



## Elements of innovation and tradition in meat fermentation: Conflicts and synergies



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### ABSTRACT

Fermented meats are often studied by food technologists and microbiologists with respect to their safety and quality properties. They are archetypal *traditional* foods, since they have originated as the products of empirical methods for meat preservation in a distant past and have evolved over many centuries towards a large assortment of varieties with strong territorial and socio-cultural connotations. Yet, an unambiguous definition of “traditional foods” is problematic and largely context-dependent, often being institutionalized and applied in a multitude of conflicting discourses by different actors. Contemporary food markets frequently rely on the seemingly oxymoronic concept of innovation-through-tradition, possibly as a manner to deal with a threatening and globalizing environment of change. The present paper focuses on the complex notion of “traditional fermented meats”, following a four-dimensional hermeneutic setup (including a temporal, geographic, know-how, and meaning component). It gives an overview of elements of innovation and habits that are pertinent to meat fermentation and its technological and cultural track record. Such elements include the significance of time frames and localized production, as well as of artisan practice and the attribution of (cultural) meaning. Of particular interest is the reliance on “typical” microbial communities for fermentation. In addition, the boundaries of tradition and innovation in fermented meats are explored, with respect to what is acceptable to industry and consumers.

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### 1. Introduction

Fermented meats are well-liked food products that are embedded in very old habits (Leroy et al., 2013). They are assumed to be valuable to human societies for a number of reasons, as is the case for the category of *traditional* foods in general (Trichopoulos et al., 2007). Motives for the societal appreciation of customary food production systems usually include their contributions to cultural inheritance and identity and, often, their nutritional advantages (Bienassis, 2011; Johns et al., 2013; Trichopoulos et al., 2006). Yet, the ascertainment of a clear-cut designation of the concept of “tradition” and, by extension, of “traditional foods” and its offshoot “culinary heritage” appears to be decidedly problematic from an ontological point of view, if not illusionary and beyond reach (Amilien and Hegnes, 2013; Burke, 1986).

According to the Oxford dictionary, tradition is generally to be defined as “the transmission of customs or beliefs from generation to generation, or the fact of being passed on in this way”. Often, temporal aspects and notions of territory, ethnicity, authenticity, craftsmanship, folklore, ritual, collective identity, and legacy are involved (Weichselbaum et al., 2009). Evidently, such elements are also pertinent when discussing tradition

in a food-centred context (BaSeFood consortium, 2014; Guerrero et al., 2009, 2010; Truefood consortium, 2014). According to Trichopoulos et al. (2007), traditional foods should be considered as “foods that have been consumed regionally or locally for an extensive time period, reflect cultural inheritance, and are an expression of culture, history and lifestyle”. In some cases, they may be socially connected to specific celebrations or seasons (Almli et al., 2011b; Cotillon et al., 2013), as for the Norwegian fermented trout festival in Valdres (Kvam, 2010), albeit with considerable inter- and intra-cultural variability (Guerrero et al., 2010; Vanhonacker et al., 2008). Consumer sciences focus on the associations between purchase intentions for traditional foods and concepts as “value”, “familiarity”, and “naturalness”, but indicate heterogeneity (Almli et al., 2011b; Pienieak et al., 2009). A more technological point of view has been presented by researchers of the EuroFIR project (EuroFIR consortium, 2014; Weichselbaum et al., 2009), which specifically stresses the uniqueness of traditional materials, formulations, and production methods, referring to the physical, chemical, microbiological, and organoleptic characteristics of the foods of interest. With respect to the category of traditional fermented foods, for instance, the microbiological aspects are indeed assumed to be particularly important and often related to the presence of a “house microbiota” (Pollan, 2013; Ravys et al., 2010, 2012). As a result, food microbiologists have often proclaimed “traditional” fermented meats as valuable study objects (Barbosa et al.,

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2009; Cocolin et al., 2009; Corbière Morot-Bizot et al., 2006; Fonseca et al., 2013; Lücke and Vogeley, 2012; Nguyen et al., 2010; Rantsiou et al., 2006; Talon et al., 2007, 2008).

Because of the many different approaches and conceptions in both natural and social sciences, the pinpointing of traditional (fermented) foods is remarkably complex. On closer scrutiny, the designation is fluid and merely rhetorical. Rather than as a fixed entity, it needs to be seen as a result of collective praxis, embedded in *language games* (Wittgenstein, 1953). Its subjective meaning is based on perception and social constructions, and thus fluctuates over time within societies and even on the individual level (Cotillon et al., 2013), accompanied by changes in the ecological and technological environment (Settanni and Moschetti, 2014). In the present paper, the particular category of traditional fermented meats will be approached following a four-dimensional hermeneutic working model (Amilien and Hegnes, 2013), including a temporal, geographical, know-how, and cultural meaning axis (Fig. 1). The latter are primary components and naturally “do not exclude other dimensions playing an important role in the discourse agenda surrounding traditional food, but generate a common frame of understanding traditional food” (Amilien and Hegnes, 2013). Other approaches are indeed conceivable, as may be the case when focussing primarily on consumer perceptions, requiring up to ten dimensions (Guerrero et al., 2010). Moreover, the study will underline the importance of a dialectical perspective in the development of fermented meat products, referring to the concept of “innovation-through-tradition”, which emphasizes the possibility for traditional foods to deal with a threatening and globalizing environment of change (Geyzen et al., 2012).

## 2. Temporal axis: in search of a time frame

Static definitions of tradition based on well-defined chronological scales are intrinsically flawed. Traditions that on first sight would seem of ancient derivation often come out to be fairly recent (Hobsbawm and Ranger, 1983). Therefore, the concept is more symbolical than natural, *i.e.*, a shifting “model of the past” with which a collective relates itself to both its historical past and its social present (Amilien and Hegnes, 2013; Handler and Linnekin, 1984; Smith, 1983). Often, vague allusions to “origins” and “food habits” may be expressed (Guerrero et al., 2012; Vanhonacker et al., 2013), situating tradition on the long term as a poorly defined “age-old process” (Settanni and Moschetti, 2014), “extensive time period” (Trichopoulou et al., 2007), or sequence of “multiple

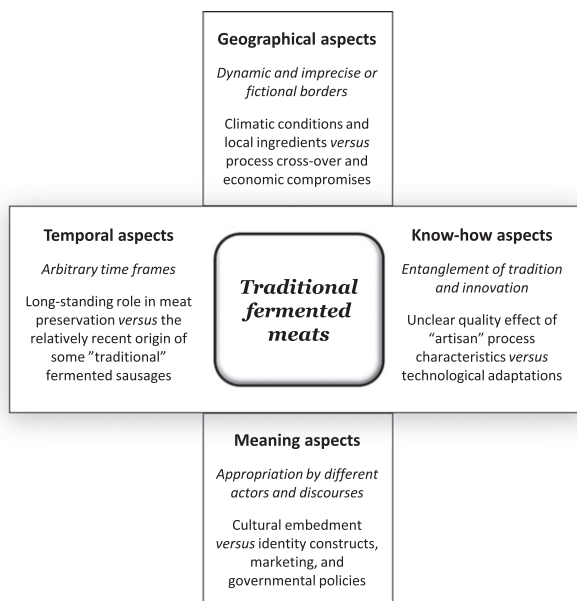


Fig. 1. A four-dimensional framing of traditional fermented meat products.

generations” (Cotillon et al., 2013). Nonetheless, the temporal dimension can also be fairly restrictive, as when the European legislation relates to a “proven usage on the Community market for a period at least equal to that generally ascribed to a human generation”, *i.e.*, a minimum period of 25 years (European Union, 2006). For the Truefood consortium (2014), this time frame should be at least 50 years, whereas the EuroFIR consortium (2014) and the Food and Agriculture Organization (FAO) set the cut-off at the level of the Second World War, because this is seen as the beginning of the era of mass food production and technological innovation (Weichselbaum et al., 2009). However, food innovations are clearly of all ages (Geyzen et al., 2012), which undermines the above-mentioned point of view. Already during the 19th century, for instance, the introduction of a massive packing industry and of freezing and canning technologies resulted in unprecedented mass production of meat and meat products (Van den Eeckhout and Scholliers, 2012).

### 2.1. The case of fermented meats

Fermented meats are traditional foods *par excellence*, having originated as the result of empirical methods for meat preservation in a distant, probably post-Palaeolithic past (Leroy et al., 2013). Several archetypal traditional foods trace back to the conservation of animal products, *i.e.*, meat, fish, and milk. Illustratively, the “Norwegian kitchen” project, set up by a number of cooks in 1998, considered dishes resulting from raw materials obtained from fishing and hunting as genuinely traditional (Amilien and Hegnes, 2013). The beginning of meat fermentation cannot be traced to a specific date, but its origin as an innovative meat conservation technique relates to the emergence of salted and dried meat products, for which the microbial stability was improved *via* a lowering of the water activity (Leroy et al., 2013). Alternatively or in combination, smoking also proved useful in reducing microbial hazards. Whereas salted meats were probably already known by the ancient Egyptians and Sumerians, the beneficial application of smoke may even date back to the storage of meat in smoky Mesolithic or Palaeolithic shelters. Later, the techniques of drying and smoking were routinely used by Celtic tribes to stabilize pork hind legs. The Romans, who borrowed from this practise, then seem to have been at the origin of the craft of sausage curing and fermentation, although they may have been inspired by the Lucanians. Subsequently, fermented meats became popular throughout the Roman era and beyond.

The establishment of many of the currently known regional fermented meats in Europe has nevertheless been relatively recent. In Germany, for instance, this may have been as late as 150 years ago (Zeuthen, 2007). Distribution of fermented meats world-wide, including the Americas and South-Africa, is even more contemporary and has been brought about by European immigrants. Although the technique of meat fermentation appears as established, following a relatively conserved continuum since ancient times, the production process has known several important and innovative modifications, leading to a diversity of final products. From the first decades of the 20th century on, fermented meats became increasingly industrial and production ceased to be chiefly home-made (Baldini et al., 2007). Also, several production factors have changed over time, including the use of specific animal breeds or the adaptation to legislative food hygiene requirements, sometimes but not always affecting the final product (Settanni and Moschetti, 2014).

### 3. Geographical axis: shifting borders

The idea of territorial anchoring is included in most viewpoints on tradition, often serving a nationalistic discourse (Hobsbawm and Ranger, 1983). Without surprise, this is also valid for the group of traditional foods (Byrne et al., 2013; Guerrero et al., 2009; Jordana, 2000; Stolzenbach et al., 2013), where information about origin is known to confer symbolic and emotional meaning and to give rise to stereotypes (Iaccarino et al., 2006; Guerrero et al., 2012). Certain definitions

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