposes. *Anim. Front.*, 4: 62–67.
- Dalle Zotte A., Brugiapaglia A., Cullere M. 2017. What is meat in Italy? *Anim. Front.*, 7: 63–70.
- Davis S.L. 2003. The least harm principle may require that humans consume a diet containing large herbivores. *J. Agr. Environ. Ethic.*, 16: 387–394
- DeMello M. 2012. Animals and society. An introduction to human–animal studies. *Columbia University Press, New York, USA*.
- Escriba-Pérez C., Baviera-Puig A., Buitrago-Vera J., Montero-Vicente L. 2017. Consumer profile analysis for different types of meat in Spain. *Meat Sci.*, 129: 120–126.
- Escribá-Pérez C., Baviera-Puig A., Montero-Vicente L., Buitrago-Vera J. 2019. Children's consumption of rabbit meat. *World Rabbit Sci.*, 27: 113–122.
- Fernández M. 2019. Nuevos cortes y elaborados. ¿Cómo hacerlos más visibles? *Boletín de Cunicultura*, 194: 6–8.
- Fischer B., Lamey A. 2018. Field deaths in plant agriculture. *J. Agr. Environ. Ethic.*, 31: 409–428.
- Geyzen A., Scholliers P., Leroy F. 2012. Innovative traditions in swiftly transforming foodscapes: an exploratory essay. *Trends Food Sci. Technol.*, 25: 47–52.
- Geyzen A., Ryckbosch W., Scholliers P., Teughels N., Leroy F. 2019. Food innovation and tradition: interplay and dynamics. In: *Galanakis C.M. (ed.). Innovations in Traditional Foods*. Woodhead Publishing, Duxford, UK, 27–51.
- Gold T. 2014. Jeanette Winterson and the rabbit of truth. *The Guardian*. <http://www.theguardian.com/commentisfree/2014/jun/19/jeanette-winterson-rabbit-truth-beatrix-potter-tarantino>. Accessed November 2019.
- González-Redondo P., Mena Y., Fernández-Cabanás V.M. 2010. Factors affecting rabbit meat consumption among Spanish university students. *Ecol. Food Nutr.*, 49: 298–315.
- González-Redondo P., Contreras-Chacón G.M. 2012. Perceptions among university students in Seville (Spain) of the rabbit as livestock and as companion animal. *World Rabbit Sci.*, 20: 155–162.
- Hockett B.S., Bicho N.F. 2000. The rabbits of Picareiro Cave: small mammal hunting during the Late Upper Palaeolithic in the Portuguese Estremadura. *J. Archaeol. Sci.*, 27: 515–523.
- Hoffman L.C., Vosloo M.C., Nkhabulane P., Schutte D.W. 2005. Associations with rabbits and rabbit meat of three different ethnic groups in Stellenbosch, South Africa. *J. Consum. Sci.*, 33: 63–72.
- Irving-Pease E.K., Frantz L.A., Sykes N., Callou C., Larson G. 2018. Rabbits and the specious origins of domestication. *Trends Ecol. Evol.*, 33: 149–152.
- Johnston B. C., Zeraatkar D., Han M. A., Vernooij R. W. M., Valli C., El Dib R., et al. 2019. Unprocessed red meat and processed meat consumption: dietary guideline recommendations from the Nutritional Recommendations (NutriRECS) consortium. *Ann. Intern. Med.*, 171: 756–764.
- Jones M. 2008. Feast: why humans share food. *Oxford University Press, Oxford, UK*.
- Joy M. 2010. Why we love dogs, eat pigs, and wear cows: an introduction to carnism. *Conari Press, San Francisco, USA*.
- Kallas Z., Gil J. M. 2012. A dual response choice experiments (DRCE) design to assess rabbit meat preference in Catalonia. A heteroscedastic extreme-value model. *Brit. Food J.*, 114: 10–11.
- Kiple K.F. 2007. A movable feast: ten millennia of food globalization. *Cambridge University Press, Cambridge, UK*.
- Lebas F., Coudert P., de Rochambeau H., Thébault R.G. 1997. The rabbit – husbandry, health and production. *FAO, Rome, Italy*.
- Leroy F. 2019. Meat as a pharmakon: an exploration of the biosocial complexities of meat consumption. *Adv. Food Nutr. Res.*, 87: 409–446.
- Leroy F., Cofnas N. 2019. Should dietary guidelines recommend low red meat intake? *Crit. Rev. Food Sci. Nutr.*, published ahead of print (doi: 10.1080/10408398.2019.1657063).
- Leroy F., Degreef F. 2015. Convenient meat and meat products: Societal and technological issues. *Appetite*, 94: 40–46.
- Leroy F., Praet I. 2015. Meat traditions: the co-evolution of humans and meat. *Appetite*, 90: 200–211.
- Leroy F., Praet I. 2017. Animal killing and postdomestic meat production. *J. Agr. Environ. Ethic.*, 30: 67–86.

- Leroy F., Geyzen A., Janssens M., De Vuyst L., Scholliers P. 2013. Meat fermentation at the crossroads of innovation and tradition: a historical outlook. *Trends Food Sci. Technol.*, 31: 130–137.
- Leroy F., Scholliers P., Amilien V. 2015. Elements of innovation and tradition in meat fermentation: conflicts and synergies. *Int. J. Food Microbiol.* 212: 2–8.
- Leroy F., Brengman M., Ryckbosch W., Scholliers P. 2018a. Meat in the post-truth era: mass media discourses on health and disease in the attention economy. *Appetite*, 125: 345–355.
- Leroy F., Aymerich T., Champomier-Vergès M.-C., Cocolin L., De Vuyst L., Flores M., *et al.* 2018b. Fermented meats (and the symptomatic case of the Flemish food pyramid): are we heading towards the vilification of a valuable food group? *Int. J. Food Microbiol.*, 274: 67-70.
- Licciardelli G., Cortese M. 1962. Coniglicoltura pratica, 18th ed. *Hoepfi, Milano, Italy*.
- Lukefahr S.D., Cheeke P.R., McNitt J.I., Patton N.M. 2004. Limitations of intensive meat rabbit production in North America: a review. *Can. J. Anim. Sci.*, 84: 349–360.
- Lüpke-Narberhaus F. 2011. Slaughtered at school. German kids endure hare-raising experience. *Spiegel*. <http://www.spiegel.de/international/germany/slaughtered-at-school-german-kids-endure-hare-raising-experience-a-754363.html>. Accessed November 2019.
- Maigida R., Kabir M.S., Jibir M. 2018. Attitudes to rabbit meat and problems associated with it's consumption in Sokoto metropolis. *Int. J. Eng. Sci.*, 7: 8-12.
- Mailu S.K., Wanyoike M., Muhammad L., Mwanza R.N. 2017. The frequency and some correlates of rabbit meat consumption in Kenya. *Tanzania J. Agr. Sci.*, 16: 62-71.
- Martin M. 2010. The wild rabbit: plague, polices and pestilence in England and Wales, 1931–1955. *Agr. Hist. Rev.*, 58: 255–276.
- Martínez-Polanco M.F., Blasco R., Rosell J., Ibañez N., Vaquero, M. 2017. Rabbits as Food at the end of the Upper Palaeolithic at Molí del Salt (Catalonia, Spain). *Int. J. Osteoarchaeol.*, 27: 342–355.
- Peterson J. 2002. *Glorius French foods. John Wiley and Sons, New Jersey, USA*.
- Petracci M., Cavani C. 2013. Rabbit meat processing: historical perspective to future directions. *World Rabbit Sci.*, 21: 217–226.
- Petracci M., Soglia F., Leroy F. 2018. Rabbit meat in need of a hat-trick: from tradition to innovation (and back). *Meat Sci.*, 146: 93-100.
- Petrescu D.C., Petrescu-Mag R.M. 2018. Consumer behaviour related to rabbit meat as functional food. *World Rabbit Sci.*, 26: 321-333.
- Rousset S., Deiss V., Juillard E., Schlich P., Droit-Volet S. 2005. Emotions generated by meat and other food products in women. *Brit. J. Nutr.*, 94: 609-619.
- Samfira M., Petroman I. 2011. Therapeutic value of the human being-animal relationship. *Scientific Papers Animal Science and Biotechnologies*, 44:512-515.
- Scully M. 2002. *Dominion. The power of man, the suffering of animals, and the call to mercy. St. Martin's Griffin. New York, USA*.
- Serpell J.A. 2004. Factors influencing human attitudes to animals and their welfare. *Anim. Welfare*, 13: S145-S151.
- Shepard P. 1998. *Coming home to the Pleistocene. Island Press/Shearwater Books, Washington, DC, USA*.
- Smil V. 2013. *Should we eat meat? Solutions and consequences of modern carnivory. Wiley-Blackwell, West Sussex, UK*.
- Szendrő K. 2016. Consumer perceptions, concerns, and purchasing practices of rabbit meat in Hungary. *J. Food Prod. Market*, 22: 683-693.
- Thick M. 2016. Intensive rabbit production in London and nearby counties in the sixteenth, seventeenth, and eighteenth centuries: an alternative to alternative agriculture? *Agr. Hist. Rev.*, 61: 1–16.
- Trocino A., Cotozzolo E., Zomeño C., Petracci M., Xiccato G., Castellini C. 2019. Rabbit production and science: the world and Italian scenarios from 1998 to 2018. *Ital. J. Animal Sci.*, 18: 1361-1371.
- Verga M., Luzi F., Petracci M., Cavani, C. 2009. Welfare aspects in rabbit rearing and transport. *Ital. J. Anim. Sci.*, 8: 191–204.
- Wilkinson R., Fitzgerald G. 1997. Public perceptions of biological control of rabbits in New Zealand: some ethical and practical issues. *Agr. Hum. Values*, 14: 273-282.
- Wilson R.T., Yilmaz O. 2013. The domestic livestock resources of Turkey: notes on rabbits and a review of the literature. *Arch. Anim. Breed.*, 56: 18–27.



Rabbit meat

Valuable nutrition or too cute-to-eat?



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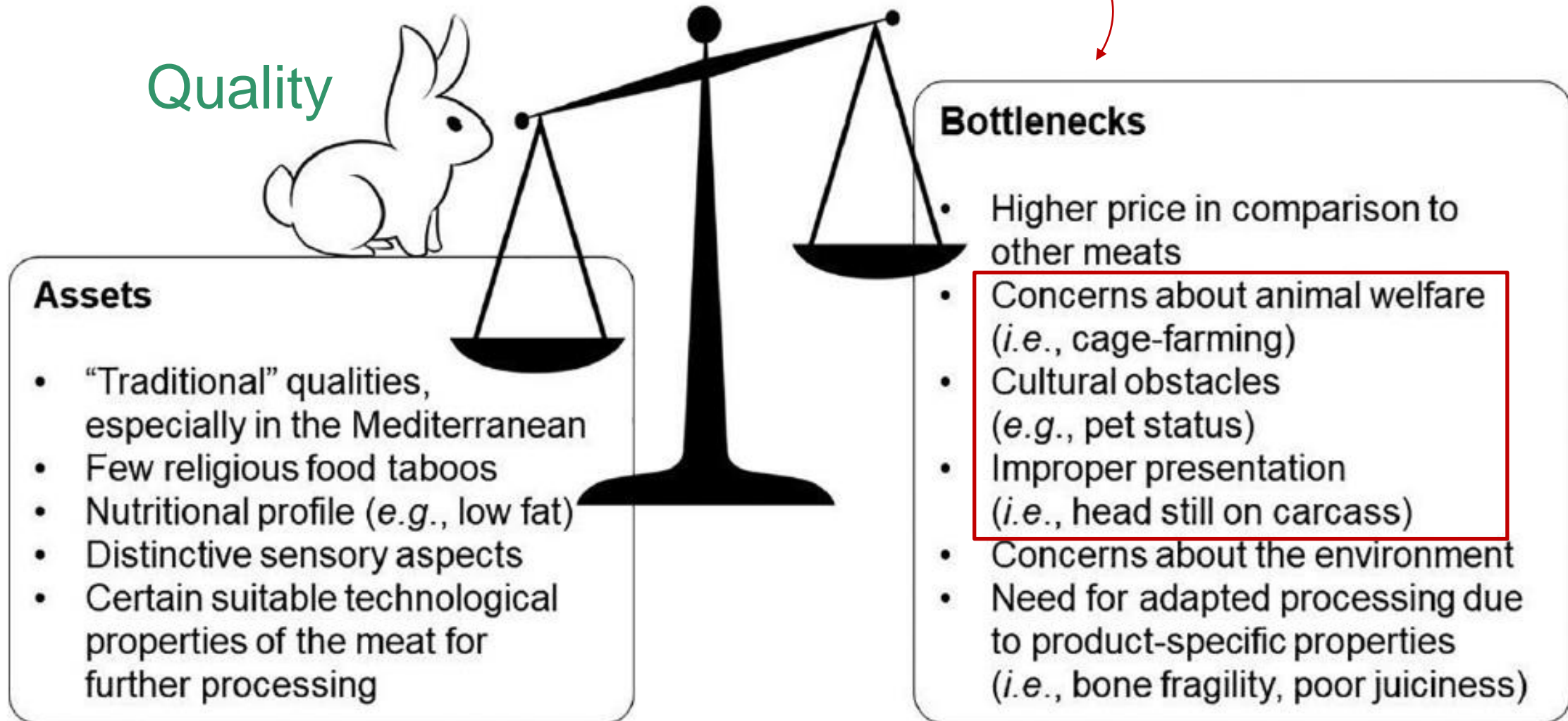


Research Group of
Industrial Microbiology
and Food Biotechnology



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Prof. dr. ir. Frédéric LEROY



2020 governmental agro-marketing campaign in Flanders: “rabbit week”



konijn

Licht, lekker en verrassend veelzijdig

Konijn op tafel? Dat biedt veel voordelen! Het vlees van een konijn is licht, smakelijk en een goede bron van essentiële voedingsstoffen. Bovendien is het lekker veelzijdig: probeer deze suggesties maar uit.

Konijn met tijm en mosterd • Thaise kokossoep met konijn
Trio van rilette van konijn • Gegrilde konijnfilets met salsa
Ratatouille van konijn • Gevulde konijnenrug met witloof en noten



DEZE KEER KONIJN

Producten van bij ons Recepten

Voedingsinfo Bereiden Kopen Kwaliteit

Week van het Konijn
MAAK IETS FIJN MET KONIJN

Gerealliseerd door VLAM
I.s.m. Pascale Naessens
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Nieuwsbrief Recht van bij de boer

V.L.I. SOFIE BOMBECK, VLAM - VLAAMS CENTRUM VOEDING

- Traditional dish in Belgium
- However: now only 0.2 kg/p/y
- Production in decline
- Promotion of recipes, use of food influencer, underlining culinary legacy and nutritional value

- Social media
- “Undercover” images
- Counter influencers

Konijn eten, dat knaagt: waarom we Knabbel niet meer in onze kookpot willen

FT | 28 januari 2020 | 18u15



© Maria de la Cruz

An Lemmens roept Vlaming op om geen konijn meer te eten: “Ook al proberen ze je te overtuigen van het tegenovergestelde”

MVO | 30 januari 2020 | 16u39

[View More on Instagram](#)



7,225 likes

anlemmensofficial

Met de Week van het Konijn wil het VLAM konijnenvlees extra onder de aandacht brengen, want de consumptie ervan boert achteruit in Vlaanderen. In samenwerking met supermarkten en slagers prijst men de troeven van konijn aan. Een reeks recepten moet inspiratie bieden. Wel ik wil jullie vriendelijk vragen om net GEEN KONIJN TE ETEN 🐰. Of je nu graag konijnen ziet of niet, de omstandigheden waarin konijnen geluwekt worden voor vlees zijn choquerend. In kooisystemen hebben de dieren elk amper 600cm² ter beschikking, ofwel één A4 pagina. De vroegtijdige sterfte erg groot, mede omdat konijnen zeer stressgevoelige dieren zijn. Zo duurt hun leven maximum tien weken - terwijl ze in normale omstandigheden tot tien jaar oud kunnen worden. @animalrights.be heeft zelfs nieuwe undercoverbeelden uitgebracht die het dierenleed bevestigen. In kwekerijen in ons land zitten in totaal zo'n 700.000 konijnen opgesloten. Zij zien geen daglicht, kunnen niet graven, leven boven hun eigen uitwerpselen en zijn blootgesteld aan constant lawaai van ventilatie, muziek en rammelende kooien. Dit voldoet op geen enkele manier aan de natuurlijke behoefte van deze dieren. De enige manier om dierenleed in de konijnensector een halt toe te roepen, is ervoor kiezen om geen konijnenvlees meer te eten 🐰❤️🐰 #teamkonijn @bitebackorg @bevegan.be @evavzw

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dS
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Meest recent Video Audio Binnenland Buitenland Opinie Economie Cultuur Sport

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‘Week van het konijn’ krijgt tegenwind

Gisteren om 17:14 door evg | Bron: BELGA

There seems to be a deeper, underlying problem (particularly in the urban West)

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Jeanette Winterson

This article is more than 6 years old

Jeanette Winterson sparks Twitter row by catching and cooking rabbit

Author posts pictures of animal as it is skinned and cooked in cider, with entrails fed to cat



Slaughtered at School

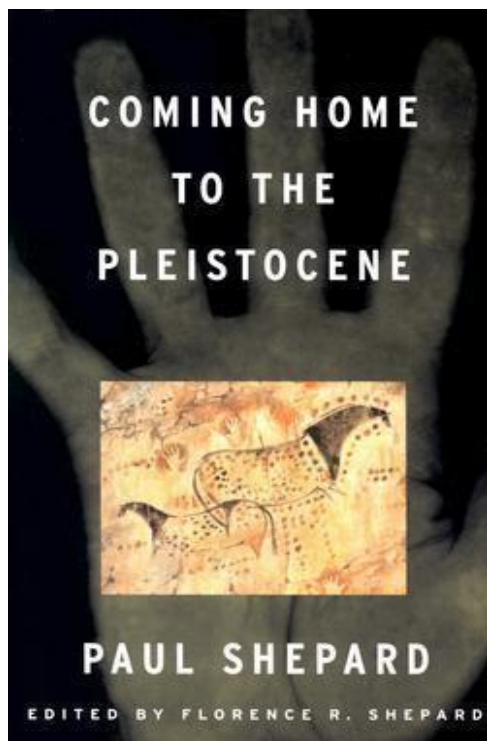
German Kids Endure Hare-Raising Experience

It was a lesson designed to help teach children the realities of life: Teachers at a school in Schleswig-Holstein arranged for a rabbit to be slaughtered in front of the kids to give them an insight into how Stone Age people managed to live without a freezer. Ultimately, though, not even a student petition couldn't save the bunny from its grisly fate.

Von [Frauke Lüpke-Narberhaus](#)

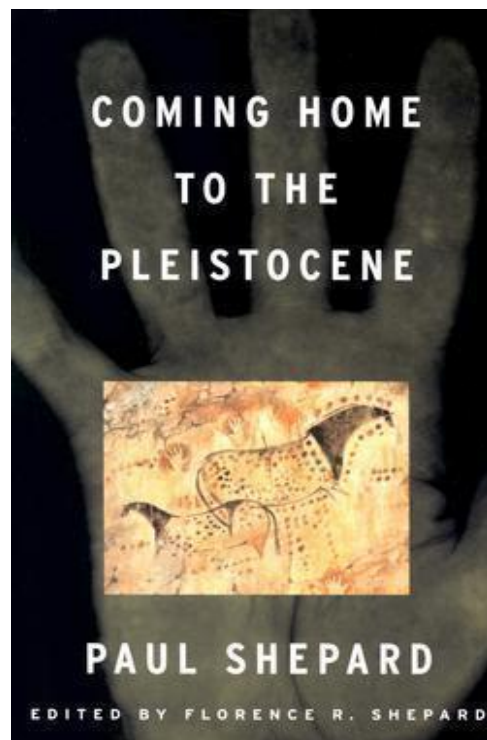
31.03.2011, 19.52 Uhr

Have we become divorced from our evolutionary past?



Ontogenic

1. Formal recognition of stages in the whole life cycle
 2. The progressive dynamics of bonding and separation
 3. Earth-crawling freedom by 18 months
 4. Richly textured play space
 5. No reading prior to “symbolic” age (about 12 years)
 6. All-age access to butchering scenes
 7. All-age access to birth, copulation, death scenes
 8. Few toys
 9. Early access via speech to rich species taxonomy
 10. Formal celebration of life-stage passages such as initiation
-
64. Attunement to the daily cycle and seasonality
 65. No radical intervention on fetal genetic malformations
 66. Immediate access to the wild, wilderness, solitude
 67. Nonlinear time and space—no history, progress, or destiny
 68. Sacramental (not sacrificial) trophism
 69. Formal recognition of a gifted subsistence
 70. Participation in hunting and gathering
 71. Freedom—to come and go, to choose skills, to marry or not, etc.
-

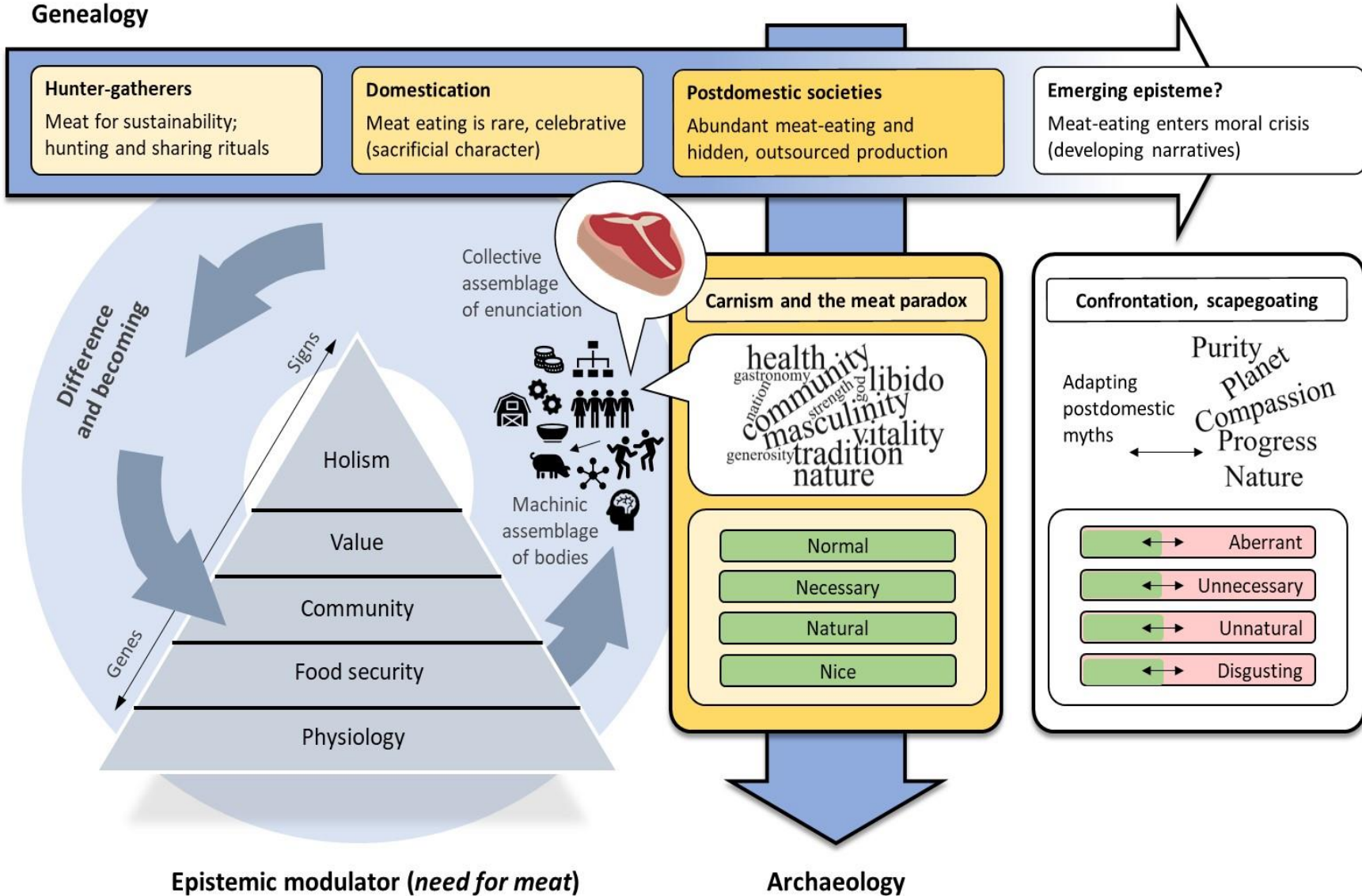


White European/Americans cannot become Hopis or Kalahari Bushmen or Magdalenian bison hunters, but elements in those cultures can be recovered or re-created because they fit the heritage and predilection of the human genome

Spanish students that have been involved in either hunting or the raising of rabbits also reported higher consumption levels (González-Redondo *et al.*, 2010).

How has this disconnect been created over a couple of generations only?

Meat as a pharmakon: an exploration of the biosocial complexities of meat consumption Leroy, F. (2019), *Advances in Food and Nutrition Research*



Why these transitions?

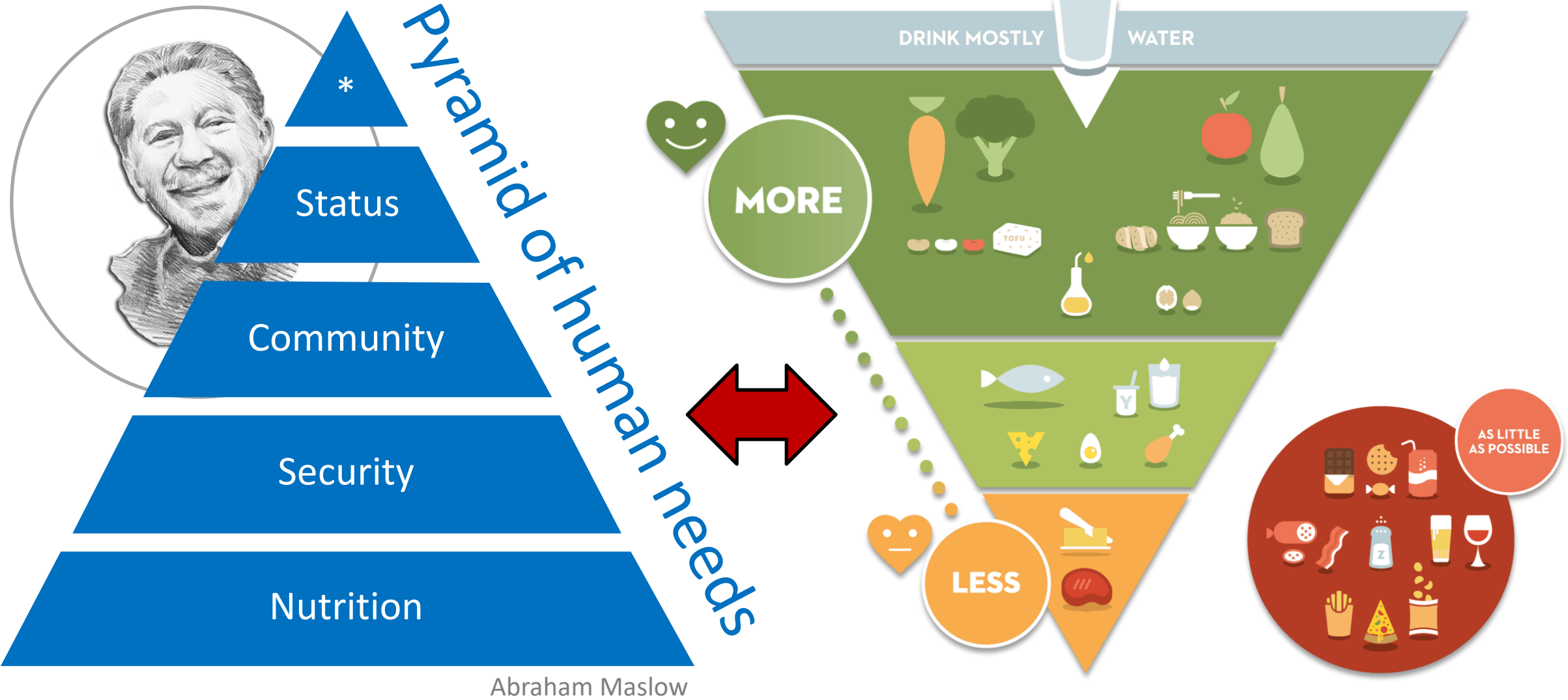


Michel Foucault (1926-1984)

Why have our needs and wants changed in such a fundamental manner?

Leroy F & Praet I (2015). Meat traditions. The co-evolution of humans and meat. *Appetite* 90, 200-211.

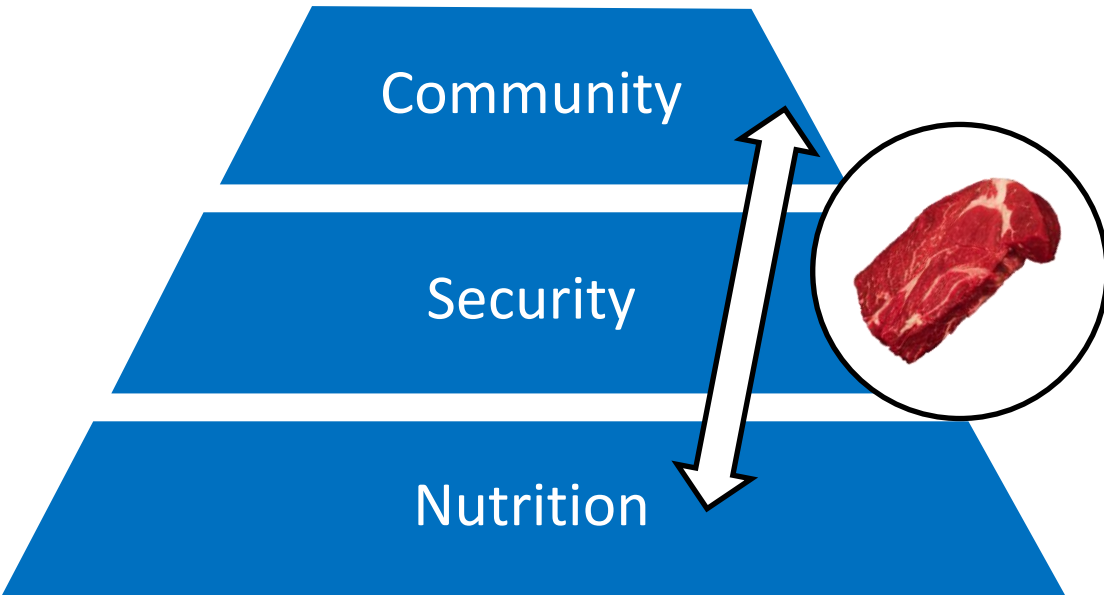
Leroy F (2018). Meat as a pharmakon: an exploration of the biosocial complexities of meat Consumption. *Adv Food Nutr Res.* 87, 409-446.



Paleolithic past: need for food security interlinks biology and society

Humans 'held mass banquets 12,000 years ago to build community spirit'

'community-building opportunities, which helped to relieve tensions and solidify social relationships'



Walter Burkert (1931-2015)

Ritual killing

Kill as a **focal point** around which a society is structured to satisfy its basic needs and balance tensions – also a transactional activity: giving back what was taken



René Girard (1923-2015)

Scapegoating

Fundamental mechanisms to deal with intraspecific aggression, **mimetic desire**

Pharmakon
Cure/Poison

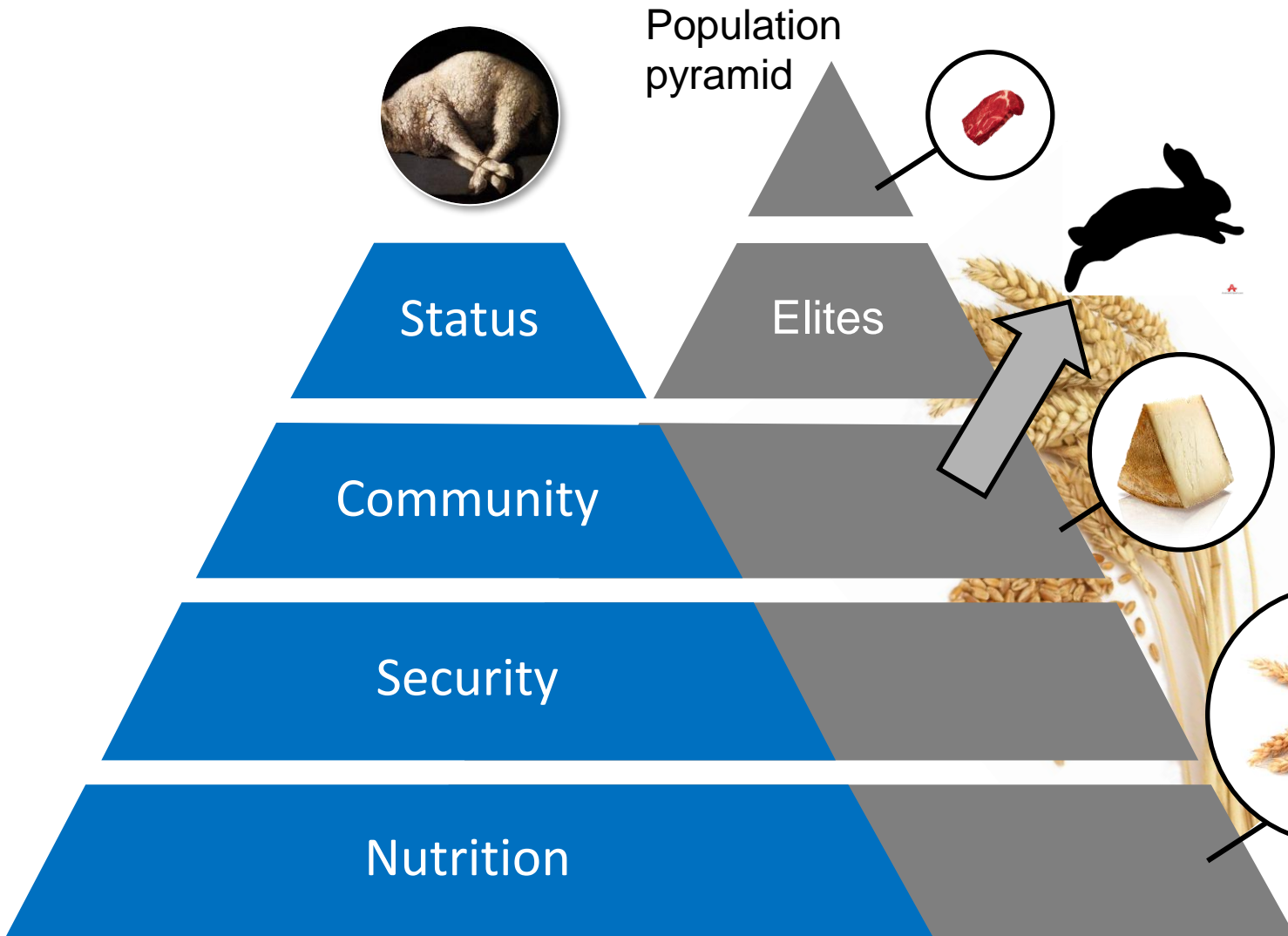


Pharmakos
Scapegoat

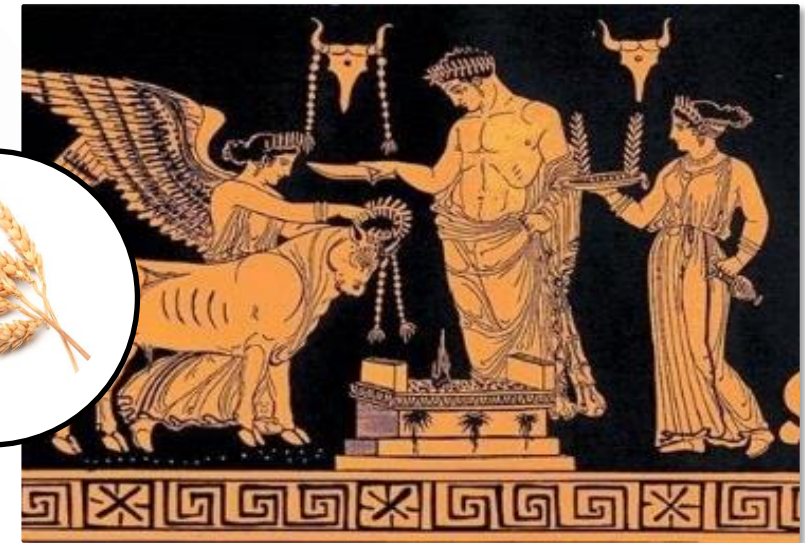
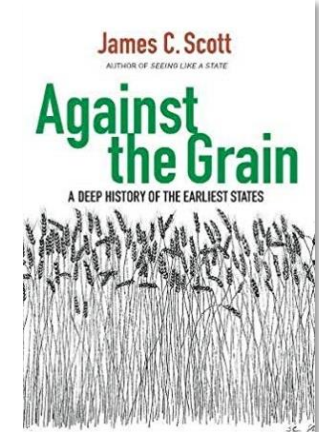
'Other' + defenceless

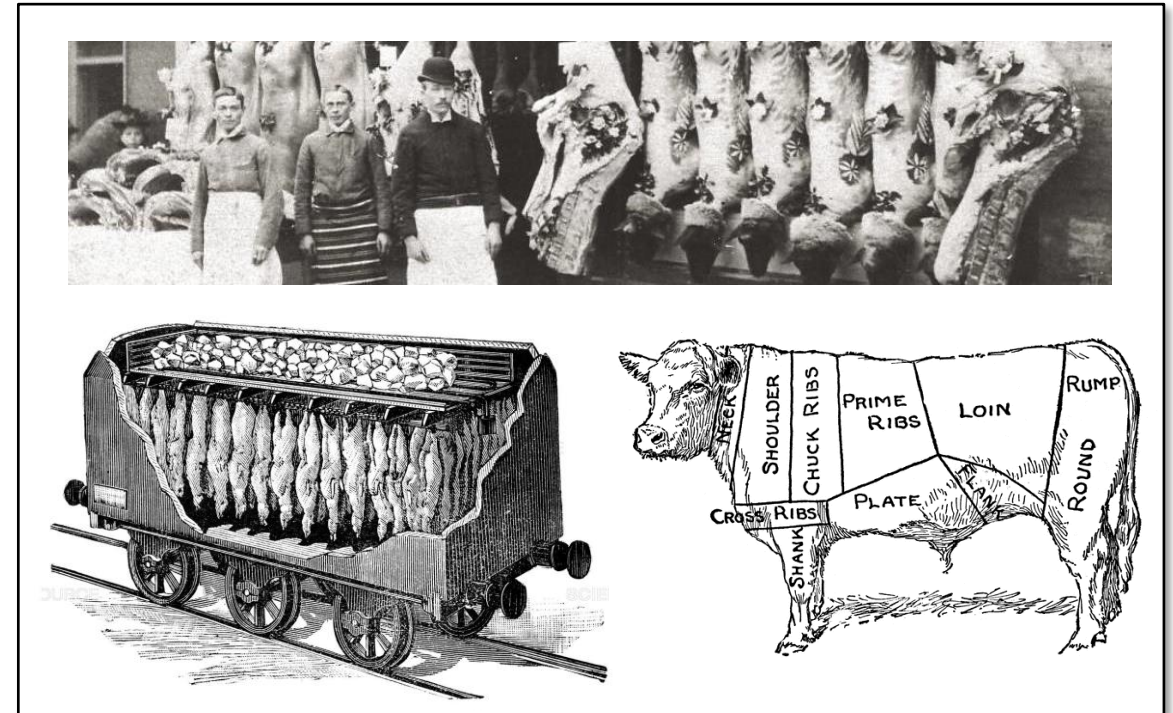
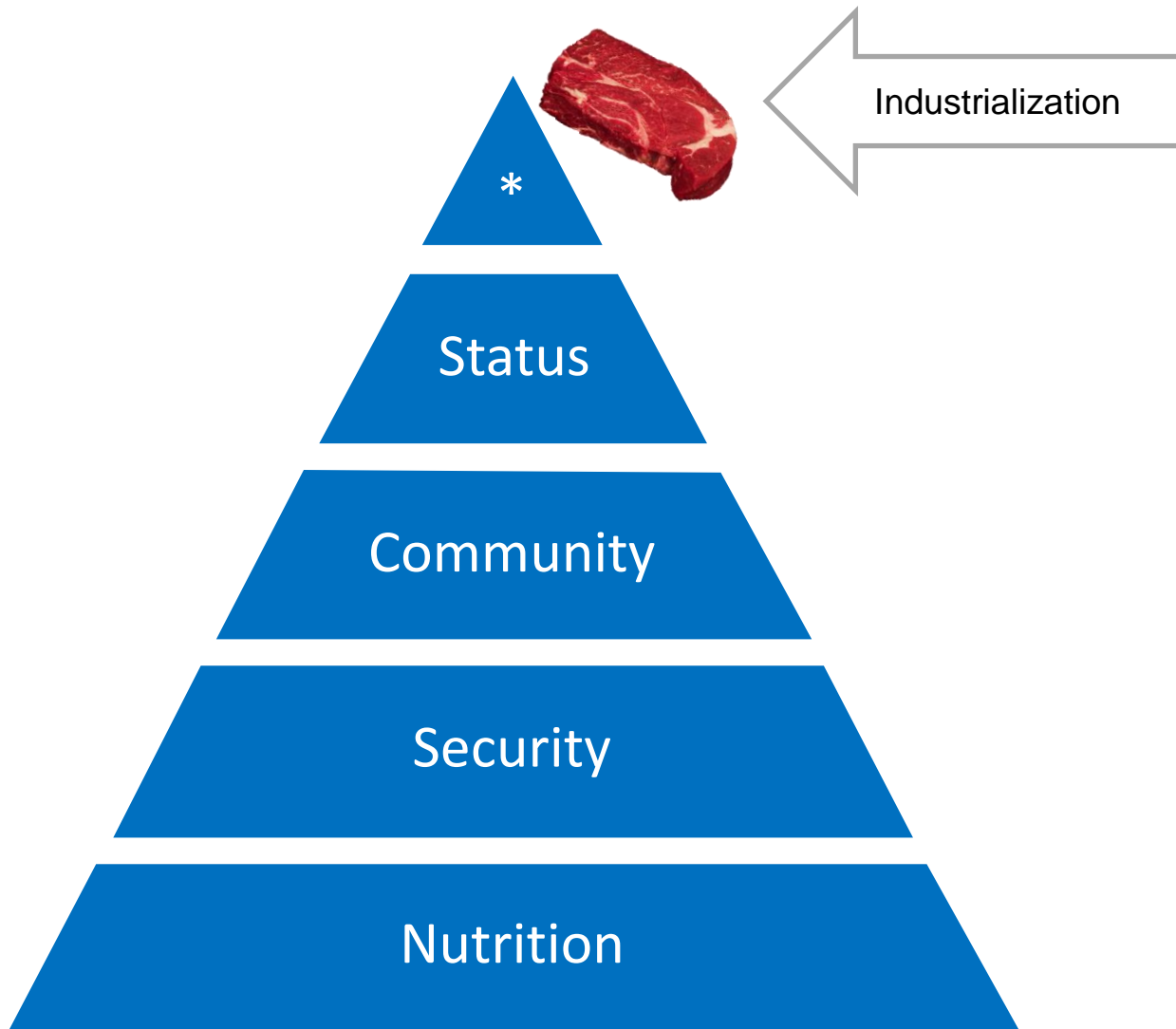


Neolithic transition: rewiring the setup



- Accumulation of resources
- Formation of the first elites
- Taxes: **grain**-manpower core
- Animal foods became rare
- Institutionalization of **sacrifice**
- Historical role in horizontal *and* vertical structuring of societies





Livestock in Evolving Foodscapes and Thoughtscapes

Frédéric Leroy^{1*}, Adele H. Hite² and Pablo Gregorini³

HYPOTHESIS AND THEORY ARTICLE

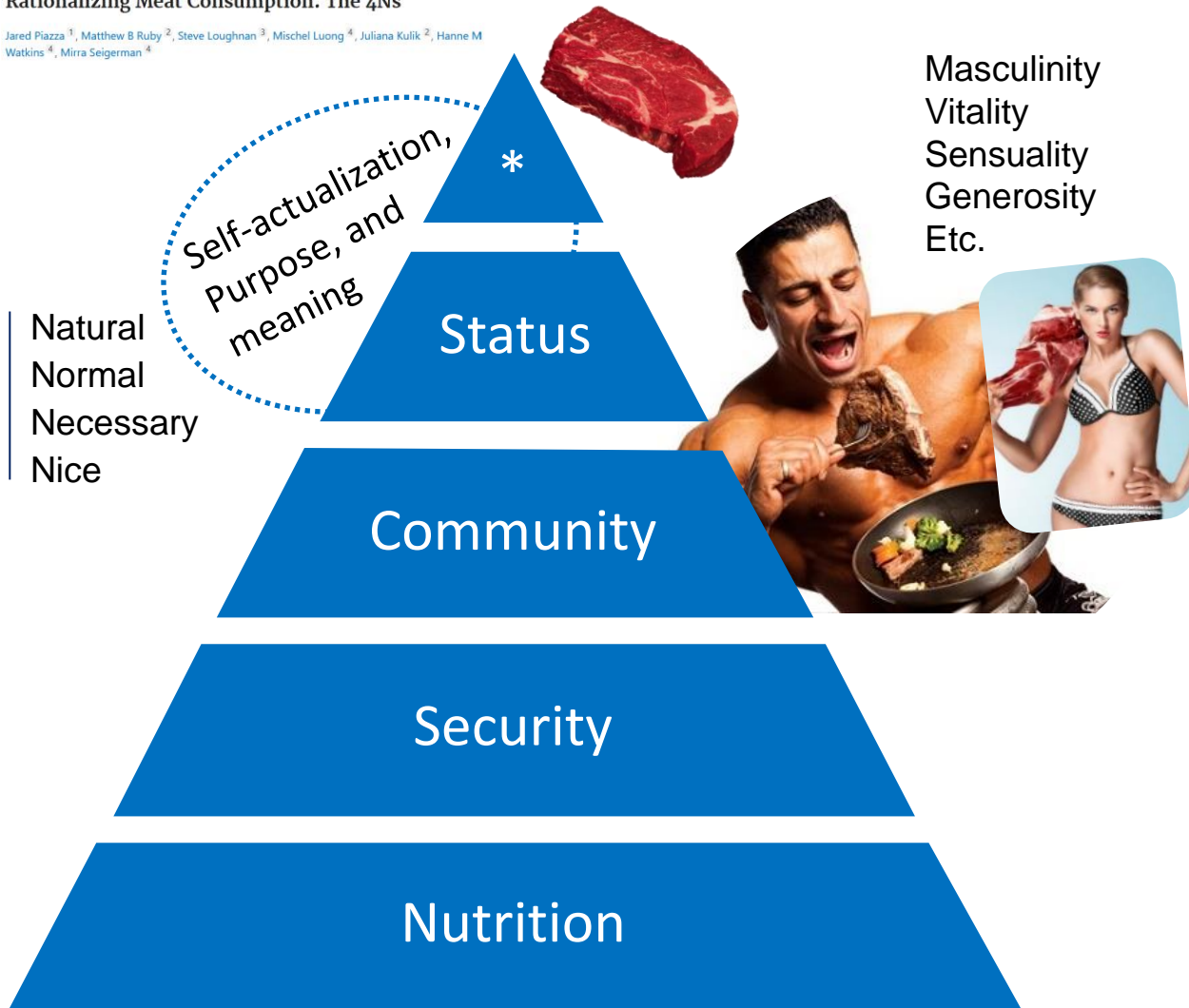
Front. Sustain. Food Syst., 14 July 2020

Post-materialist self-expression: first phase

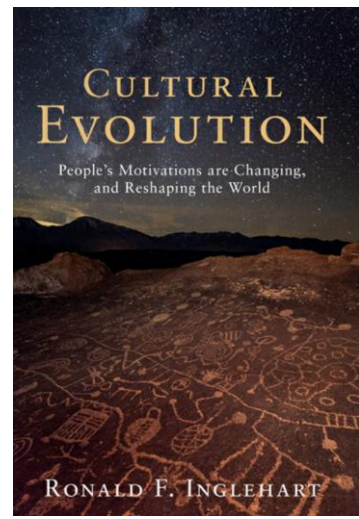
Comparative Study > Appetite. 2015 Aug;91:114-28. doi: 10.1016/j.appet.2015.04.011. Epub 2015 Apr 9.

Rationalizing Meat Consumption. The 4Ns

Jared Piazza¹, Matthew B Ruby², Steve Loughnan³, Mischel Luong⁴, Juliana Kulik², Hanne M Watkins⁴, Mirra Seigerman⁴



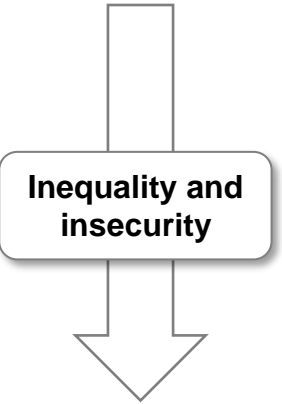
Value shift



Self-expression

Tolerance of outer groups,
equality, secularization,
environmental protection,
participation in decision-making

Individualism
Autonomy



Survival

Authoritarian reflex

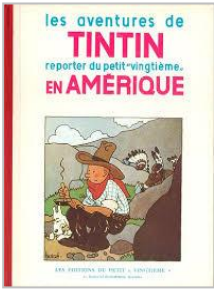
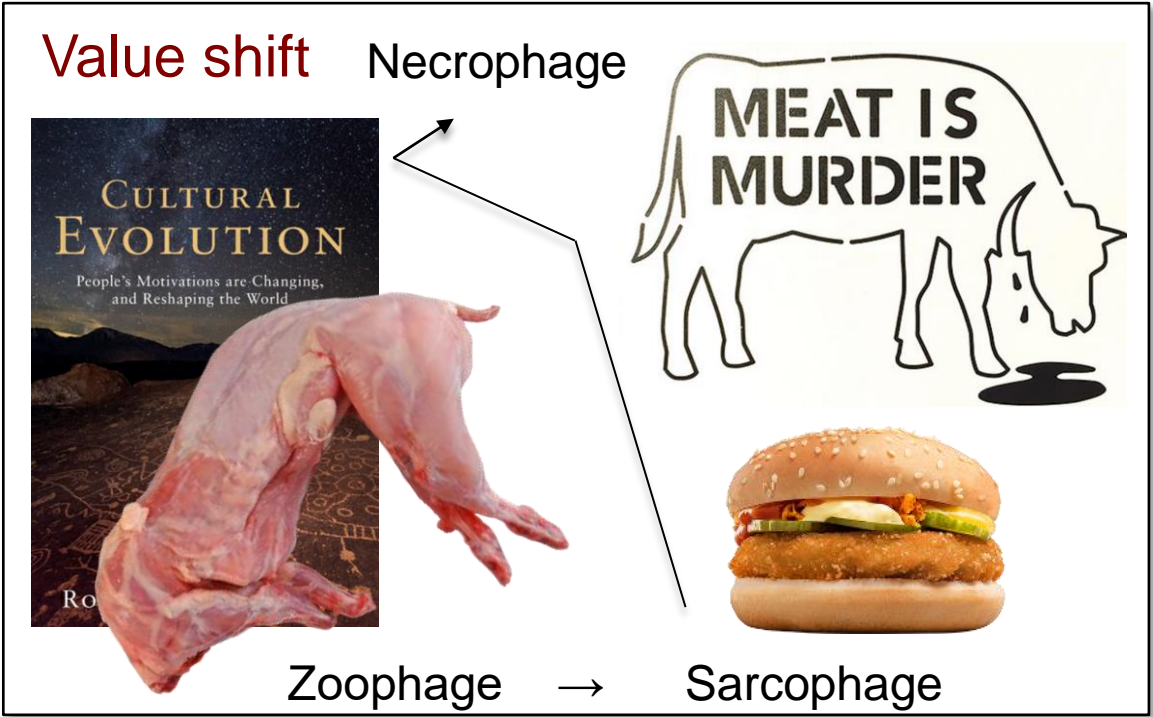
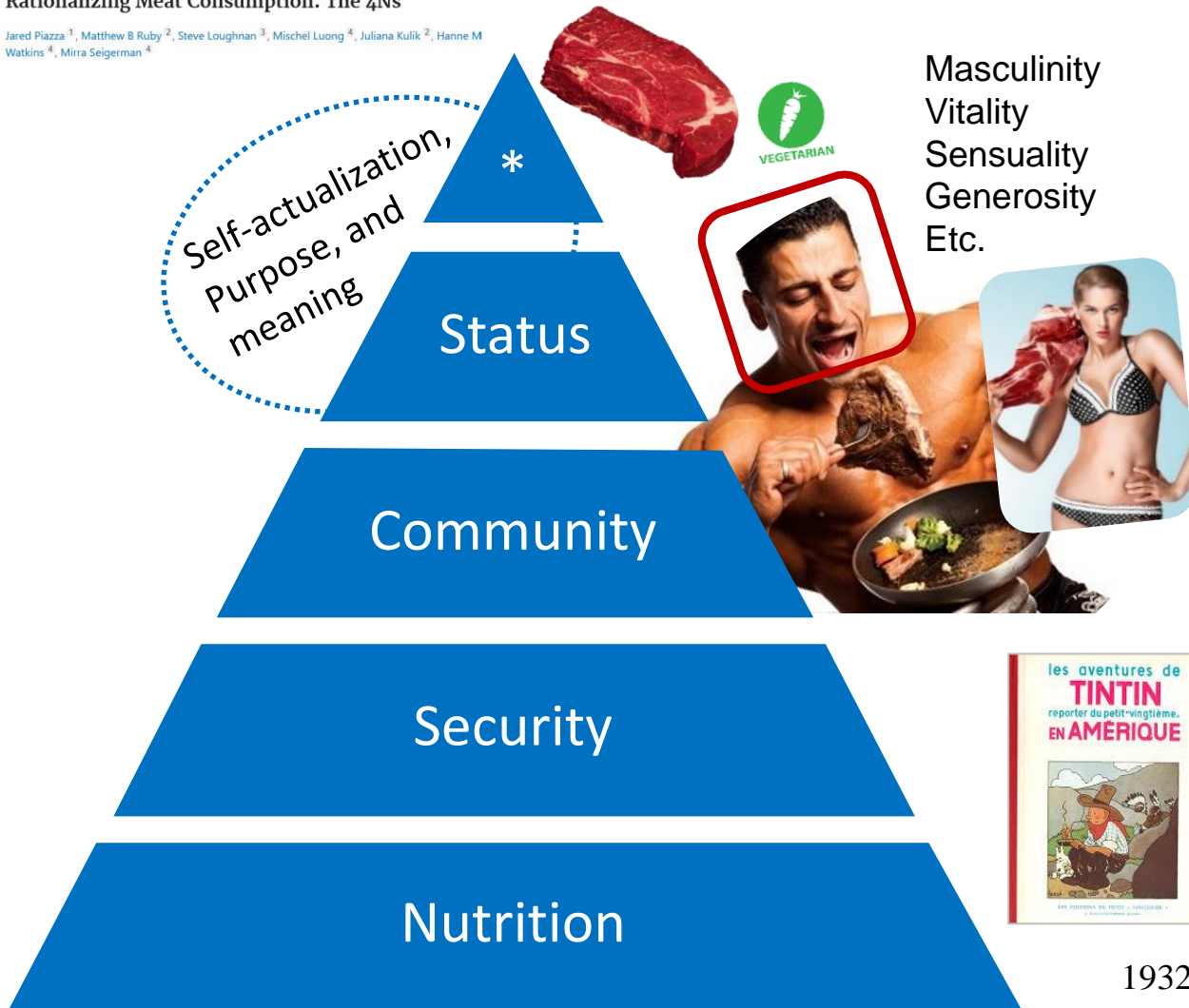
Post-materialist self-expression: second phase

Comparative Study > Appetite. 2015 Aug;91:114-28. doi: 10.1016/j.appet.2015.04.011.

Epub 2015 Apr 9.

Rationalizing Meat Consumption. The 4Ns

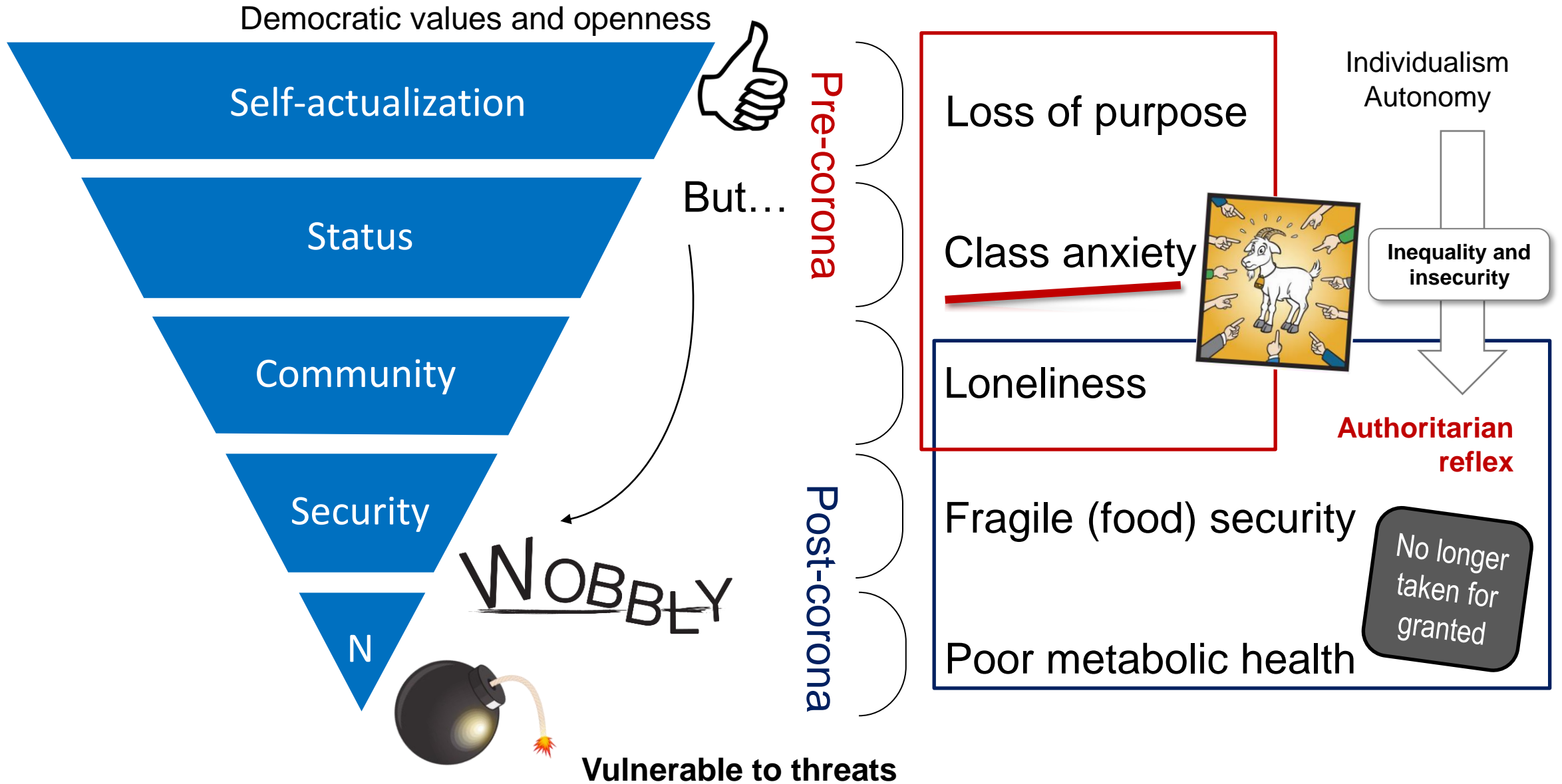
Jared Piazza¹, Matthew B Ruby², Steve Loughnan³, Mischel Luong⁴, Juliana Kulik², Hanne M Watkins⁴, Mirra Seigerman⁴



1932



Current societal order: an inverted pyramid of needs?



The dynamic is driven by the upper-middle classes (enter Nietzsche...)



Friedrich Nietzsche (1844-1900)

- 'Revaluation of all values'
- Driven by 'ressentiment'
- Focus on *purity* and self-restraint to improve one's self-assessment (status)
- **Appetites as moral failings**, disgust for life

POISON

Abnormal
Unnecessary
Unnatural
Disgusting



CURE

Normal
Necessary
Natural
Nice



Magnified -

Self-actualization



fed



Malaise driven by class anxiety and nihilism, translating into moral eating

Magnified - Frustrated - Taken for granted



Self-actualization

Status

Community

Security

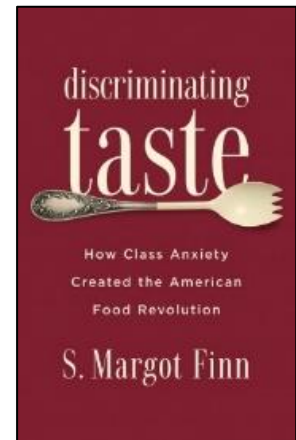
N

1886: Wherever **religious neurosis** has appeared on the earth so far, we find it connected with three dangerous **prescriptions as to regimen**: solitude, fasting, and sexual abstinence .. One of the most regular symptoms .. is the most sudden and excessive sensuality, which then with equal suddenness transforms into **penitential paroxysms**, world-renunciation and will-renunciation

Beyond Good and Evil

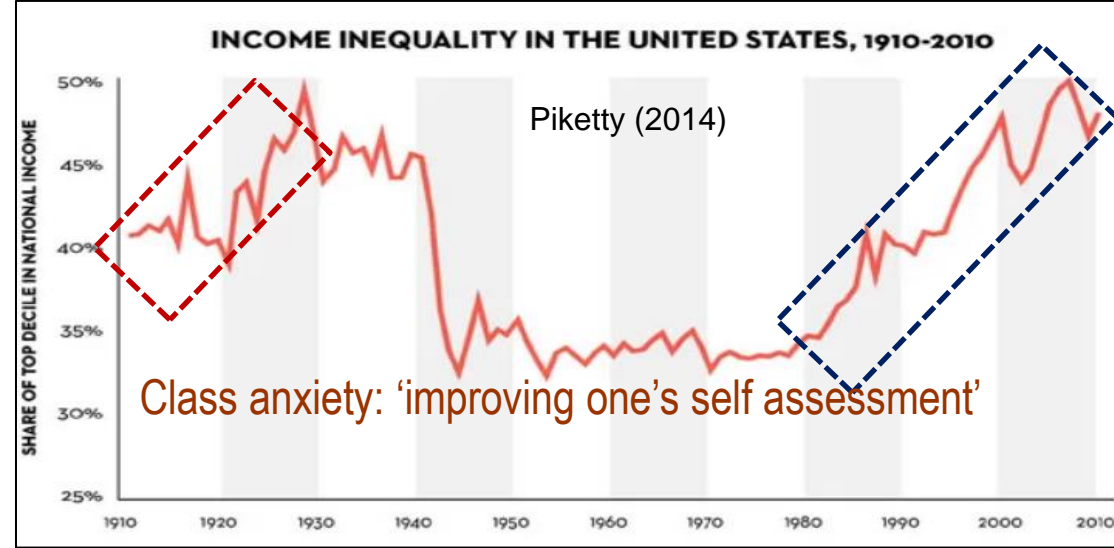
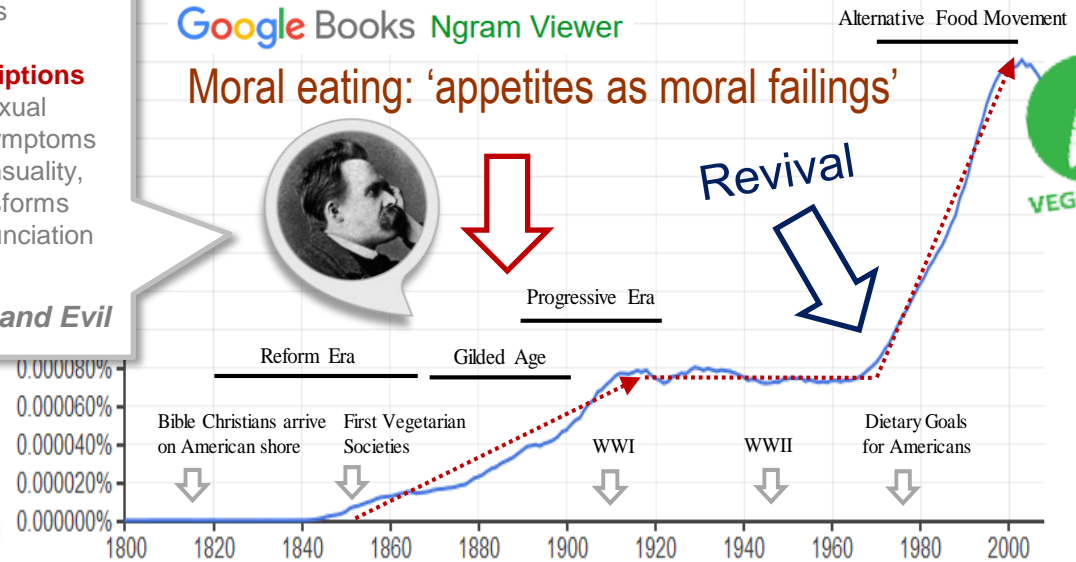


Margot Finn, U. Mich.



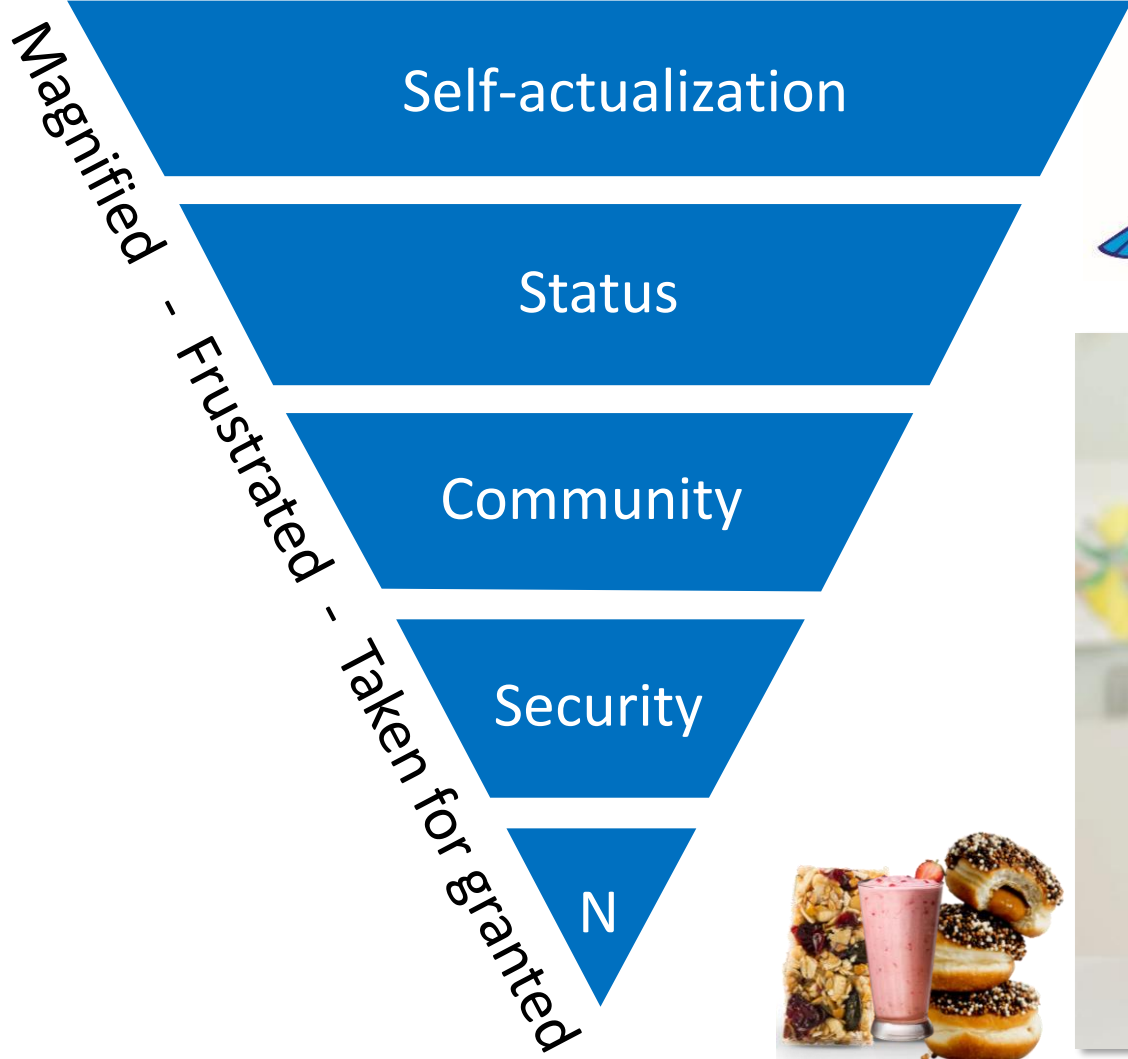
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Moral eating: 'appetites as moral failings'



Class anxiety: 'improving one's self assessment'

Result: a superficial, urban and Western-centric paradigm



Not problematic



Self-actualization

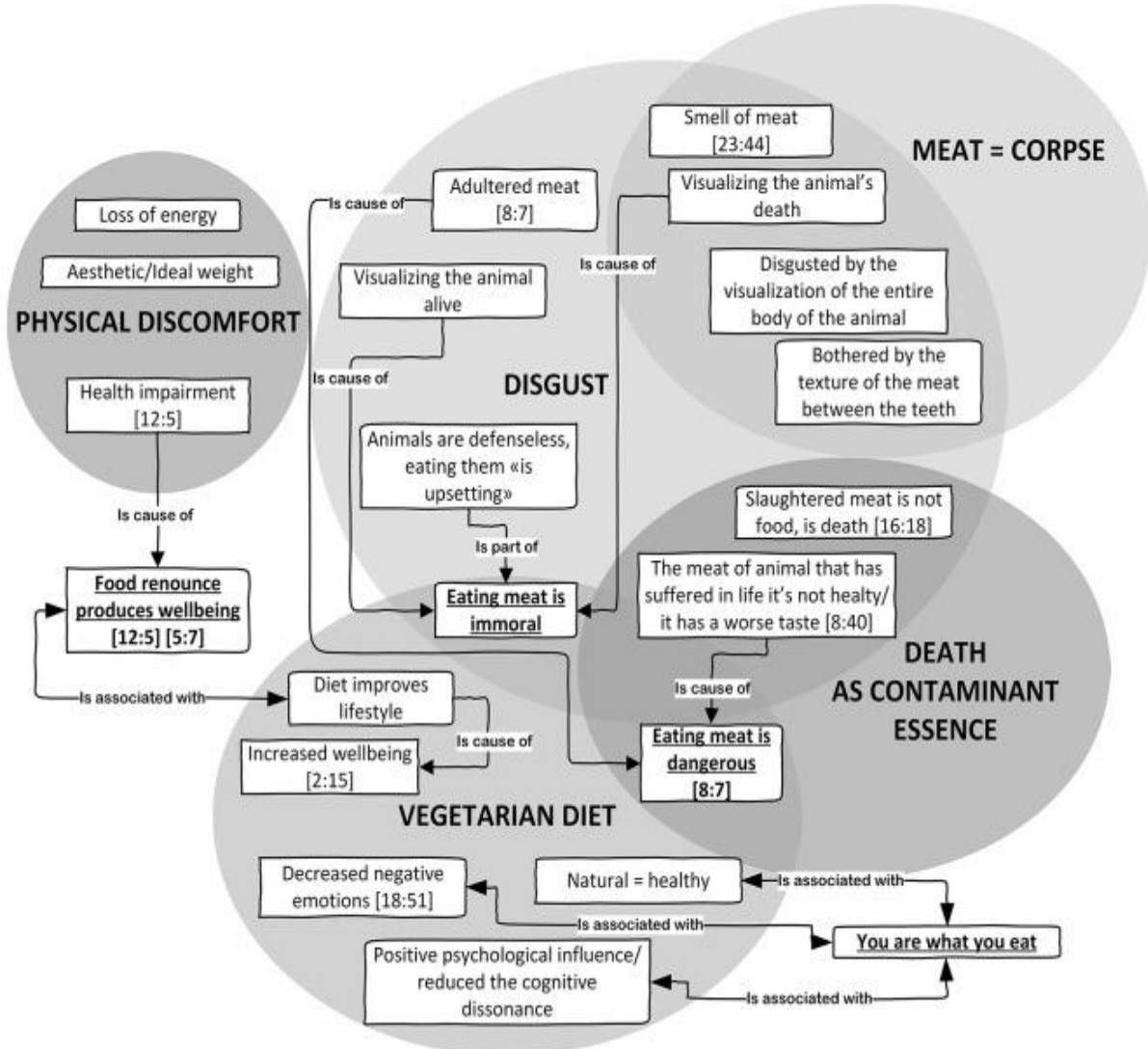
Can we
become
zoophages
again?



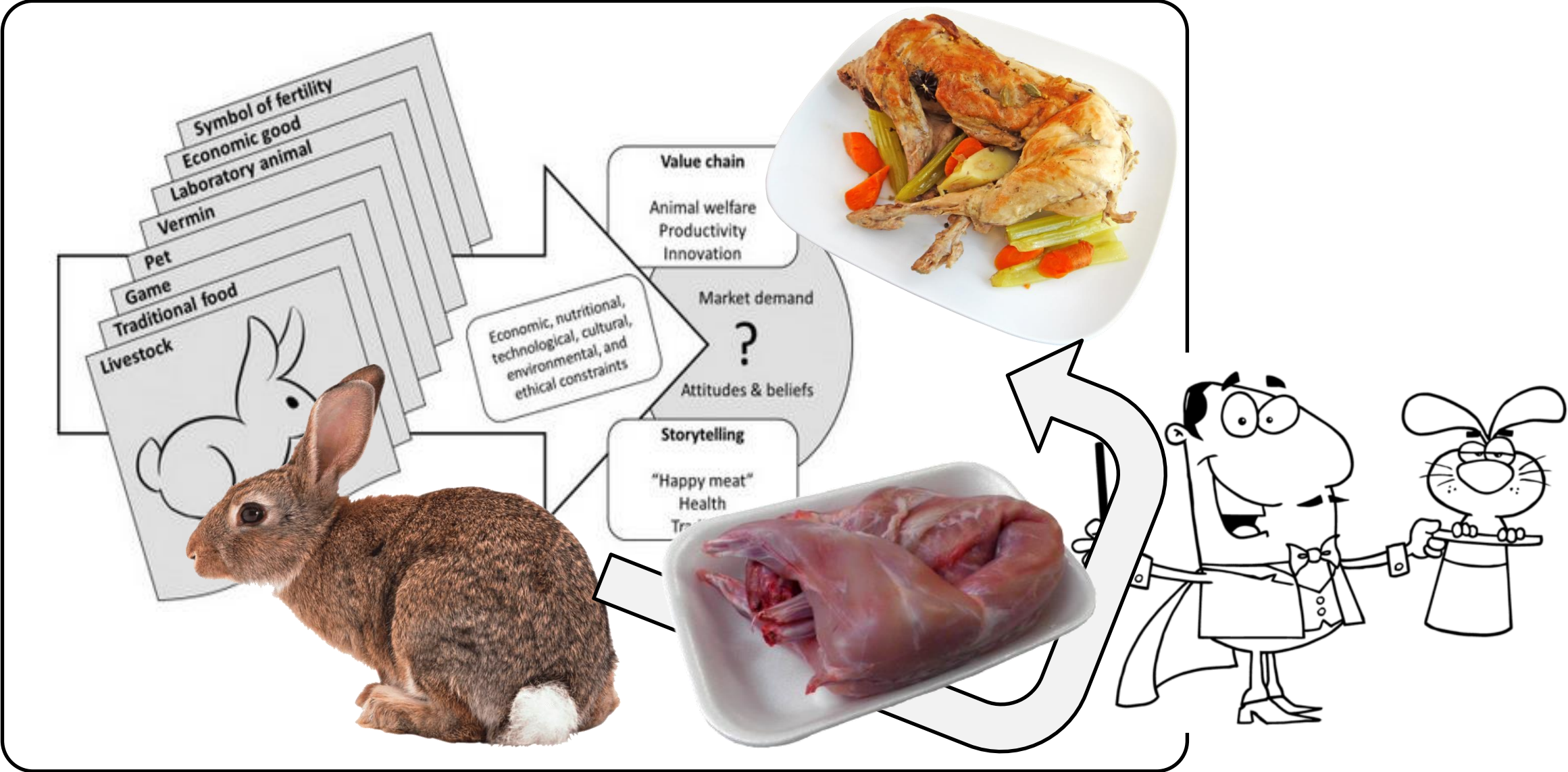
Can we overcome our obsession with status, death, and purity?



Representations of death among Italian vegetarians: an ethnographic research on environment, disgust and transcendence Testoni, I., Ghellar, T., Rodelli, M., De Cataldo, L., Zamperinia, A. (2017) Eur J Psychol. 13, 378-395.



Rabbit meat in need of a hat-trick



Rabbit meat in need of a hat-trick: from tradition to innovation (and back) Petraccia, M., Soglia, F., Leroy, F. (2018), Meat Science 146, 93-100.



Developing narrative

 [@fleroy1974](https://twitter.com/fleroy1974)
frederic.leroy@vub.be

- **Rabbit meat has always been valuable:** reasons of food security, culinary tradition
- The current decline and negative perception is a **historical aberrance**
- Related to a variety of factors, **novel attitudes to life/death** and dysfunctional human-animal interactions being key