

Religion, science and markets

Modern halal production, trade and consumption

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In 2001, a food scandal raged throughout Indonesia. The Indonesian Ulema Council (MUI; Jakarta, Indonesia) accused a Japanese company of using pork products in the production of the flavour enhancer monosodium glutamate (MSG), and demanded that the Indonesian government take appropriate action. It was a serious accusation: if true, the company would have violated halal rules, which forbid Muslims from eating—among other things—any pork or pork-derived products. As a consequence of the scandal, several employees of the company were arrested and a public apology was issued.

It is most likely that the flavour enhancer did not contain any pork products; instead, the company conceded to having replaced a beef derivative with the pork derivative bactosoytone in the production process, for economic reasons. Bactosoytone was used as a medium to cultivate bacteria that produce the enzymes necessary to make MSG. As the products of the company had previously been certified as halal by the MUI, the scandal seemed to undermine or question the legitimacy of these religious scholars in the eyes of millions of Muslim consumers.

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The scandal also made it clear that even multinational companies can come into conflict with the rising number of Muslim consumers and organizations if they overlook or disregard religiously inspired customs.

Indeed, the Indonesian scandal triggered similar enquiries at other companies worldwide. Novozymes (Bagsvaerd, Denmark)—a company that specializes in producing enzymes for a wide range of applications, including scientific research and food processing—was one of these. Customers of Novozymes became more aware of the validity of halal certifications, and the company eventually chose to have its products certified by the Islamic Food and Nutrition Council of America (IFANCA; Chicago, IL, USA). Around that time, many other food and pharmaceutical companies also decided to have their products certified as halal by various Muslim organizations. These cases illustrate how modern halal rules proliferate at the interface between religion, science and global markets.

This is certainly not the first time that religious thoughts and practices have influenced science either directly or indirectly. The history of science contains many instances in which scientific knowledge challenged long-held beliefs—ranging from the insight by Galileo Galilei (1564–1642) that the Earth revolves around the Sun, to the theory of evolution proposed by Charles Darwin (1809–1882) and current debates about using human embryonic stem cells for biomedical research. However, the requirements of halal do not challenge scientific knowledge *per se*, but rather influence the production of a wide range of consumer goods—notably food, but increasingly also cosmetics and pharmaceuticals.

Modern forms of halal production, trade and consumption are proliferating on a global scale. A study by the Canadian government estimated the value of the annual global halal trade to be upwards

of US\$150 billion among the roughly 1.3 billion Muslims worldwide (Agriculture and Agri-Food Canada, 2006). Halal is no longer simply a matter of extra religious regulations on food and food processing; it has become a huge and rapidly expanding global market that includes and affects Western biotechnology companies. The food industry is therefore paying increasing attention to various Muslim requirements, for example by avoiding substances that might be contaminated with porcine residues or alcohol such as gelatine, glycerine, emulsifiers, enzymes and flavouring agents (Riaz & Chaudry, 2003).

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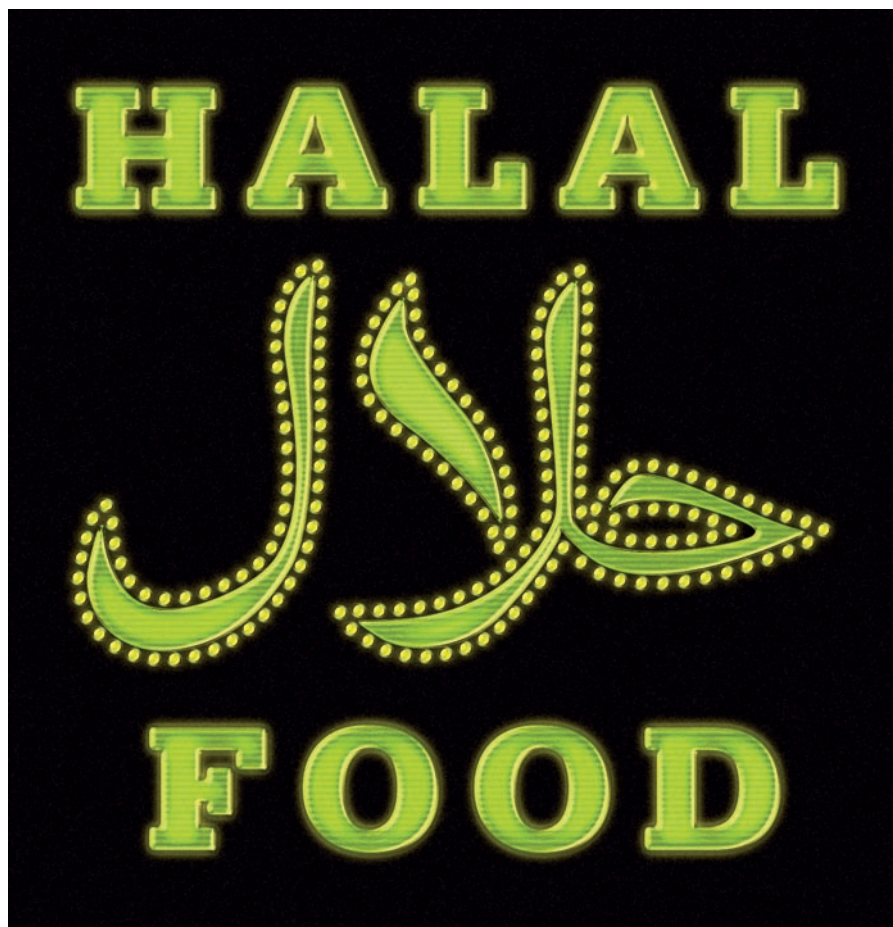
In Arabic, halal literally means 'lawful' or 'permitted'. The Quran and the Sunna—the life and teachings of the Prophet Muhammad—exhort Muslims to eat the good and lawful food that God has provided for them, but also state various prohibitions. Jewish kosher requirements are similar to halal requirements in many respects, but are more complex with regard to cross-contamination. Under the strictest definition of halal, Muslims are implicitly forbidden to eat carrion, spurring blood, pork or any meat from an animal that has not been slaughtered according to traditional guidelines—these forbidden substances are known as haram. Ritual slaughtering requires that the animal is killed in the name of God by making a fatal incision across the throat to drain as much

of the blood as possible. Most Muslims also consider carnivorous animals, birds of prey, land animals without external ears and derivatives from these animals to be haram; a minority of Muslims does not eat fish without scales such as catfish, shark, swordfish and shellfish.

Another relevant Islamic prohibition relates to wine and any other alcoholic drink or substance, which are all haram in any quantity or type (Denny, 2006). However, there is a 'grey area' between halal and haram concerning 'doubtful' things that should be avoided, which is expressed by the word *mashbooh*. Whether a certain food commodity is lawful or unlawful therefore often depends on the opinion of religious scholars, or on suspicions of undetermined or prohibited ingredients. In practice, this means that, in order to avoid contamination from haram sources, religious authorities also consider the context and handling of food when they determine whether a product is halal.

Building on 10 months of anthropological fieldwork in suburban Malaysia between 2001 and 2002, I have argued that the more a culture of consumption asserts itself, the more it causes and intensifies controversies over what Islam is or ought to be (Fischer, 2008). In addition, halal is no longer simply a set of regulations for food and food preparation; it is a growing market that involves producers, consumers and certifying authorities, which extends beyond the Muslim population. One crucial effect of these transformations is the deepening and widening desire for halal commodities among Muslims, which I label 'halalization'. This signifies a major preoccupation with, and proliferation of, the concept of halal in a multitude of commodities, and has incited debates about the boundaries and authenticity of halal purity versus haram impurity. A growing number of Muslim consumers in Malaysia are becoming concerned about not only traditional halal food requirements, but also contamination from haram sources in products such as toiletries and medication.

Malaysia is not an Islamic state, but Islam is its official religion and more than 50% of the population of the country are Muslims. The steady economic growth of Malaysia over the past three decades, and the emergence of a large group of Muslim middle-class consumers, as well as governmental incentives to strengthen halal production,



trade and consumption, have all added to the importance of halal to Malaysia. Moreover, the rise of resurgent Islam in Malaysia during the 1970s was a challenge for the state, which promotes a modern and moderate form of the religion. In order to counter this religious resurgence, the state emphasized its dedication to Islam, and introduced Islamic education and finance, and the institutionalization of halal (Fischer, 2008). This control applies not only to foodstuffs and toiletries, but also to other products such as vaccines. The Malaysian Prime Minister Abdullah Haji Ahmad Badawi has argued that Malaysia and the developing world need to ensure self-sufficiency in halal vaccine production (Badawi, 2006). In the 1980s state institutions such as the Islamic Development Department of Malaysia or JAKIM in Kuala Lumpur, the capital of the country, started regulating the proliferation of halal, although their certification efforts remained limited to the realm of the Malaysian state.

In 2004, the Malaysia International Halal Showcase (MIHAS) was launched in Kuala Lumpur. In his opening speech, Badawi stated that establishing Malaysia as a 'global halal hub' was a major priority of the government. Badawi also asserted that halal products are increasingly being recognized by Muslims and non-Muslims alike as safe foods in an era of diseases and health disasters owing to unhealthy practices: "In the UK, for example, where there are approximately 3 million Muslims, double that number buy halal meat, and I am confident that similar statistics reflect such demand in many other countries" (www.pmo.gov.my). More recently, the concept of halal has been strengthened and has taken on a new meaning as pure, sacred, appropriate or healthy. The more halal food is promoted as healthy, the more science is evoked to ensure that products live up to modern standards. Indeed, MIHAS is an example of promoting halal principles as Muslim dietary rules that conform to scientific knowledge and research.



Fig 1 | Halal restaurant in Edgware Road, London, UK. © J. Fischer.

In addition, the Malaysia International Halal Park (MIHAP) is being developed as, “the first International Halal Park offering a world-class global gateway for Halal industries, trade and services”, according to MIHAP Holdings, which is the company behind the endeavour (www.myhalalhub.org). In December 2007, the Malaysian government announced that it had signed a memorandum of understanding with National Investment Management Ltd (NIML) of China to facilitate the participation of the country—through US\$500 million in foreign investments—in the development and promotion of MIHAP. The Managing Director of NIML explained that the population of more than 30 million Muslim consumers in China is “ready for global markets”. Chinese firms have also expressed their interest in halal, as Chinese food producers find it difficult to penetrate countries with a majority Muslim population, owing to a lack of endorsement and certification by Muslim authorities.

In order to attract foreign companies and investment to MIHAP and to Malaysia, state bodies and authorities such as JAKIM are refining their methods of inspection, control and discipline in scientific production. In the course of the institutionalization of halal that has taken place over the past three decades, local companies have become accustomed to Malaysian state certification by JAKIM.

The food company Gardenia (Selangor Darul Ehsan, Malaysia), for example, promotes its products in the following way: “At Gardenia, a special Halal Committee is formed to scrutinize every aspect of Halal regulations and to ensure that all requirements are stringently adhered to. [...] All Gardenia products are certified Halal by JAKIM. Regular factory inspections are conducted by officers from JAKIM to monitor and ensure that the overall operations are following the guidelines set by them” (www.gardenia.com.my/halal.html). To summarize, Malaysia promotes halal as bridging religious and scientific hygiene, safety and health standards, as an example of the compatibility of the state, modern Islam, business and Islamic consumption.

As could be expected, the standardization, bureaucratization and certification of halal in Malaysia contrasts with the conditions in more fragmented and complex halal markets, where a plethora of groups, organizations and individuals have divergent ideas about halal. This is the situation in the UK, for example, which has a sizable Muslim population and is therefore a major market for halal foods. In 2006–2007, I conducted fieldwork-based research on halal understanding and practice among Muslim consumers in London. I also carried out

participant observation and background interviews with numerous halal producers and traders, Islamic organizations and food authorities, to discuss issues such as halal in scientific research, business and religion, ethnicity and trust, food scares, meat, halal and wholesomeness, the politics of halal and expanding halal requirements.

Ritually slaughtered meat is the primary halal commodity in London; however, producers, Muslim groups and consumers are now subjecting a whole range of new commodities to various halal requirements. So far, attention to halal in Britain for the most part has focused on conflicts over the provision of halal in schools and the politics of religious slaughter. In many parts of London, such as Finsbury Park and Whitechapel Road, halal is a distinctive presence on signs and in butcher shops and restaurants (Fig 1). Lately, an increasing number of halal certified products have been appearing in branches of UK supermarkets such as Tesco (Cheshunt) and ASDA (Leeds).

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The British government does recognize religious needs and has adapted its policies to accommodate Muslim groups. However, as the understanding and practice of halal are being transformed to involve a broader range of commodities, not unlike Jewish kosher products, the state is being called on to help regulate them. Although the British government recognizes traditional halal requirements, such as the need for religious slaughter without stunning the animal, it has little authority to inspect, certify or standardize halal. In the eyes of some British Muslims, this leaves consumers unprotected against growing commercial interests in halal and against potential abuse.

A large part of the research into halal in the UK is carried out by ‘secular’ market-research companies, which are beginning to recognize the commercial aspects. Supermarkets in London, such as Tesco and ASDA, require that halal products are certified by locally recognized bodies, such as the Halal Food Authority (London, UK) and the Halal Monitoring Committee

(Leicester, UK). In this way, halal food is leaving its traditional niche in butcher shops catering to Muslim consumers and is becoming part of the 'world food' products offered in major supermarkets. The Tesco Extra store in Slough, outside London, for example, claims to stock the widest world food range in Britain, including halal products. This store also has a traditional halal butcher operating under a concession to sell fresh meat. Anecdotal evidence from fieldwork in this area suggests that Tesco, by using its Slough store as an entry into the halal market, has reduced sales among halal butchers in the surrounding area.

Tesco and ASDA have also introduced a halal chocolate bar that, among other slogans, is advertised as follows: "Community & chocolate close to your heart? Isn't it time your chocolate bar did something more than just taste good?" Furthermore, it states on the packaging of this chocolate bar that "10% of net Profit goes to Charity." Interestingly, I could not identify any authority that had certified this product as halal. This exemplifies the main difference between the halal market in Malaysia, where products are increasingly being certified by either government authorities or an Islamic organization that is recognized by the state, and the market in Britain, where new halal products are, in many cases, not properly certified in the eyes of critical Muslim consumers. Indeed, many of the people I talked to during my study were concerned about doubtful substances in a wide range of products. These concerns are, in fact, well grounded. In 2006, the British newspaper *The Guardian* reported that, occasionally, food producers add pork-derived gelatine, among other things, to a range of foods (Eliot, 2006). A major problem for certifying food and other products as either halal or kosher is that such additives are difficult to discover.

In response to this need, the Halal Food Authority, which is a voluntary and non-profit organization, has been expanding its services to include more products. Originally founded in 1994 to license abattoirs and halal butcher shops, the organization is also engaged in regulating and authenticating foodstuffs, pharmaceuticals, confectionary, toiletries, flavourings, emulsifiers and colourings for Muslim usage. Indeed, many Muslim consumers in Britain are concerned about not only traditional halal requirements, but also the processing and ingredients of food intended for everyday consumption. Given

the abundance of food scares and the media attention that they receive, such concerns are, in fact, reinforced to the point that many Muslim consumers regard halal as not only a proper but also a more healthy form of consumption.

It is not just the producers and distributors of food and food ingredients that need proper certification from Muslim authorities in order to cater to Muslim consumers; pharmaceutical and biotechnology companies increasingly do so too. As part of my research on halal in biotechnology, I visited Novozymes, a leading producer of enzymes, which has adjusted its production to meet increasing demands from both Jewish and Muslim groups. Substrates and ingredients derived from pigs and other animals have been replaced by plant, fish or mineral-based ingredients. The company has also employed halal/kosher coordinators both at its head office in Denmark and at its plants around the world. Although Novozymes has complied with kosher requirements for several years, the halal/kosher coordinator explained to me that enquiries about halal certification from Southeast Asia, especially Malaysia, Singapore and Indonesia, finally culminated in new practices in 2001.

As a consequence of the growing emphasis on halal requirements, many Muslim organizations now claim recognition as authorities in the certification and inspection of halal production. Also, as mentioned previously, Novozymes chose IFANCA to carry out regular inspections at its plant in Denmark. At the same time, other Muslim organizations have approached the company with enquiries about production details.

The regular inspections of Novozymes by IFANCA take 1–2 days, during which the Muslim inspectors see a large part of the production process. They do not concentrate on the biotechnological details as much as on hygiene in the production process to ensure that no cross contamination with haram substances occurs. These inspections are resource-demanding for Novozymes; however, they allow the company to develop and refine their production methods to comply with increasing religious requirements. For example, Novozymes does not introduce new ingredients or production processes without consulting religious organizations. Consequently, these organizations influence the innovation process within the biotechnology industry.

Muslim consumers are not always fastidious about halal requirements—members of this highly diverse group are often confused rather than convinced about the moral implications of modern forms of halal understanding and practice. However, many Muslim consumers rely on the increasing number of 'certifying bodies', which claim recognition and authority through halal. At the same time, multinational food companies and supermarket chains, such as McDonald's (Oak Brook, IL, USA), Nestlé (Vevey, Switzerland) and Tesco, invest in and promote halal on a global scale; this again drives the demand by individual consumers and groups for certification and monitoring. The more halal proliferates on a global scale, the more 'scientific' modes and methods of production, inspection and traceability become essential for producers, traders and consumers. The increased focus on such methods to verify commodities as halal based on science constantly expands the requirements to cover new types of commodities and practice, including cosmetics, pharmaceuticals and hygiene products. Producers and distributors need to develop new processes and to refine existing ones, in order to live up to 'scientific' standards.

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