0061 Facial Expressions Do Not Reveal Emotions 面部表情不表露情绪

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1. Facial Expressions Do Not Reveal Emotions 面部表情不表露情绪

Do your facial movements broadcast (v.)散布，传播（信息等） your emotions to other people? If you think the answer is yes, think again. This question is under contentious 有争议的,可能引起争论的 debate. Some experts maintain (v.) that /people around the world make specific, recognizable faces /that express certain emotions, such as smiling in happiness, scowling 怒视（某人或某物） in anger /and gasping 倒吸气 with widened eyes in fear. They point to hundreds of studies /that appear to demonstrate 证明；说明 that 主 smiles, frowns 皱眉；蹙额, and so on 系 are universal **facial expressions** of emotion. They also often cite Charles Darwin's 1872 book /The Expression of the Emotions in Man and Animals /to support the claim that /universal expressions evolved (v.) by natural selection.

Example 1. 标题

你的面部动作会向其他人传达你的情绪吗？如果您认为答案是肯定的，请再考虑一下。这个问题正在进行有争议的辩论。一些专家认为，世界各地的人都会制作特定的、可识别的面孔来表达特定的情绪，例如高兴时微笑、愤怒时皱眉和恐惧时睁大眼睛喘气。他们指出数百项研究似乎表明微笑、皱眉等是普遍的

情绪面部表情。他们还经常引用查尔斯·达尔文 (Charles Darwin) 1872 年的著作《人与动物的情感表达》(The Expression of the Emotions in Man and Animals) 来支持普遍表达方式是由自然选择进化而来的说法。

Other scientists point to a mountain of counterevidence 相反的证据 /showing that facial movements during emotions vary (v.) **too** widely /**to** 太…而不能 be universal 普遍的；全体的 beacons 灯塔 of emotional meaning (n.). People may **smile in hatred** (n.)仇恨；憎恨；厌恶 when plotting (v.)阴谋；密谋 their enemy's downfall 衰败；垮台 /and **scowl (v.)怒视（某人或某物） in delight** when they hear a bad pun 双关语. In Melanesian 岛名 culture, **a wide-eyed gasping face** is a symbol of aggression 侵犯；挑衅；侵略, not fear. These experts say / 主 the alleged （未经证实而）声称的，所谓的 universal expressions 谓 just represent (v.) cultural stereotypes 模式化形象; 成见. To be clear 更清楚一些地说, 主 both sides in the debate 谓 acknowledge (v.) 承认；认可 that facial movements vary (v.) for a given emotion; the disagreement is about /whether there is enough uniformity 统一（性），一致（性） to detect (v.) what someone is feeling.

Example 2. 标题

其他科学家指出大量反证，表明情绪期间的面部动作差异太大，无法成为情绪意义的普遍标志。人们在密谋打倒敌人时可能会仇恨地微笑，而在听到糟糕的双关语时会高兴地皱起眉头。在美拉尼西亚文化中，睁大眼睛喘着粗气的脸是侵略的象征，而不是恐惧。这些专家表示，所谓的普遍表达方式只是代表了文化刻板印象。需要明确的是，辩论双方都承认面部动作因特定情绪而异。分歧在于是否有足够的一致性来检测某人的感受。

This debate is not just academic; the outcome has serious consequences. Today you can **be turned down** 拒绝 for a job because a so-called emotion-reading system watching you on camera /applied artificial intelligence /to evaluate 评价；评估 your facial movements unfavorably 不利地；不适宜地 /during an interview. In a U.S. court of law, a judge or jury 陪审团 may sometimes **hand down** 正式宣布；公布 a harsher (更)残酷的；严酷的；严厉的 sentence, even death, if they think a defendant's face showed a lack of remorse (n.)懊悔；非常

遗憾；自责. Children in preschools across the country /are taught **to recognize** smiles as happiness, scowls 怒视（某人或某物） as anger /and other expressive stereotypes **from** books, games and posters of disembodied 从看不到的人（或地方）发出的;空洞的；无实质的；无实体的 faces. And for children on the autism 自闭症；孤独症 spectrum 谱；光谱,范围，幅度, some of whom have difficulty perceiving emotion in others, these teachings do not translate to better communication.

Example 3. 标题

disembodied

(a.)

→ dis-, 不，非，使相反。embody, 进入肉体，实质化体现。即脱离肉体，脱离实体。

1. (of sounds 声音) coming from a person or place that cannot be seen or identified 从看不到的人（或地方）发出的

• a disembodied voice 不见其人的说话声

2.separated from the body 脱离肉体的

•disembodied spirits 游魂

这场辩论不仅仅是学术性的；结果会产生严重的后果。今天，你可能会被拒绝工作，因为所谓的情绪阅读系统会在镜头前观察你，应用人工智能来评估你在面试期间的面部动作。在美国法院，如果法官或陪审团认为被告的表情缺乏悔意，他们有时可能会判处更严厉的刑罚，甚至死刑。全国各地学前班的孩子们被教导从书籍、游戏和无实体面孔的海报中识别微笑是快乐，皱眉是愤怒和其他表达刻板印象。对于自闭症儿童，其中一些人难以感知他人的情绪，这些教导并不能转化为更好的沟通。

A preponderance (n.)(数量上的)优势；多数；主体 of evidence shows that Darwin was wrong, and his mistake was a doozy 异乎寻常的东西；独特的事物. In real life, people express a given emotion **with tremendous 巨大的；极大的 variability** 可变性；易变性；反复不定. In anger, for example, 主 people in urban 城镇的 cultures 谓 scowl (v.)怒视（某人或某物） (or make some of the facial movements for a scowl) only about 35 percent of the time, according to

meta-analyses 荟萃分析 of studies /measuring facial movement during emotion. Scowls are also not specific to anger /because people scowl for other reasons, such as when they are concentrating (v.)集中注意力，聚精会神 /or when they have gas. The same tremendous 巨大的；极大的 variation occurs (v.)发生；出现;存在于；出现在 for every emotion studied —and for every other measure 测量；度量 that purportedly 据称，据称地 tells us about someone's emotional state, whether it's their physiology 生理学；生理机能, voice or brain activity.

Example 4. 标题

doozy

(also doo·zie) (NAmE informal) something that is very special or unusual 异乎寻常的东西；独特的事物

→ 可能来自daisy, 雏菊花，引申词义非常出色的人。

meta-analyses

荟萃分析：一种统计方法，通过对多个独立研究的结果进行整合和分析，以得出更可靠、全面的结论。

have gas

chatGpt的回答: 在这里，“have gas”指的是人们出现肠胃气体的情况。当人们消化过程中产生气体时，他们可能会出现腹部不适或胀气的情况。这种情况可能导致他们面部表情紧张，类似于愤怒时的皱眉，但实际上并不是由于愤怒引起的。

大量证据表明达尔文错了，而且他的错误是愚蠢的。在现实生活中，人们以巨大的可变性来表达给定的情绪。例如，根据测量"情绪时面部的运动"的研究的荟萃分析，城市文化中的人, 在愤怒时只有大约 35% 的时间会皱眉（或做出一些面部动作来表示皱眉）。皱眉也不是特定于愤怒，因为人们皱眉是出于其他原因，例如当他们集中注意力或当他们有气体时。同样巨大的变化发生在每一种被研究的情绪上——以及所有其他据称可以告诉我们某人情绪状态的指标，无论是他们的生理机能、声音还是大脑活动。

Emotion AI systems, therefore, do not detect emotions. … there was no **objective 客观的；就事论事的；不带个人感情的 way** to confirm what, if anything, 主 the anonymous people in the videos 谓 were feeling in those moments.

Example 5. 标题

> 因此，情绪 AI 系统不会检测情绪。它们检测的是面部肌肉运动等物理信号，而不是这些信号的心理意义。 所以没有客观的方法来确认视频中的匿名人士在那一刻的感受（如果有的话）。

There's also considerable 相当多（或大、重要等）的 evidence /that facial movements are just one signal of many /in a much larger array of **contextual 与上下文有关的；与语境相关的 information** /that our brain **takes in** 吸收, 接收并理解信息或知识. Show people **a grimacing 扮鬼脸的 face** in isolation 孤独；孤立状态, and they may perceive (v.)注意到；意识到；察觉到 pain or frustration 懊丧；懊恼；沮丧. But show the **identical 完全同样的；相同的 face** on a runner 后定 crossing the finish line of a race, and the same grimace （因痛苦、厌恶等）做鬼脸，做怪相 conveys (v.)表达，传递（思想、感情等） triumph 巨大成功；重大成就；伟大胜利. The face is often a weaker signal of a person's internal state /than other signals in the array 大堆；大群；大量.

Example 6. 标题

> 还有大量证据表明，面部运动只是我们大脑接收的大量上下文信息中的许多信号之一。孤立地向人们展示一张鬼脸，他们可能会感到痛苦或沮丧。但是，在冲过终点线的跑步者身上展示相同的脸，同样的鬼脸传达了胜利。与一系列其他信号相比，面部通常是一个人内部状态的较弱信号。

Darwin's Expression suggests that /instances of a particular emotion, such as anger, share a distinct 清楚的；明白的；明显的, immutable 不可改变的；永恒不变的, physical cause 原因；起因 or state — an essence 本质；实质 —that makes the instances similar /**even if** they have superficial 表面的；外表的 differences.

Scientists have proposed a variety of essences, some of which are easily seen, such as facial movements, and others, such as complex 复杂的, intertwined 缠绕的；交织的 patterns of **heart rate**, breathing and body temperature, that are observed (v.)看到；注意到；观察到 only with specialized instruments. This belief in essences 本质, called essentialism 本质主义, is compellingly intuitive 凭直觉得到的；直觉的. It's also pernicious 有害的，恶性的（尤指潜移默化地） /because **it is virtually 几乎；实际上 impossible to prove that** an essence doesn't exist. 主 People who **believe in** essences but fail to observe them /despite repeated attempts / 谓 often **continue to believe in** them anyway. Researchers, in particular, tend to justify (v.) their belief /by suggesting that 主 tools and methods 系 are not yet sufficient to locate (v.) the essences they seek.

Example 7. 标题

pernicious

per-,完全的，-nic,伤害，杀害，词源同noxious,necrosis.引申词义有害的。

达尔文的《表情》（Expression）这本书认为，特定情绪（例如愤怒）的实例，共享着一个独特、不可改变的物理原因或状态——一种"本质"(即 "原型, 模板")，使得即使它们有表面上的差异，这些实例仍然相似。科学家们提出了各种各样的本质概念，其中一些很容易被看到，比如面部动作，而其他的则需要专门的仪器才能观察到，比如心率、呼吸和体温等复杂交织的模式。这种"本质主义"的信仰在直觉上很有说服力。然而，它也是有害的，因为几乎不可能证明一个"本质"不存在。那些相信"本质"存在, 但尽管反复尝试却仍然无法观察到它们的人, 往往仍然相信它们。研究人员尤其倾向于通过表示工具和方法还不足以找到他们所寻求的本质来为自己的信念辩护。

A solution to this conundrum 令人迷惑的难题；复杂难解的问题 /can be found in Darwin's more famous book /On the Origin of Species, written 13 years before Expression. Ironically, it is celebrated 著名的；闻名的 for helping biology "escape (v.) the paralyzing 使……瘫痪，使……麻 grip 紧握；掌握 of essentialism," according to heralded 预兆；使者，先驱 biologist Ernst Mayr. Before Origin was published, scholars believed that /each biological species had an ideal form, created by God, with defining 最典型的；起决定性作用的 properties性质；特性

—essences 本质；实质 —that **distinguished** it **from** all other species. Think of this as the “dog show” version of biology. In a dog show, each competitor 竞争者，对手 is judged against a hypothetical 假设的；假定的 ideal dog. Deviation 背离；偏离；违背 from the ideal is considered error. Darwin’s Origin proposed (v.) 提议；计划, radically 根本上，彻底地, that /a species 物种 is a vast population of varied 各种各样的，形形色色的 individuals /with no essence 本质；实质 at its core. The ideal dog doesn’t exist —it is a statistical summary of many diverse 不同的；相异的；多种多样的；形形色色的 dogs. Variation 变化，变更，变异 is not error; it is a necessary ingredient （成功的）因素，要素;（尤指烹饪）原料 for **natural selection** by the environment. When it came to emotions, however, Darwin **fell (v.) prey 受害者；受骗者 to** essentialism, ignoring (某论断或理论) 忽视 his most important discovery.

Example 8. 标题

be/fall 'prey to sth

(formal)

(1) (of an animal 动物) to be killed and eaten by another animal or bird 被捕食；成为猎物

(2) (of a person 人) to be harmed or affected by sth bad 受害；受坏影响

这个困境的解决方案, 可以在达尔文更著名的《物种起源》（On the Origin of Species）一书中找到，该书比《表情》早13年写成。具有讽刺意味的是，根据著名的生物学家欧内斯特·梅尔（Ernst Mayr）的说法，《物种起源》帮助生物学“摆脱了’本质主义’的麻痹束缚”。在《物种起源》出版之前，学者们相信每个生物物种都有一个由上帝创造的"理想形态"，具有能够将其与所有其他物种区分开的定义性特征——"本质"。可以将其视为生物学的“狗展”版本。在狗展中，每个参赛者都被评判与一个理想的狗进行比较。与理想的狗偏离被认为是错误。**《物种起源》的革命性观点是，一个物种是一个多样化的个体群体，没有核心的本质。理想的狗并不存在，**它只是许多不同狗的统计摘要。**变异不是错误，它是自然选择的必要因素。然而，在情绪方面，达尔文却陷入了"本质主义"的陷阱，忽视了他最重要的发现。**

Like a species, a given emotion such as fear, grief 悲伤，悲痛，伤心 or elation 兴高采烈；欢欣鼓舞 is a vast population of varied instances. People may indeed widen their eyes and gasp in fear, but they may also scowl 怒视 in fear, cry in fear, laugh in the face of fear and, in some cultures, even fall asleep in fear. There is no essence. Variation（数量、水平等的）变化，变更，变异 is the norm, and it is intimately 熟悉地；亲切地；私下地 linked to a person's physiology and situation, just as variation in a species is linked to the environment its members live in.

Example 9. 标题

> 就像一个物种一样，一种特定的情绪，如恐惧、悲伤或兴高采烈，是大量不同实例的集合。人们确实可能会睁大眼睛，因恐惧而倒吸一口凉气，但他们也可能会因恐惧而皱眉、因恐惧而哭泣、因恐惧而大笑，在某些文化中，甚至会因恐惧而入睡。没有本质。变异是常态，它与一个人的生理机能和处境密切相关，就像一个物种的变异与其成员所处的环境有关一样。

An increasing number of emotion researchers /are taking **population thinking** more seriously /and moving beyond **the essentialist ideas** of the past. It is time for emotion AI proponents 支持者；拥护者 and the companies that make and market (v.) 推销；促销 these products /to cut the hype（电视、广播等中言过其实的）促销广告，促销讨论 and acknowledge /that facial muscle movements **do not map (v.)了解信息，提供信息（尤指其编排或组织方式） universally to** specific emotions. The evidence is clear that /the same emotion can accompany different facial movements /and that the same facial movements can have different (or no) emotional meaning. Variety, not uniformity, is the rule.

Example 10. 标题

> 越来越多的情绪研究人员正在更加认真地对待群体思维，并超越过去的本质主义思想。情绪人工智能的支持者以及制造和销售这些产品的公司是时候停止炒作，并承认面部肌肉运动并不能普遍映射到特定情绪。证据很清楚，相同的情绪可以伴随不同的面部动作，并且相同的面部动作可以具有不同的（或没有）

情感意义。多样性，而不是统一，才是规则。

Darwin's Expression **is best viewed 把…视为；以…看待 as** a historical text, not a definitive 最后的；决定性的；不可更改的 scientific guide. That **leads to** a deeper lesson here: Science is not truth by authority 权力；威权；当权（地位）. Science is **the quantification 定量，量化 of doubt** by repeated observation in varied contexts. Even the most exceptional 杰出的；优秀的；卓越的 scientists can be wrong. Fortunately, mistakes are part of the scientific process. They are opportunities for discovery.

Example 11. 标题

达尔文的表达最好被视为历史文本，而不是权威的科学指南。这引出了一个更深刻的教训：科学不是权威性的真理。科学是通过在不同的环境中反复观察来量化怀疑。即使是最杰出的科学家也可能是错误的。幸运的是，错误是科学过程的一部分。它们是发现的机会。

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2. Facial Expressions Do Not Reveal Emotions

Do your facial movements broadcast your emotions to other people? If you think the answer is yes, think again. This question is under contentious debate. Some experts maintain that people around the world make specific, recognizable faces that express certain emotions, such as smiling in happiness, scowling in anger and gasping with widened eyes in fear. They point to hundreds of studies that appear to demonstrate that smiles, frowns, and so on are universal facial expressions of emotion. They also often cite Charles Darwin's 1872 book The Expression of the Emotions in Man and Animals to support the claim that universal expressions evolved by natural selection.

Other scientists point to a mountain of counterevidence showing that facial movements during emotions vary too widely to be universal beacons of emotional meaning. People may smile in hatred when plotting their enemy's downfall and scowl in delight when they hear a bad pun. In Melanesian culture,

a wide-eyed gasping face is a symbol of aggression, not fear. These experts say the alleged universal expressions just represent cultural stereotypes. To be clear, both sides in the debate acknowledge that facial movements vary for a given emotion; the disagreement is about whether there is enough uniformity to detect what someone is feeling.

This debate is not just academic; the outcome has serious consequences. Today you can be turned down for a job because a so-called emotion-reading system watching you on camera applied artificial intelligence to evaluate your facial movements unfavorably during an interview. In a U.S. court of law, a judge or jury may sometimes hand down a harsher sentence, even death, if they think a defendant's face showed a lack of remorse. Children in preschools across the country are taught to recognize smiles as happiness, scowls as anger and other expressive stereotypes from books, games and posters of disembodied faces. And for children on the autism spectrum, some of whom have difficulty perceiving emotion in others, these teachings do not translate to better communication.

A preponderance of evidence shows that Darwin was wrong, and his mistake was a doozy. In real life, people express a given emotion with tremendous variability. In anger, for example, people in urban cultures scowl (or make some of the facial movements for a scowl) only about 35 percent of the time, according to meta-analyses of studies measuring facial movement during emotion. Scowls are also not specific to anger because people scowl for other reasons, such as when they are concentrating or when they have gas. The same tremendous variation occurs for every emotion studied—and for every other measure that purportedly tells us about someone's emotional state, whether it's their physiology, voice or brain activity.

Emotion AI systems, therefore, do not detect emotions. … there was no objective way to confirm what, if anything, the anonymous people in the videos were feeling in those moments.

There's also considerable evidence that facial movements are just one signal of many in a much larger array of contextual information that our brain takes in. Show people a grimacing face in isolation, and they may perceive pain or frustration. But show the identical face on a runner crossing the finish line of a race, and the same grimace conveys triumph. The face is often a weaker signal of a person's internal state than other signals in the array.

Darwin's Expression suggests that instances of a particular emotion, such as anger, share a distinct, immutable, physical cause or state—an essence—that makes the instances similar even if they have superficial differences. Scientists have proposed a variety of essences, some of which are easily seen, such as facial movements, and others, such as complex, intertwined patterns of heart rate, breathing and body temperature, that are observed only with specialized instruments. This belief in essences, called essentialism, is compellingly intuitive. It's also pernicious because it is virtually impossible to prove that an essence doesn't exist. People who believe in essences but fail to observe them despite repeated attempts often continue to believe in them anyway. Researchers, in particular, tend to justify their belief by suggesting that tools and methods are not yet sufficient to locate the essences they seek.

A solution to this conundrum can be found in Darwin's more famous book On the Origin of Species, written 13 years before Expression. Ironically, it is celebrated for helping biology "escape the paralyzing grip of essentialism," according to heralded biologist Ernst Mayr. Before Origin was published, scholars believed that each biological species had an ideal form, created by God, with defining properties—essences—that distinguished it from all other species. Think of this as the "dog show" version of biology. In a dog show, each competitor is judged against a hypothetical ideal dog. Deviation from the ideal is considered error. Darwin's Origin proposed, radically, that a species is a vast population of varied individuals with no essence at its core. The ideal dog doesn't exist—it is a statistical summary of many diverse dogs. Variation is not error; it is a necessary ingredient for natural selection by the environment. When it came to emotions, however, Darwin fell prey to essentialism, ignoring his most important discovery.

Like a species, a given emotion such as fear, grief or elation is a vast population of varied instances. People may indeed widen their eyes and gasp in fear, but they may also scowl in fear, cry in fear, laugh in the face of fear and, in some cultures, even fall asleep in fear. There is no essence. Variation is the norm, and it is intimately linked to a person's physiology and situation, just as variation in a species is linked to the environment its members live in.

An increasing number of emotion researchers are taking population thinking more seriously and moving beyond the essentialist ideas of the past. It is time for emotion AI proponents and the companies that make and market these products to cut the hype and acknowledge that facial muscle movements do not map universally to specific emotions. The evidence is clear that the same emotion can accompany different facial movements and that the same facial movements can have different (or no) emotional meaning. Variety, not uniformity, is the rule.

Darwin's Expression is best viewed as a historical text, not a definitive scientific guide. That leads to a deeper lesson here: Science is not truth by authority. Science is the quantification of doubt by repeated observation in varied contexts. Even the most exceptional scientists can be wrong. Fortunately, mistakes are part of the scientific process. They are opportunities for discovery.