

### EVOLUTION

## Scrappy Pets

- 1 **Scientists** have two theories for how dogs became man's best friend. One holds that people captured wolf pups and tamed them for their hunting and guarding abilities. The other, more popular explanation proposes that the advent of agriculture and the attendant development of human settlements in the Middle East around 10,000 years ago created scavenging opportunities for animals bold enough to exploit them and that wolves themselves thus initiated domestication.



New findings, published online January 23 in *Nature*, support this latter view and offer insights into how canine ancestors were able to take advantage of this novel resource.

- 2 Erik Axelsson of Uppsala University in Sweden and his colleagues analyzed DNA from 12 wolves and 60 dogs that represent 14 diverse breeds, looking for regions of the dog genome that evolved under selection pressure during domestication. Intriguingly, genes involved in the metabolism of starch showed up among the targets, along with genes that may have brought about behavioral changes such as reduced aggression and improved social-cognitive skills. In fact, the study revealed that during the domestication of dogs, selection acted on genes involved in all three stages of starch digestion, promoting mutations that facilitated the transition from a meat-centric diet to one heavy on starch.

- 3 Previous studies have shown that cats, too, may have domesticated themselves by dining on human leftovers. Although house cats have only a limited ability to metabolize carbohydrates, including starch, they possess a longer intestine than their wild counterparts, presumably to help digest the lower-quality sustenance they get from trash heaps compared with the all-meat diet they would be living on in the wild, according to geneticist Carlos Driscoll of the National Institutes of Health. In other words, begging for table scraps has been a long dog and cat tradition.  
—Kate Wong

adapted from *ScientificAmerican.com*, 2013

## Tekst 2 Scrappy pets

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- 1p 2 “this novel resource” (einde alinea 1)  
Wat wordt hiermee bedoeld?  
Leg uit in je eigen woorden.
- 2p 3 Geef van elke van de volgende beweringen aan of deze wel of niet overeenkomt met de inhoud van de tekst.
- 1 Recent dog DNA research corroborates the theory that wolves started their own domestication.
  - 2 Eating poor quality food may have caused an evolutionary change in the anatomy of domestic cats.
  - 3 It is unlikely for cats to have been domesticated in a similar way to dogs since cats react differently to starch.
- Noteer “wel” of “niet” achter elk nummer op het antwoordblad.

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### Bronvermelding

*Een opsomming van de in dit examen gebruikte bronnen, zoals teksten en afbeeldingen, is te vinden in het bij dit examen behorende correctievoorschrift, dat na afloop van het examen wordt gepubliceerd.*