How smart are crows? - Katharina Brecht — 中英對照學習本

TED-Ed（講解：Katharina Brecht）· 4 分 49 秒

中英對照學習本 · 每段約 100 字 · 段落開頭時間碼可點擊跳轉影片

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In one of Aesop's 2,500-year-old fables, a crow is searching for water. It spies a pitcher and discovers liquid inside— but it's beyond reach. Soon, the crow begins dropping pebbles into the pitcher. One by one, they displace the water, and the crow quenches its thirst. Interestingly, this fable turns out to be pretty accurate. In a 2014 experiment, scientists placed a food reward in a tube partially filled with water and watched as crow after crow dropped stone after stone in until the food was in beak-snatching distance. This is just one of many fascinating displays of intelligence from corvids— the bold, brainy family of songbirds that includes crows, ravens, jays, and magpies.

> 伊索寓言裡有一個流傳了兩千五百年的故事：一隻烏鴉正在找水。牠發現一個陶罐，裡頭有液體，偏偏搆不著。沒多久，烏鴉便開始把小卵石丟進罐中。一顆接一顆，卵石把水擠開，水位漸漸上升，烏鴉終於解了渴。有趣的是，這則寓言後來被證實相當準確。2014 年的一項實驗裡，科學家把一份食物獎勵放進一支只裝了部分水的試管，然後看著一隻又一隻烏鴉接連丟入石頭，一顆接一顆，直到食物升到喙尖一啄就能得到的距離。這不過是鴉科鳥類展現智慧的精采例子之一——鴉科是一個大膽又聰明的鳴禽家族，家族成員包括烏鴉、渡鴉、松鴉與喜鵲。

(n.) **fable**
寓言；寓言故事

(v.) **displace**
排開；擠走（此處指石頭把水擠開）

(adj.) **accurate**
準確的；與事實相符的

(n.) **reward**
獎勵；報酬

(n.) **intelligence**
智力；智慧

(n.) **corvids**
鴉科鳥類（烏鴉、渡鴉、松鴉、喜鵲的統稱）

(n.) **songbirds**
鳴禽；會鳴唱的鳥類

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To start, corvids are strategic when it comes to their food. They ransack trash bins and snatch bites from under other birds' beaks. They also hoard and cache their food. A single Clark's nutcracker, for instance, is thought to scatter some 30,000 pine nuts across more than 2,000 cache sites, which it can recover more than nine months later. And in one experiment, scrub jays given waxworms and peanuts cached and retrieved the perishable worms first and left the peanuts for later. It seemed the jays not only recalled where they buried things, but also what they buried and when.

(adj.) **strategic**
有策略的；講究方法的

(v.) **ransack**
翻搜；翻遍（找吃的）

(v.) **hoard**
囤積；大量儲藏

(v./n.) **cache**
藏起（食物）；儲藏處

(v.) **scatter**
分散；撒開

(adj.) **perishable**
容易腐壞的；易變質的

先從吃飯說起。鴉科鳥類覓食時很有策略：牠們翻搜垃圾桶，也會從別的鳥喙底下搶走一口吃的；吃不完的還會囤積起來，藏到各處。譬如一隻克拉克松鴉，人們認為牠能把三萬多顆松子分散藏到兩千多個儲藏點，隔了九個多月仍然找得回來。另有一項實驗，研究員給叢鴉吃了蠟蟲和花生，牠們先把容易腐壞的蠟蟲藏起來、也先取出來吃，花生則留到日後再說。看來這些叢鴉不只記得自己把東西埋在哪裡，還記得埋的是什麼、以及埋的時候。

(v.) **recover**
找回；取回

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What's more, experiments show that scrub jays will bury food when they know it won't be available the next day, suggesting they can plan for future events too. And corvid abilities extend beyond meal prepping. In one experiment, a masked person trapped and released a wild crow. When the masked person returned, crows dive-bombed them. If they wore a different mask, however, they were ignored, suggesting that corvids can distinguish between— and remember— different human facial characteristics. Crows also tend to gather around the bodies of their dead companions and caw— a behavior sometimes likened to a funeral. And one study showed that crows were slower to return to an area where they'd seen a dead companion, suggesting they associated it with risk.

更進一步，實驗顯示，叢鴉明知隔天就沒有食物吃時，會先把食物埋起來——這表示牠們也懂得為將來的事件做打算。鴉科鳥類的本領也不只用在備餐上。有一項實驗，一名戴面具的人捉住一隻野生烏鴉，再把牠放走；當同一個人再出現時，烏鴉便俯衝攻擊他。但只要換上另一副面具，烏鴉就不再理會，這表示鴉科鳥類能分辨並記住不同的人臉特徵。烏鴉還常常聚集在死去同伴的遺體旁邊，發出嘎嘎的叫聲，這種行為有時被形容成一場葬禮。而另有研究發現，烏鴉回到曾見同伴死亡的場所時會比較慢，顯示牠們把這件事與風險連結起來。

(v.) **extend**
延伸；超出（範圍）

(v.) **dive-bombed**
俯衝攻擊

(v.) **distinguish**
分辨；區別

(n.) **characteristics**
特徵；特點

(v./n.) **caw**
呱呱叫；烏鴉的叫聲

(v.) **likened**
比喻；比擬

(v.) **associated**
把……聯繫起來；聯想

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Corvids like New Caledonian crows also demonstrate an impressive proclivity for reasoning and tool use. Even in the wild, they fashion sticks into hook-shaped probes for food. Some Japanese crows have been observed placing nuts on the road, waiting nearby, then retrieving the rewards once passing cars have cracked them open. But corvids also do things that are harder to explain. They sometimes tote trinkets around, which might help them practice caching or serve as gifts to their partners. And they've been spotted repeatedly sledding down roofs on

(n.) **proclivity**
傾向；天份（某種行為的偏好）

(n.) **reasoning**
推理；思考

(n.) **tool use**
使用工具

(v.) **fashion**
製作；把……做成（某形狀）

(v.) **tote**
搬運；叼著帶走

plastic lids. Play activities like this are relatively common in corvids, especially juveniles.

> 新喀里多尼亞烏鴉這類鴉科鳥類，同樣展現出對推理與使用工具的驚人天分。即使在野外，牠們也會把樹枝加工成鉤狀的探針，用來取食。亦有觀察顯示，日本的烏鴉會把堅果放在馬路上、在旁邊等候，等路過的汽車把果殼撞碎後，再去取食那份獎勵。不過鴉科鳥類也會做一些更難以解釋的事：牠們有時叼著小玩意兒到處走，這或許有助於練習藏食，也可能是送給伴侶的禮物；還有人多次目擊牠們坐在塑膠蓋上，從屋頂一路滑下來。這類遊戲活動在鴉科中相對常見，尤其是幼鳥。

(n.) **trinkets**
小玩意兒；小裝飾物

(n.) **sledding**
滑雪橇；滑行

(n.) **juveniles**
幼鳥；幼體

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Corvids have a longer developmental period than other songbirds. And it's thought that play encourages learning and lays a strong foundation for their intelligent behavior. Some researchers think cleverness is crucial to the highly social lives of corvids. They breed cooperatively; live and communicate in large dynamic groups; share food; and mob predators together. Some have lifelong partnerships where they recognize their companions, and track, respond to, and even predict each other's behaviors and desires. Scientists today consider corvids among the smartest animals— a big step from where consensus used to be. In the late 1800s, German scientist Ludwig Edinger compared primate and crow brains and interpreted the crow's brain structure as primitive, dismissing their cognitive abilities.

> 鴉科鳥類的發育期比其他鳴禽長得多，而普遍認為，玩耍能促進學習，為牠們的聰明行為打下堅實基礎。有些研究者認為，正是這份機靈，對鴉科鳥類高度社會性的生活至關重要：牠們合作繁殖、在龐大而流動的群體裡生活與交流、分食食物、一起圍攻天敵。有些烏鴉更擁有終生的伴侶關係，能認出同伴，追蹤、回應，甚至預測對方的行為與需求。今天的科學家把鴉科列為最聰明的動物之一，這跟過去的共識相比是一大步。19 世紀末，德國科學家路德維希·艾丁格比較靈長類與烏鴉的大腦，把烏鴉的腦部構造判為原始，抹煞了牠們的認知能力。

(adj.) **developmental**
發育的；成長期的

(n.) **foundation**
基礎；根基

(adj.) **crucial**
至關重要的；決定性的

(adj.) **dynamic**
流動的；變動不定的

(v.) **mob**
群起圍攻（天敵）

(adj.) **lifelong**
終生的；一生的

(n.) **consensus**
共識；一致意見

(n.) **cleverness**
機靈；聰慧

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This was a misinterpretation. A raven, for example, has a brain that looks quite different than a Capuchin monkeys— and is about a third of the size. But both animals have a similar number of neurons in their pallium, a brain region that's associated with cognition. So while corvid brains travelled a very different evolutionary path than primate brains, it was still one that brought them sophisticated cognition. The next time

(n.) **misinterpretation**
誤解；錯誤的理解

(n.) **neurons**
神經元

(n.) **pallium**
大腦皮層（pallium），與認知有關的腦區

you spot a crow, you can be assured of its smarts. Just maybe don't give it a bad reason to remember you.

> 這其實是個誤解。以渡鴉為例，牠的腦部外觀跟卷尾猴很不一樣，體積也只有約三分之一大；但兩者大腦皮層的神經元數量卻相當，那個區域正是與認知能力有關的腦區。所以，儘管鴉科的大腦走過的演化路徑與靈長類截然不同，那條路徑一樣把精密的認知能力帶到了牠們身上。下次你在街上看到一隻烏鴉，可以確信牠真的挺聰明——只是別給牠一個記住你的壞理由。

(n.) **cognition**
認知；思考與學習的能力

(adj.) **evolutionary**
演化的；演化過程的

(adj.) **sophisticated**
精密的；複雜的

(v.) **assured**
確信；使確定