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共情与反共情的整合机制

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摘要 反共情一般指对他人的不幸感到快乐, 而对他人的正性情绪产生负性体验, 是一种个体与观察对象情绪效价相反的情绪反应. 相比探讨共情研究, 对反共情的现象、影响因素、心理机制和理论建构等相对较少. 本文从情绪的效价维度出发, 提出了基于观察者和他人情绪效价理解共情与反共情的整合理论框架, 简要总结了对二者认知加工及其脑电指标与脑网络激活的研究. 基于整合机制的框架, 预期正负效价相关的脑电成分与脑网络激活在共情和反共情情境下发生反转. 今后研究需要深入探析二者间的认知反转调节机制, 并扩展对正性情绪的共情研究.

关键词 共情, 反共情, 情绪效价, 妒忌, 幸灾乐祸, 羡慕

共情是人类情感经历和社会交互的重要成分, 是指通过观看或者想象能够感知、理解他人的处境, 能对他人的处境产生相似的情绪反应, 并对导致这种情绪状态的来源有清楚认识的一种能力[1~4]. 根据被观察者的情绪效价, 研究者将共情分为两种: 对他人正性事件的积极同感——积极共情(positive empathy)和对他人不幸事件的消极同感——消极共情(negative empathy)[5]. 共情对于个体在社会环境下的生存、交流和适应至关重要[6~8]. 通过共情, 个体能够体验与他人类似的情绪感受, 产生对他人处境的同情, 并进一步产生减轻他人痛苦的动机, 进而诱发个体的亲社会行为并抑制攻击性行为[1,9~11].

与共情相对的, 研究者又提出了反共情(counter-empathy)的概念[12,13]. 不同于共情, 反共情是个体产生与观察对象情绪效价相反的情绪反应, 既包括对他人得到正性结果时产生的负性感受, 又包含对他人遭受负性情境时产生的正性感受[14,15]. 一般认为反共情本身是一种邪恶的、不受社会所认可的情感反应, 反映了人性的阴暗面, 并与个体的反社会行为相关[16]. 但是研究者认为反共情是与竞争和进化密切相关的情绪反应, 具有一定积极意义[17]. 例如, 妒忌可促使个体增强竞争力[18], 幸灾乐祸可提升个体自尊水平[19,20], 对外群体的幸灾乐祸既增强对自身价值认同感, 又会增强个体的群体认同感[21].

共情的评估一般从两个角度考虑: 特质和状态. 对特质的测量目前已有相关量表, 例如, 被广泛使用的测量个体共情能力的人际反应量表(interpersonal relationship index, IRI)[22], 测量情绪共情的平衡情绪共情量表(balanced emotional empathy scale, BEES)[23]. 而反共情是一种很大程度上被认为灰色的心理特质, 目前还没有直接测量的量表, 但与之密切相关的有嫉妒特质量表(dispositional envy scale)[24]. 对共情和反共情的状态测量通常是通过评估个体的情绪状态, 之后比较个体情绪状态与诱发共情的他人情绪状态

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的关系, 以推断共情或反共情的发生与否. 已有研究方法既包括个体的主观评定——评价自己作为观测者看到他人处境时自己的情绪感受, 又包含个体生理心理指标的记录, 如面部肌电图[25]、脑电记录[26,27]以及磁共振扫描下的脑功能成像[14]等.

现实生活中, 个体感知他人情绪状态时所产生的情绪效价并不总是与他人的情绪效价一致, 受到个体与他人关系和社会背景等因素的影响, 是社会认知和情感评估交互作用的结果. 已有研究虽已考察这种效价一致(共情)和不一致(反共情)的现象, 但还是相对孤立地看待二者背后的发生机制. 本文将在观察者和观察对象情绪效价的框架下从不同角度回顾已有相关研究, 为研究共情和反共情提供一个双维度的整合视角.

1 共情与反共情的共同影响因素

通过对以往研究的回顾, 对共情与反共情二者的共同影响因素进行梳理.

1.1 群体认同

内外群体的认知差异建立于群体认同(group identity)之上. 诸多的群体行为与现象均和群体认同相关, 如群体偏好、种族刻板印象等[28]. 古代思想家们早已认识到内外群体在社会活动中存在的差异, 例如,《左传·成公四年》提到“非我族类, 其心必异”等观点. 个体的群体偏向会影响个体的共情和社会行为, Chen和Li[29]通过实验手段探究群体对社会偏好的影响, 发现相比于外群体成员, 当被试和内群体成员搭档时更容易做出社会利益最大化的行为: 增加47%亲善行为的同时减少93%的妒忌情绪. 个体也会在生理疼痛的共情上表现出内群体偏向. 一项对比中国被试和高加索被试的研究中, 发现个体在观看内群体面部遭受疼痛刺激时, 激活疼痛共情相关脑区前扣带回(anterior cingulate cortex, ACC)、额下回与脑岛, 而当看到外群体遭受疼痛刺激时, 与情绪共情相关的ACC激活程度显著降低, 体现群体间共情与反共情的差异[30]. 除了操控上述种族群体差异外[31], 也有研究通过操控对立球迷群体[16,32]、血缘群体[33]等差异有效诱发共情与反共情.

此外, Greitemeyer等人[34]使用美国著名富家千金好莱坞明星帕里斯·希尔顿由于酒后驾车被判入狱的新闻报道作为实验材料, 请被试阅读后主观报告自己的共情和愉悦程度, 结果发现具有竞争刻板印象(competitive stereotypes)的群体即高地位高竞争力并且低亲和力的群体容易成为幸灾乐祸的对象[35,36]. 综上, 个体对内群体的认同可以调控对内群体成员的共情和对外群体成员的反共情.

1.2 社会比较

除了上述所提具有明确群体归属的情况外, 实验室发现无明确群体归属个体间的社会比较也能影响共情与反共情的发生. 例如, 使用双人或多人游戏比赛形式诱发社会比较, 或使用与被试社会属性相近的人物材料与被试自身现状或某特定事件结果进行比较[14]影响共情与反共情. Dvash等人[37]在实验中让被试与一名电脑设置的虚拟被试进行博弈游戏并在每一轮结束后呈现二者输赢结果, 发现被试相对同伴的输赢而非绝对的输赢诱使被试产生妒忌与幸灾乐祸. Feng等人[38]的研究通过将被试在点估计任务中成绩排名并从低到高设置“一般玩家”、“中等玩家”、“超级玩家” 3个水平模拟社会阶层的划分, 被试均被告知其成绩属于“中等玩家”. 接下来的功能性磁共振成像(functional magnetic resonance imaging, fMRI)研究中, 请被试观看“一般玩家”与“超级玩家”分别接受疼痛与非疼痛刺激, 结果显示被试观看“一般玩家”接受疼痛刺激时, 前脑岛(anterior insula, AI)与前中部扣带回(anterior medial cingulate cortex, aMCC)等与疼痛共情相关脑区激活程度上升, 然而在观看“超级玩家”接受疼痛刺激时这两个脑区激活程度显著下降, 证明共情水平受到社会阶层差异的影响.

值得注意的是, 在零和博弈中, 由于自我与他人得失捆绑, 因此个体情绪的产生究竟源自相对得失还是绝对得失有所混淆, 前者可视为共情或反共情, 而后者不可. 因此, 本文所指社会比较对共情与反共情的影响仅存在非零和博弈场景中.

1.3 观点采择对共情效价的反转

观点采择(perspective-taking)是指个体从他人所处情境出发, 想象或推测他人观点与态度的心理过程[39], 与汉语中“设身处地”、“推己及人”等相近[40]. 观点采择作为社会功能的重要成分[41], 与社会竞争和自尊呈正相关[22]. 观点采择与共情在概念上有交叉, 但是前者仅作为一种认知加工过程, 不包含情绪成分[42], 二者在前人研究中得到重复验证与利他行

为相关[43~45]. 实验中, 研究者通常操纵被试站在目标人物立场想象或推测目标人物的所思所想, 接下来要求被试完成主观情绪评定或亲社会行为(如社会捐赠、志愿服务等), 从而考察被试对他人或外群体的态度与决策行为[46,47]. 例如, 有研究发现在观看他人的疼痛表情时, 提示被试"想象自己"或者"想象他人"时伴随与疼痛有关脑区不同程度的激活, 说明了观点采择对共情的调控[48]. 此外, 研究发现观点采择可以通过降低刻板印象偏见(stereotypic biases)和内群体偏好(in-group bias)[49], 而刻板印象偏见和内群体偏好会相应地导致个体对有偏见群体和外群体产生反共情[30,36], 据此本文推断观点采择可以降低对偏见群体和外群体个体的反共情, 对反共情具有间接调控作用.

综上, 可以总结影响共情与反共情的情境因素, 主要为群体认同、社会比较以及观点采择三大类. 目前来说, 通过一种操控手段同时诱发共情与反共情等多种社会情绪的实验方法仍有待探索. 除了上述可实验室操控因素可以影响共情与反共情, 稳定的个体因素也可能会影响. 如性别[50]、自尊[51]、社会价值取向[52]、述情障碍[53]等.

2 共情和反共情的相关脑电生理指标和脑网络

前人对共情与反共情的神经机制进行了初步探究, 脑电研究较多集中于共情方面, 部分脑成像研究则分别从共情或反共情两方面探讨脑功能模式激活的差异.

2.1 共情相关的脑电节律特征

已有研究表明, 不同情绪状态与大脑脑电中的alpha频段能量有关[54]. 而近年来的研究也表明个体的情绪共情也反映在大脑的脑电节律中. 如对音乐家观看音乐会时的脑电节律研究发现, 其共情特质与之在观看他人演奏时的大脑alpha节律相关[55]. 此外, 也有研究发现低共情个体与个体的右前额叶alpha节律的不对称性有关[56]. 除了alpha节律[57], mu节律也被发现与个体在共情任务中的表现相关[58]. 目前对于反共情的脑电节律特征研究还较少.

2.2 得失共情和反共情与FRN脑电成分

FRN(feedback related negativity)是对正负反馈敏感的脑电指标, 通常负性反馈伴随着更大的FRN波幅. 利用这一指标, 研究者探究了经济领域中的得失共情与反共情[59~62]. Itagaki和Katayama[63]采用金钱赌博任务发现, 合作情境中被试观察同伴输赢所诱发FRN与自身输赢FRN波形一致; 竞争情境中被试观察同伴(对手)赢与自身输时诱发的FRN一致, 而同伴输则与自身赢诱发FRN一致. 此外, Wei等人[64]的研究发现, 当他人的股票出现大幅度下跌时, 相比于小幅度下跌, 被试会诱发出更小的FRN; 然而, 当看到他人股票大涨时, 相比于涨幅不大会诱发出显著更大的FRN, 证实了反共情的发生.

2.3 正负效价相关脑网络与共情和反共情

为探索共情与反共情的脑机制, 大量的研究采用了脑成像的研究方法. 已有的对共情的研究多基于消极共情, 根据现有的对共情研究的回顾和元分析结果, 共情所涉及的神经网络包括AI和ACC以及与心理理论相关的镜像神经元系统(mirror neuron system, MNS)[3,65,66]. 例如, Singer等人[67]考察了个体对自己和伴侣的痛苦相关的脑区, 发现双侧脑岛和ACC在自我和伴侣经受痛苦时都被激活, 且AI及ACC都与被试的痛苦评定正相关. 这些脑区在其他相似个体接受痛苦刺激或者观看他人可能存在潜在痛苦情景的视频, 观看痛苦表情等研究中都发现激活, 证实了ACC和AI在消极共情中的重要作用[68~70]. 在对厌恶情绪的共情方面, 也有研究结果支持脑岛在其中起着重要作用[71].

此外, 一些有趣的研究对比考察了个体在消极和积极共情状态下的脑激活. 如Immordino-Yang等人[72]通过fMRI考察和怜悯与钦佩感相关的神经机制. 另外, Simon-Thomas等人[73]的研究考察了同情和骄傲有关的脑激活. 该研究发现, 为他人骄傲与自我加工有关的后内侧皮质(posterior medial cortex)脑区相关. 而重点关注反共情脑网络的研究发现, 当被试看到优于自身的社会原型产生妒忌情绪时激活背侧前扣带皮质, 但看到该社会原型遭遇不幸产生幸灾乐祸情绪时激活腹侧纹状体, 并且背侧前扣带皮层对妒忌的反应与腹侧纹状体对幸灾乐祸的反应相关[14].

综合已有研究, 本研究组总结并预期共情和反共情主要涉及负性效价相关的脑电成分或脑网络(如更负的FRN, ACC, AI的激活等)和正性效价相关的神

经指标(如更为正向的FRN或纹状体，内侧前额叶的激活等)(图1). 即当他人处于负性情绪状态时，共情激活与之相应的负性效价网络，反共情则激活奖赏网络；而当他人处于正性情绪状态时，共情激活奖赏网络，反共情则激活负性情绪相关网络[14,67,74,75].

3 共情和反共情的心理机制和理论

3.1 心理化理论

已有的研究大多表明，心理化(mentalizing)能力是共情的认知机制. Decety[6]按照发展进程提出共情包括3个成分：情绪唤起、情绪理解和情绪控制，其中情绪理解为共情心理过程发展的第二成分，大约在2~3岁成熟，该成分和心理理论有很大重叠. fMRI结果发现，述情障碍个体表现出更低的心理化能力和共情能力，并在与心理化能力相关脑区内侧前额叶有更低的激活水平[53]，这一研究结果说明，心理化能力是共情关键的心理机制. 本文认为，共情和反共情是基于心理理论对他人情绪产生的相同或相反效价的情绪反应.

3.2 应得性假设和社会比较

应得性假设常用来解释反共情的发生，即当人们认为他人的不幸是应得(deservedness)时更容易产生幸灾乐祸的情绪，而当他人的成就不应得时更容易产生嫉妒、愤怒等情绪[76]. 基于此，Brigham等人[77]的实验结果表明，这一理论假设还受社会比较的调控：当观看实验材料中优等生遭遇不幸，相比于观看普通学生遭遇不幸，无论其是否罪有应得被试均会产生更强的幸灾乐祸反应.

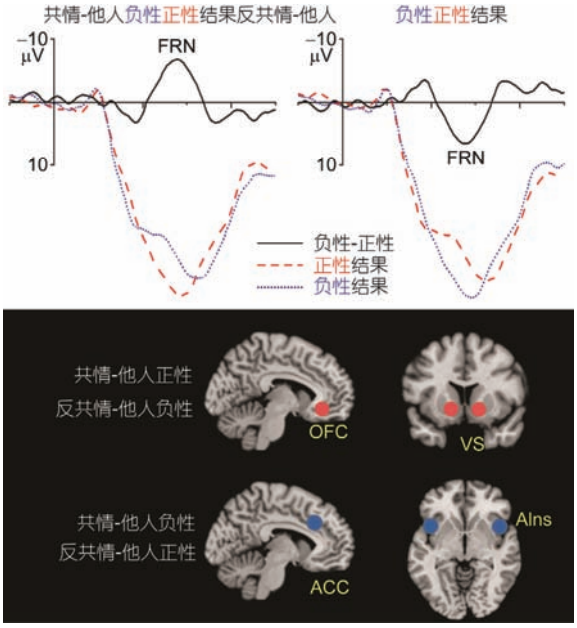

图 1 (网络版彩色)共情和反共情预期所涉及的核心脑电成分(以得失共情为例)与脑激活模式示意图

Figure 1 (Color online) Schematic diagram of ERP components (e.g. empathy for gain and loss) and brain activation patterns expected for empathy and counter-empathy

3.3 群际关系理论

群际关系是指群体与群体之间特别是本群体与其他群体之间的社会心理关系. 一般来说，本群体的人处于和谐友好的关系，而对外群体的人则抱有敌意. 在社会学中，个人常被看作是群体(如家庭、宗族、民族或国家)的一部分而存在，是其社会关系的派生物. 群体认同是指个体认识到他(或她)属于特定的社会群体，同时也认识到群体带给自己的情感和价值意义[78]. 这种群体认同产生了内群体偏向，内群体偏向是指个体对内群体持积极态度而对外群体持消极态度[79]. 这种偏向与对内群体共情和对外群体反共情的产生有直接关系[80].

3.4 共情和反共情的整合框架

综合已有研究，本文认为个体对他人产生共情和反共情主要基于个体自我认知状态(如观点采择)以及观察者和他人关系(群体认同、社会原型、社会比较等). 对共情和反共情的操控可以通过从以上几点出发. 因此，本文提出二者应在以正负效价为基础的一个框架下进行研究，充分发挥奖赏和疼痛网络以及其他与情绪效价相关的脑指标作用. 即通过操控诱发共情和反共情，同时观测奖赏和疼痛网络的激活或者正负效价相关的脑电生理指标，可更有效探讨共情和反共情的相同和不同机制，尤其有利于考察反共情中的效价反转机制(图2).

4 展望

4.1 进一步探究共情与反共情的共同心理机制

二者共同心理机制在前文已有列举并陈述. 然而近些年随着技术手段与研究方法的革新，研究结果出现了一些不同的声音. 例如，近期有研究者通过fMRI研究发现，个体的共情能力与心理化能力在行为与神经水平均彼此独立，且高情绪状态中，共情会

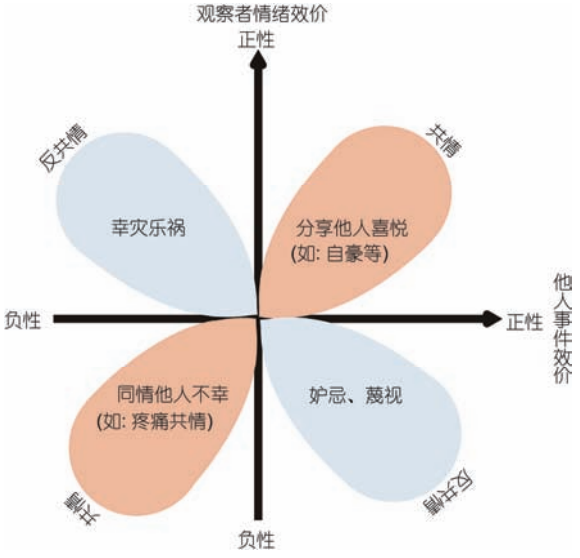

图 2 (网络版彩色)基于观察者和他人情绪/事件效价的共情和反共情整合框架

Figure 2 (Color online) Schematic diagram of empathy and counter-empathy based on valences of the observer's emotion and others' event

抑制心理化表现[81]. 此外, 相比共情反应, 反共情可能涉及更多复杂心理机制以及与环境的交互, 未来的研究可以从这一角度出发, 考察二者共同和特异性的认知机制, 深入探析二者间的认知反转调节机制, 作为临床干预与心理健康调节的重要手段.

4.2 进一步探究共情和反共情发生的生化机制

如前文所述, 实验室可通过社会原型、观点采择、社会情感偏好等操控手段实现共情和反共情的诱发. 以往研究中发现的脑电成分、脑网络激活也可以证实共情与反共情的发生. 但是对于共情与反共情生化机制的研究还相对较少. 前人研究发现催产素可以提高共情水平[82], 而Shamay-Tsoory等人[83]的研究发现, 催产素也可增加反共情水平, 即当被试赢钱的数目少于其他玩家, 催产素增加了被试的妒忌程度; 而当被试赢钱数目超过其他玩家, 催产素增强被试的幸灾乐祸程度. 这一结果说明催产素对共情和反共情具有双向上调作用. 日后可增强此方面研究, 进一步构建共情与反共情发生的"行为-生化-神经"模型, 从而有助于对反共情发生机制的理解与有利干预.

4.3 扩展积极共情的研究

正如本文所梳理, 目前对共情的研究大多集中在个体对他人消极情感共情的方面, 而对积极共情, 即对他人积极情感状态理解和分享的探讨较少. 积极共情作为一种复杂的、高度社会化的情感在生活中广泛存在, 如竞技体育中观众为在本国运动员取得优秀成绩时自身体会到的愉悦感. 研究发现, 积极共情的产生有利于提高个体幸福感、亲密感, 增加亲社会行为, 促进社会和谐[5]. 但是, 由于其情感的复杂性、状态性、以及相对于消极共情, 积极共情更难产生等原因, 目前对积极共情的产生机制, 积极共情能够带来积极社会效应的作用机理以及积极共情的反转与消极共情的反转是否存在差异等问题都还有待挖掘. 日后希望可以通过合理巧妙的实验室范式与先进的技术手段操作和观察积极共情, 从而对上述问题进行更深层次的探究[84].

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Summary for “共情与反共情的整合机制”

Integrative neurocognitive mechanism of empathy and counter-empathy

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Empathy is an essential psychological process regarding emotional experience and social interaction. According to the observers’ emotional valence, empathy can be categorized into positive empathy—positive feelings on others’ success, and negative empathy—negative feelings on others’ misfortune. Similarly, counter-empathy refers to that observers generate opposite valence of emotional responses to others’ affective state, for example, enjoy others’ misfortune or envy others’ success. Empathy has been widely studied from diverse perspectives. However, few studies have focused on the phenomena, impact factors, psychological mechanism, and theorization of counter-empathy. In this review, we briefly summarized inducing methods and three impact factors on both empathy and counter-empathy: (i) group identity—out-group or conflict group members might elicit greater counter-empathy compared with in-group members; (ii) social comparison—comparing performance between participants and other competitors could lead them to gloat over others’ loss and envy others’ gain; (iii) perspective-taking—taking others’ perspective could decrease stereotypic bias and in-group bias, both of which usually lead to counter-empathy. Therefore, we inferred perspective-taking might be a potential way to mediate or even reverse counter-empathy. Next, we reviewed the literature on psychological mechanisms, electrophysiological indices and brain networks regarding empathy and counter-empathy. Previous theories on empathy and counter-empathy were summarized as followed: (i) the Theory of Mind—mentalizing had been proved to be the key cognitive mechanism of empathy, contributing to understand others’ and own emotional states; (ii) deservedness and social comparison—when people think others’ misfortune is deserved, they would feel a sense of schadenfreude, and when they think others’ success is undeserved, they would feel envious or angry; (iii) intergroup relation—negative attitudes towards out-group members resulted from in-group bias have evolutionary meaning but also resulted in negative effects such as discrimination, stereotyping and counter-empathy. We further proposed a unified two-dimension framework based on the observer and others’ emotional valences to systematically study and understand empathy and counter-empathy. Current literatures indicate that negative emotional valence involves larger negative feedback related negativity (FRN) and activation in brain regions such as anterior cingulate cortex (ACC) and anterior insula (AI). Positive emotional valence involves smaller or no FRN and activation in brain regions such as ventral striatum (VS) and medial prefrontal cortex (mPFC). Under such an integrative framework, we predicted that brain networks of positive and negative valences would be activated in an opposite manner for empathy and counter-empathy situations. When others’ feelings are negative, empathy activates negative emotion brain networks, whereas counter-empathy activates reward brain networks; on the other hand, when others’ feelings are positive, empathy activates reward brain networks, whereas counter-empathy activates negative emotion brain networks. We proposed that future studies need to further examine the reversal mechanism of empathy and counter-empathy. Moreover, research in the future should expand to the other areas of the framework and especially fill in the gap on empathy of others’ positive affect.

empathy, counter-empathy, emotional valence, envy, gloat, admire

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