

### More skin in the game

- 1 LEATHERMAKING is an ancient craft. The oldest leather artefact found so far is a 5,500-year-old shoe from a cave in Armenia, but paintings in Egyptian tombs show that, 7,000 years ago, leather was being turned into all manner of things, from sandals to buckets to military equipment. It is a fair bet that the use of animal skins for shelter and clothing goes back hundreds of thousands of years at least.
- 2 Leathermaking is also, though, a 24. In 18th-century London the soaking of putrefying hides in urine and lime, to loosen any remaining flesh and hair, and the subsequent pounding of dog faeces into those skins to soften and preserve them, caused such a stench that the business was outlawed from the City itself. In countries such as India and Japan, the trade tainted people as well as places and was (and often still remains) the preserve of social outcasts.
- 3 Modern production methods are less stomach-turning than those of the 18th century. Dog turds, lime and urine have been replaced by chromium and other chemicals. But some of those replacements are, themselves, pretty caustic substances. And the whole leather industry, based as it is on animal hides, is vulnerable these days to sensibilities about the relationship between human beings and other animals that would scarcely have crossed peoples' minds in former years. Set against these considerations is a commercial one: leather, prized for its durability and suppleness, is a business worth \$100bn a year.
- 4 These contrasting facts make leather manufacturing a tempting target for technological disruption. And tanned animal skins are indeed about to face a rival. The challenge comes from something which is, in most respects, the same as natural leather. The difference is that, instead of coming from an animal's back, this leather is grown, by the metre, in factories. The most advanced practitioner of the still-experimental art of growing leather is Modern Meadow, an American firm, which hopes to bring the new material to market within two years.
- 5 Factory-grown leather promises several advantages over skins taken from animals. One is that it can be made in convenient sheets with straight edges, rather than being constrained by the erratic shapes that animals come in. Another is that it is more consistent than the natural stuff. It is devoid of the scars, marks and other defects to which real skin



is inevitably prone. Nor does it vary from animal to animal in the way that natural leather does. All these facts reduce waste and improve quality. They will also, presumably, please those who feel that animals should not have to die in order that people can have nice shoes and plush seat covers.

6 One other advantage of Modern Meadow's manufacturing process is that it permits different parts of a sheet to be given different properties. That can change both the look and the feel of the product in controlled ways. One area might, for instance, be made stiff while another is made soft. This would allow the newfangled 'hides' to be custom-built for particular designs of shoe. The process could also be tweaked to produce specialist leathers, such as ostrich or alligator.

7 Modern Meadow is not actually out to ape leather; the firm's aim is to produce a new material in its own right, complete with brand name. The new name is meant to take the wind out of the sails of anyone who might seek, paradoxically, to contrast the faultlessness of a synthetic product with the inherent flaws of a natural one in a way advantageous to the latter, as has happened to synthetic gem-quality diamonds.

8 The chosen name will be revealed on October 1st at a fashion show in the Museum of Modern Art, in New York – as will a T-shirt, the first garment to be made from the material. Biotechnology will thus strut its stuff on the catwalk, and leather, whatever title it goes by, will take its first, halting steps away from the abattoir.

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