Chapter 1

Space Travels and Empathy: A New Area of Educational Intervention

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Additional information is available at the end of the chapter

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Abstract

Empathy is a relevant factor which the astronauts must own to face with long missions. In fact, the absence of this can be a cause of a fail mission. Due to the fact space projects involve a great invest, the way of developing empathy on crew and the teaching of strategies is a priority. For all this, the main goal of this paper was to analyze the current situation of the research on empathy concerning space travels. The specific objectives were (a) to find out how this issue and other psychological variables were related to astronauts and space travels and (b) to propose aspects for the design of an educational program to encourage people to solve social problems and develop social skills. For that, a review was made by using diferent databases and diferent resources by studying several variables related to empathy and long-duration space missions. Findings show that the psychological variables will be specially relevant in future missions and space colonization, as for instance, on Mars or the Moon. Conclusions can be useful to design educational programs to train crew members and control mission personnel on empathy and problem solving.

Keywords: empathy, astronaut selection, space travel, coexistence, space psychology

1. Introduction

Empathy can be defined as the ability to understand other people, both their feelings and their points of view [1]. This multidimensional view of social capabilities is also involved in space flight. While technology plays a key role in a mission, how to solve and prevent problems by human beings is also relevant. Therefore, it is necessary to consider other variables such as expectations, prior knowledge, the intrinsic and extrinsic motivations, learning styles,

coping strategy problems, algorithms for problem solving, how to resolve conflicts, as well as the ability to put yourself in the perspective of another person, among others. Space travel is going to become very important today. The world became interested in space watching other planets and stars as an escape route to perpetuate the human condition and spread their deoxyribonucleic acid (DNA), new economic opportunities, or tourism for the simple desire to excel. So, space psychology is becoming more popular nowadays [2].

Although the concept of empathy has been widely developed on educational field, it has not happened the same on special contexts. There has been an approach to study how people behave under extreme stress and special contexts such as on captivity, an expedition to the Arctic, experiments on artificial biospheres on small places on small spaces with other people, or even on space stations. However, the number of studies is smaller than on education, for example. Obviously, neither the conditions nor the cost is the same. Coming back to the issue, empathy is crucial to carry out long space missions, and in this chapter, these aspects will be developed. Besides, a series of limitations on studies about space travels have been found: the lack of subjects to study, no control groups, and difficulty to compare tasks within different studies [3].

In this line, psychological and cultural factors should be studied in the same way as physicists do, particularly for long-duration missions (e.g., Mars) [4]. There are different studies which shed light on how psychological aspects are involved on space travels. Due to that, it will be interesting and necessary to unify all of them to create a "corpus" of knowledge. This could be described as a branch of knowledge called "space psychology." Several psychological variables must be considered to understand the adaptation of the astronaut in a mission such as affiliation motive, satisfaction, occupational success, aggressiveness, cooperation, conformity, and so on. It can depend on sociodemographic variables such as nationality or culture [5], as it will be shown during the chapter.

Psychological variables associated to personal on Earth must be considered as well. Historically speaking, the figure of Von Braun, a leather in his field, must be reminded. Ernst Stuhlinger (as cited in Ref. [6]) describes him as a person with superior intelligence, a person with the ability to make the team proud of themselves and participate in debates, and a person who is talkative and good at designing machines. To understand the social moment which caused the arrival of human being to the Moon, the same authors refer to the concept of astrosociological study. It involves the existence of determined social factors which contribute to the space race: social motivation, money, competition between countries, and so on.

Having said that, the main aim of this chapter was to analyze the current situation of the study of empathy and other psychological variables concerning space travels. The specific objectives were (a) to find out the current situation of the issue concerning social skills, coexistence, empathy, and other psychological variables related to astronauts and space travels and (b) to propose key aspects for the design of an educational program to encourage people to solve social problems and develop social skills. For that, a review was made by using different databases and resources to get as many studies as possible (e.g., Web of Science, ScienceDirect, and Google Academic, mainly), by using descriptors such as "space psychology," "empathy," and "social skills."

In this chapter, it will begin by describing the concept of empathy and extreme environments. Next, the characteristics of a long-term mission and what is meant by "safe days" will be

developed. After this, the effects of prolonged exposure to outer space as well as various psychological variables such as gender, culture, or type of work will be explored. Then, various countermeasures that can be carried out to improve the psychological aspects of workers will be discussed. Lastly, basic aspects, which should be considered to improve empathy, coexistence, and social relations before, during, and after the mission in a global and multidimensional program, will be exposed. For all this, this paper pretends to be a reflection on what kind of psychological variables can explain the reality of space race and how to improve the coexistence on space throughout the design of educational programs.

2. Empathy and coexistence in extreme environments

2.1. Empathy and coexistence

A first approach to the concept of empathy in English was studied by Edward Titchener, by using the German term "einfühlung" in order to mean "feeling into" [1]. The same author describes the concept as the social and cognitive ability to understand the feelings of the rest [1]. Empathy is a key piece for coexistence, and it is difficult to define it due to the complex relationship which may keep with other abstract concepts such as morality. Empathy and morality may be related to each other. Due to the fact which seems to be that empathy can address or influence morality, it has been proposed to use other determined terms such as "emotional sharing" or "affective perspective taking" [7]. It is of paramount importance because it involves cultural issues that can influence on the expression of more or less empathy.

Social skills on twenty-first century require a series of aspects as Hesse, Care, Buder, Sassenberg, and Griffin (2015) claim (as cited in Ref. [8]). Concretely, the task is seen like a process in which action, interaction, and task completion are involved. Within social regulation aspects, negotiation, self-evaluation, and memory are found. The authors also expose some task regulations including resource management, tolerance for both ambiguity and tension, organization to be able to make the problem analysis, and setting goals. With this model, it is possible to create knowledge throughout knowledge acquisition, setting relationships, rules, hypothesis, and solutions. All these ideas involve both social and cognitive aspects [8]. Regarding the development of certain abilities, those people with "poor behavioral regulation skills," "poor language skills," and other characteristics are more likely to be less adapt and with less social outcomes [9]. Thus, the researchers emphasize the need for intervening both on language development and social skills since an early moment.

Finally, concerning crew members, Suedfeld, Brcic, and Legkaia (2009) (as cited in Ref. [10]) claim that the main coping strategy among astronauts is social support. So, it is possible to highlight the group living, coexistence, and harmony as variables closely related to the success of the mission.

2.2. Extreme and unusual environments

Harrison, Clearwater, and McKay (1991) (as cited in Ref. [10]) describe how the ICEs (Isolated and Confined Environments) are a way to study extreme conditions of living. These communities

must share privacy and space in EUEs (Extreme and Unusual Environments). These environments can be lethal, as for instance, undersea habitats, nuclear submarines, Antarctic stations, and so on. In this line, the environment in which the astronauts operate has a certain similarity with other tiny spaces such as nuclear submarines [11]. Psychological adaptation to confinement situation throughout a study on isolation chambers highlights the need for taking into account which coping strategies that are put in place to deal with this situation, since, by definition, people will be subjected to high levels of stress [12].

Before going to explore Mars with humans, the own planet has been used for analyzing how the stress will influence on them. For this reason, different places have been chosen to recreate the conditions of a mission to another planet and, more concretely, how to stay on it once they have arrived. On Earth, there are weird and difficult regions to live—and survive—and thanks to that, it is possible to simulate an exploration [13]. The 105-day study represents a pilot study before a higher experiment. It was a previous research before the Mars-500 Project—the duration was eventually 520 days in that case. Having said that, its results interestingly add a little description about the habitat where crew members were confined: the place contained both living and laboratory areas. To make the experiment more real, there was a communication delay of 40 min as in a real mission on Mars. It included even a mock-up of the Mars surface for recreating geological tasks of astronaut. The crew was composed of a commander, a sports physiologist, a mechanical engineer, a medical doctor, and a pilot [14].

Recently, the psychosocial variables of space flight associated to aging have also been studied. According to this review, extreme conditions such as those associated with space flight can, to a greater or lesser degree, affect to health. The researchers raised several questions such as whether it was possible to learn to enjoy the confinement situation or extract positive experiences. However, the questions are beyond a simple analysis of the ability of adaptation [10].

Obviously, it is not the same study on Earth than on space. Real situations in outer space lead to different results in some psychological variables compared to results obtained in simulated confinement situations or on planet Earth. In this line, changes in mood or perceived social climate in space crews in comparison with other simulation environments such as isolation chambers or bases in Antarctic have not been found. Scientists describe a possible explanation of the fact that in a real situation in space, the crew must be constantly attentive to aspects related to their survival, and there is a real danger. The same researchers claim it is not possible to ensure that astronauts will not have psychosocial problems in a long-term mission (e.g., Mars) when boredom, monotony, and greater autonomy conditions are present [4], being the ISS as a great habitat to study them [4]. There is no doubt that real environments can result more useful, though previous studies in “unreal conditions” are absolutely necessary to be prepared to face with conflicts and unpredictable situations. Actually, the “big” question is how confined people will be able to create a common culture and fix morale problems [10]. In this line, the way to manage social problems and conflicts is closely related to empathy which is the core of this chapter.

3. Astronaut psychology in long-duration missions

"Astronaut" is one of the main and more famous words used around the world, but it is not the one. The own name of the concept of "astronaut" depends on the culture and the country (e.g., astronaut in USA, cosmonaut in Russia, taikonaut in China, and so on). In the future, the name may be modified depending on the functions which are involved (for instance, commercial or exploration ending) and on social, legal, and ethical implications [15]. In this chapter, the concept of "astronaut" will be used to embrace different names, meanings and nationalities in general terms, to make the development of content easier. Having made this reflection, it is time to describe long-duration space missions.

3.1. Long-term missions

First, it must be considered that there is a substantial difference between orbit missions and deep space ones: the feeling of support. Astronauts have got visual contact with the Earth, and it is possible to send help in a determined case. However, long-duration exploratory missions such as on Mars will not have these attractive conditions. Crew members will be physically alone [16]. Due to the fact that it is very difficult to set up real missions of long-term space trips, most of the studies analyze several factors involve in simulations or short-term missions and treat to extrapolate to the situation of the long-duration space travel. Therefore, analogy is the key to understand this field of study and predict what could happen [17].

Accurately, the relevance of psychosocial issues in a long-duration expedition to Mars will be even higher than now. On this trip, psychological, cultural, personal, and psychiatric effects on the astronauts are expected to be obvious and present. The need for fostering this kind of reviews is logical due to the fact that there are a small number of studies related to long and far expeditions, while there is more information on near-Earth missions. There is paucity knowledge about how long-duration space missions might affect psychological issues among astronauts [3]. Unknown stressors are supposed to appear during long missions. Curiously, some scientists suggest that the effects will be both negative and positive [18].

3.1.1. Autonomy in space travels

Now, it is time to study how the rise of autonomy can influence on long-duration space missions in real situations. The concept of autonomy applied for space travel has also been studied carefully. So, there are several and evident differences between short and long missions. In the first case, crew has got rigid schedules and an individualized support by mission control. However, in the second case, free time takes on a greater role. Therefore, longer missions will lead to greater autonomy for the astronaut, without so many short deadlines [19].

Coming back to the mock mission in Mars for 105 days, during the first 10 weeks, the level of autonomy of the six men was low, while during the last 5 weeks, the level was higher. In the last situation, crews could plan their own work. Weekly, both mission control and crew members completed a battery of questionnaires about psychological issues. The results shed light on how

the autonomy conditions affect the mood and performance at both groups. During the period of high autonomy, the objectives of the mission were achieved, there were no negative effects, and mood was better. Nonetheless, the personnel of mission control lived the situations with more anxiety due to the uncertainty derived from unknowing exactly what crew members were going to do [14]. Obviously, the autonomy of future astronauts in long-duration missions is expected to be higher [19]. Meanwhile, social experiments in real situation like in ISS will be useful [14].

3.1.2. Monotony: the enemy at home

There is a serious problem in outer space: boredom [10]. Traditional space missions, due to the duration, have been very workload with little monotony. In contrast, long-duration space missions involve long period of time for spare time, leisure, and monotony [16].

The lack of meaningful activities evokes monotony which is harmful to psychological health. The way to avoid it is to modify the environment, leave time to practice meaningful activities, and invest time on cultivating an artificial garden to connect with the nature [10]. In conclusion, monotony and habitability must be studied, and the information derived from it must be used for designing better conditions and introducing countermeasures [16].

3.2. "Safe days"

Astronauts may suffer from uncertainty from space radiation exposure. During space missions, crew members are exposed to particles charged of energy which can penetrate inside the cells and modify DNA. This is related to an increased risk of cancer. For this reason, the knowledge of this fact is relevant not only for designing new protections against radiation (such as a double shield) but also for keeping a psychological balance during the mission. In this line, there is a concept used to express the period when levels of uncertainty and risk are considered acceptable: "safe days." It involves several difficult situations, not only those produced by radiation [20].

Initially, the estimation of safe days was up to 900–1200 days (by studying the solar activities which is the main source of radiation). However, the number of safe days seems to depend on the type of statistical analysis. Specifically, when up to 95% confidence levels are applied, the account of days is reduced until 300–400 days [20]. To get an idea of the time that astronauts are in space, it is necessary to resort to a review, according to which, already in 2014, there had been more than 300 space missions. If all the days that the astronauts have been in maneuvers were added, the number would ascend to more than 32,000 days. In addition, two thirds were by astronauts who were in the space more than 21 days [3]. So, the time of exposure to radiation was considerable. For all these facts, it is necessary to carry on with research on safe days to get a better and safe space flight [20].

4. Psychological variables associated to space travel

Psychological aspects must be taken into account in long-term missions to avoid negative effects [21]. Variables involve in a mission depend on the duration. So, short missions require

high physics and technical demanding, while long missions need people with a balanced mood since conflicts are more likely to occur [10].

Personality is one of the variables which is studied in the process of selection to become an astronaut [22]. The figure of the leader has also been analyzed. It seems that the way to manage and describe the role of the leader depends on the size of the crew. In consequence, in groups of two or three astronauts, each one is specialized in a field and assumes the leadership in their field. There is no exactly a typical leader. Besides, the relationships must be care because the cohesion is essential, overall by considering that the rest of humans are far. However, when the group is bigger, the social structure changes, and the traditional figure of leadership emerges [4].

Regarding the process of selection, social desirability has covered a great relevance due to the fact that the candidates may give a better image of themselves, and this affects the results of the tests [22]. On the other side, but within the recruitment, there is a meaning difference between a past negative psychology and a modern positive psychology about selection of astronaut. Specifically, people were selected for going out in space by prioritizing those skills aimed at achieving the mission though the astronaut could be less sociable. In this situation, it was important to select personnel with the ability to stay alone for a long time, with "excessive interpersonal intimacy." However, according to this author, a positive psychology orientation pays attention to other characteristics such as familiarity, ability to improvisation, how aspirant faces with social problems, camaraderie, and the sense of belonging to the group [23].

Once the relevance of considering the psychological variables in the astronaut selection process has been introduced, the main physical and psychological effects of space on the subject will be studied.

4.1. Physical and psychological effects of space

To understand the psychological variables is necessary to have a global vision of the situation. For this reason, not only the working time and activity of the crew have been studied but also their breaks [13]. So, astronauts suffer from some symptoms like the elderly. In addition, many symptoms are eventually mediated by stress, and reactions can appear such as depression, anxiety, or social withdrawal [10]. In another vein, there is no evidence of changing on visual space perception. Contrary to the previous ideas of the researchers, a long period of confinement (e.g., Mars-500 Project) does not cause significant changes in three-dimensional perception [24]. In another vein, as was stated in defining the concept of "safe days"[20], traveling to Mars requires to go out from the magnetic field of the Earth and make a long-duration trip in which crew will be expose to radiation [20]. Thus, it is primordial to reduce the risks to the brain during the missions [3].

Stress is another factor to consider. This cannot be considered wrong if it helps people develop new strategies and behaviors to adapt to the environment. Sometimes, living under extraordinary circumstances evokes the development of resilience and the establishment of a real and consistent social support network [10]. The own process of training can be stressful. Military has studied how to adapt to stressors in centrifuge training. The results show that there are

elements such as the lightproof cockpit which can be a source of stress. The power of the pedal design as a stressor was studied too. There is no doubt that ergonomics play a relevant role in order to generate stress [25]. Other psychological variables have been studied to know how stress affects performance. So, it is known that anxiety levels evoked by the exposition to G forces throughout a centrifuge acceleration which can interfere with the ability to finish the training. However, anxiousness response can be taught and learned by coaching [26]. Anyway, it is possible to teach coping strategies to face with personal and work problems by considering that they are depending on sociodemographic variables such as gender and the kind of job [27].

Sleep problems such as insomnia or a lack of sleep quality are also common among space travelers. They are caused by bad conditions and the own body: from interruptions, lack of privacy, noise, and social conflicts to circadian rhythms. The given solution is related to make an arrangement or try to foster the environmental conditions [10].

Concerning gravity, transitioning from a low-to-high state, can cause syncope due to the fact that the blood goes from the head to the feet. To combat this situation, it seems that a good idea is to stimulate the cardiovascular system through simple mental stressors. Thus, loss of consciousness or even syncope may be delayed giving margin to be able to ask for help and receive assistance. To analyze deeply the effect of mental stressors on cardiovascular system, an Aerobatic Single-Engine Cap-10B plane was used. It is a plane capable to replicate hyper- and hypogravity conditions throughout parabolic flights. The results showed that cardiovascular activity can be increased during the performance of stressful tasks that require a cognitive activation of the subject (e.g., mental calculation). Thanks to this, it is possible to rise and stimulate the cardiovascular activity and prevent blood from flowing out of the head sharply. This last study shows the importance of training astronauts to develop cognitive skills to use in space [28].

Radiation, less gravity, and the lack of feelings of risk are some limitations of the mock missions. However, there will be a common aspect between simulations and real conditions: the huge number of variables to measure. In consequence, the interference between different studies running simultaneously will be inevitable. In some occasions, there have been at least 90 protocols working at the same time [13].

Eventually, it is also possible to find positive effects from the space flight experience such as more self-confidence, better quality of relationships, spirituality, and a higher respect of nature and Earth [10]. In fact, the analysis of the oral histories of 97 astronauts showed more positive than negative results across flight phases (before, during, and after) [29].

4.2. Sex and gender

To succeed on space travels throughout human missions, sex and gender must be considered in the equation. There are different risks and effects of the space depending on the sex and gender. So, more cases of visual impairment on males after a space flight in comparison with female astronauts have been found. However, it is also true that the number of female astronauts in long-duration missions is rather minor. In another vein, orthostatic intolerance is

more common in females [30]. Moreover, differences regarding sex and safe days are found. So, the number of safe days for females was 300 and 400 days for males [20]. In the future, sex and gender variables will play an important role on personalized space medicine [30]. Researchers have made a resume of the main differences by sex and gender in several aspects (e.g., cardiovascular, immunologic, or behavioral adaptation to space flight) by finding the following data collected in **Table 1**.

4.3. Nationality and culture

Astronauts are considered different due to their nationality when they are in outer space. They feel that they are treated in a different way by depending on the nation instead of focusing on their abilities or personal factors. It is more usual when they are sharing a multicultural space in a mission, according to Suedfeld, Wilk, and Cassel (2011) (as cited in Ref. [10]). Differences can be observed even in the language used to refer the rest of coworkers. For example, when people are grouped by nationality, they create an in-group feeling and tell "us" for talking about themselves and "them" for the rest. Besides, relationships and contacts between ones and others are distant [31].

Cultural differences were also observed by comparing Europeans and Russians when the level of autonomy was increased. An interesting effect was that the Russians felt more work pressure in high-autonomy situation than the Europeans. So, the Russians reported a rise in work pressure regarding the European. On the contrary, the Europeans increased their negative dysphoric mood [14, 19]. It has also been found that differences between the motivations of astronauts belong to the National Aeronautics and Space Administration (NASA) and the Russian Federal Space Agency (FKA), being the first ones more motivated for the need for power [5].

Heterogeneity of the group can be a negative aspect for crew cohesion. In this line, a research in isolated situation was realized by analyzing variables such as culture and gender. The studied simulation was developed in hermetic chambers. The different groups in the study were composed of people (both male and female) from several places: Russia, Germany, Canada, Austria, and Japan. A conflict with physical force and some social incidents must be highlighted. The tensions between the groups caused the closure of the hatch so certain experiment had to be postponed at least for a month [31].

	Male astronauts	**Female astronauts**
They are more likely to	Suffer from hearing loss Suffer from calcium oxalate kidney stones Have visual impairment Have a worse immune response	Have a better immune response Suffer from struvite kidney stone Suffer from orthostatic intolerance Suffer from urinary tract infections
They are less likely to	Suffer from urinary tract infections	Suffer from hearing loss

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Table 1. Main differences between male and female astronauts (adapted from Ref. [30]).

From these results, it is derived that the cultural variables influence in some way in the perception of the subjects. Even the way to cope with problems and face with stress may be different depending on national characteristics. This may reflect different trainings and ways to operate between astronauts and cosmonauts [4]. Thanks to this kind of studies, it is possible to understand with more detail intergroup dynamics [31].

4.4. Workstation

Not only are there studies about astronauts. The mission control personnel is also an object of investigation. In this regard, less negative emotions and more vigor and innovation among crew members of the ISS than among ground control personnel have been found. The results may relate to different personalities depending on the job. Moreover, the own fact of staying at outer space may be a source of excitation [4]. In Mars 2013 study, a high motivation and less health problems were found in comparison with control mission [17]. Besides, during "Mars-500 Project," it was found that the conflicts between crew members and ground control personnel were five times more frequent than among people in confinement [13]. Taking up the issue of autonomy, when these levels increased for crew members and they could set goals and organize their timetable, it was lived positively by them. In fact, results showed a greater mood, creativity, and the achievement of the aims. However, ground control personnel lived the rise of the autonomy of the crew members with uncertainty and confusion [19].

The knowledge exposed is relevant for the selection, training, and teaching of countermeasures for future long-duration space exploration missions [13]. For all these reasons, it is necessary to enhance prosocial attitudes. In fact, empathy is strongly related to prosocial behavior [32]. The following will discuss what measures can be implemented.

5. Countermeasures to improve psychological balance among astronauts

A series of psychosocial countermeasures can be carried out to avoid or reduce the negative effects of ICEs such as spare time; hobbies, to modify the environment (light, temperature, etc…); sleep hygiene; autonomy over clothing or schedules, to encourage a culture of group; and funny activities [10]. These practical tips can be structured and used in different fields as it is set forth in **Table 2** [4].

The design of "bull sessions" to manage psychosocial problems in group to make up decisions and propose collective solutions is also recommended. Besides, it is strongly recommended to teach these social strategies since the beginning, before starting the trip. This kind of activities should be taught to all the members implied in the mission what involves both crew members and mission control personnel [4]. In another vein, it must be highlighted that there are an unbalanced number of male and female astronauts. In the face of future long-term missions, it will be paramount to introduce mixed crews to ensure multi-diversity. Other recommendations given by the same experts are to foster those studies with a perspective of gender, to take into account individual issues, and so on [30].

Aspect	Advices or countermeasures depending on different variables	
Selection	Crew members	Count on people with ability to solve social problems in a fast way, personal maturity, and psychological balance
	Commander	Leadership, ability to support the crew, and capacity to consider the psychological aspects of the crew (overall if they are from different nations and cultures)
Training	What to teach	How to manage social conflicts throughout "prelaunch psychosocial educational training"
	How to teach	Addressing the training for the crew and ground control personnel, where appropriate, all together
	Specific topics to train	Time effects, leadership, cultural issues, and crew members-mission control personnel relationship
	Goals	Detecting problems and fixing them (e.g., throughout the learning of problem-solving strategies)
Monitoring and support	What must both professions learn	To understand the problem of the other To know what stressors can be influencing on their coworkers to be able to see the other points of view (the knowledge about other tasks and jobs is required)
	How to do it	Giving the group time to interact each other and discuss and communicate ideas Throughout group dynamics Using a computer-based training during the mission
	When to do it	During prelaunch and mission
	Family	To encourage families to play an active role To help astronauts adapt the routine

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Table 2. Countermeasures to improve psychological issues among astronauts and increase mission probability of success (adapted from Ref. [4]).

Furthermore, having analyzed psychosocial variables in the Shuttle-Mir program, researchers expose a series of measures to consider. Concretely, they claim that a common language is essential, and it should be a requirement to be selected. Of course, the compatibility between the members of the crew should be looked for. All people should be trained in interpersonal conflicts, ways to support the rest, individual strategies and joint activities, how to manage spare time, how to discuss the play rolled by the family, and how to get the readaptation of the crew once they have come back home [21].

Recommendations will be useful for astronauts and future candidates for long missions in order to establish a Moon base or on Mars [33]. Disagreements and social problems are a reality in outer space. Fortunately, as it will be exposed in the next section, it is possible to prevent from conflicts throughout the training of social skills [34].

6. Aspects to include in an educational program on space travels

Once the main psychological issues related to space psychology and isolated situations have been treated, it is time to make a proposal of aspects to include in an educational program to develop social skills, emphasizing empathy, and to enhance the coexistence within crew members and between them and mission control personnel (see **Table 3**). The development of empathy is a way to improve social and functional behaviors [32]. The program has been designed under an educational perspective. Social abilities can be taught, and, for this reason, it is possible to train them.

To design educational programs, individual differences must be considered. For example, different levels of self-esteem have been found between men and women [35]. There are also differences in coping strategies [27]. As it can be seen in **Table 3**, there are two main goals. Concerning specific goals (by receiver) are to understand other viewpoints (all), to respect other cultures (all), to know a protocol to act in case of conflict (crew and control), to use a minimum of social skills to ensure coexistence (crew and control), and to support relatives and help them solve social problems (families).

Regarding aspects to train, a key concept to develop is creativity since this ability is involved in the process of solving problems [36]. Another relevant content is life satisfaction. It seems to exist a relationship between social problem solving and life satisfaction. Concretely, it has been found that life satisfaction is an antecedent of social problem solving. So, it is logical to conclude that if one is improved, the other will get better. For this reason, both concepts must be considered to include it within future prevention and intervention of educational programs [37]. In another vein, topics such as decision making and awareness are also relevant to future Mars travels [2]. Besides, it must be highlighted that the group dynamics are involved in all the phases and practically among the different collective professionals (see **Table 4**). Depending on the moment, it is possible to propose a series of activities to get the goals of the program.

Concerning the activities, online discussion can be used for encouraging people to interact with each other [38]. This aspect is more important during the mission. Regarding technological resources, digital storytelling (DST) is a method which can be useful for fostering relationships and assimilation of norms and culture [39]. Mobile technology has been successfully used for teaching behavioral skills [40]. Besides, in the educational field, discussion activities by using images have been very useful for developing leadership, confidence, self-control, problem-solving skills, and emotional intelligence [41]. It would not be difficult to extrapolate this methodology to space psychology. In addition, the application of a language protocol for using very specific conflicts could avoid misunderstanding.

Programs should set up not only before the mission but also during the travel to resolve social problems and avoid conflicts [13]. It has been showed on research that the motivation of the astronaut can change at three stages of their expedition, finding differences from preflight to in-flight stages [5]. For this reason, the application of different group dynamics depending on the phase (including the post-flight and readaptation) is essential [33]. The other aspect to

Main points	Development	
Need analysis	Social conflicts can cause the failure of the mission or hinder the correct relationships among coworkers	
Receiver	Crew members, mission control personnel, and families of astronauts	
Goal and specific goals	• To prevent from conflicts between all the agents involved • To intervene when the problem takes place	
Content or topics	Empathy, coexistence, creativity, prosocial behavior, problem-solving, leadership, viewpoints, relaxing techniques, proactive and retroactive strategies, social skills, self-esteem, self-concept, assertiveness, coping strategies, spare time, life satisfaction, decision-making, awareness emotion, and performance	
Activities	Personal interviews, monitoring, peer tutoring, working in small groups (e.g., size like the crew), working in big groups, and so on (see **Table 4**)	
Methodology	Human resources	Expert in space and educational issues
	Material and technological resources	Tests completed either on paper or digitally. The second type is essentially important during the mission to save space to carry out
	Temporalization	Prelaunch, during the mission and post-mission
	Physical space	Prelaunch and post-mission on Earth
	Grouping	Initial group explanation
Evaluation	Initial	Pretest to draw a baseline
	Continuous assessment	During all the program by adjusting, especially in the mission situation, during the trip itself, where unforeseen conflicts may arise
	Final	Posttest, tracing and monitoring

Table 3. Structure of a proposal of program for developing empathy and coexistence on space travels.

consider is the arousal. The ability to feel relaxed is critical to face with social problems and conflicts [34]. Astronauts must learn how to increase their activity and when to decrease it by looking for the optimum operating point.

It is important to create a feeling of group. Astronauts can develop a feeling of "intragroup" and "out-group" during the mission and feel displacement as a defensive mechanism to face with dysphoria. Concretely, they can consider that they do not have enough support from people outside of the group [4]. These feelings must be detected and worked. Finally, regarding the abilities of the trainer, the development of empathy of the expert with people who will be taught is essential to make the relationship work. So, it will be easier to teach them healthy strategies and skills [42].

Phase	Activities
Prelaunch	Role playing, discussion groups, brainstorming, change of roles (crew members-control mission personnel), emotional recognition dynamics, digital storytelling, case study, social problem-solving games, and discussion of dilemmas
During the mission	Monitoring, peer tutoring, discussion groups, online discussions, change of roles (within crew members), rotational leadership, boredom prevention, setting an ephemeris—to create a common culture, mediation, and protocol of interaction and to create the figure of justice of peace
Post-mission	Strategies for readaptation, new routines, and feedback activities

Table 4. Activities depending on the phase of the mission.

7. Conclusion

In this chapter, the implications of the concept of empathy on isolated situations and the main psychological variables involve in the space travel have been analyzed. Besides, countermeasures have also been proposed. Finally, a proposal has been made to design educational programs for training empathy and other psychological aspects. It has been seen that empathy is a key aspect of the human space flight, and due to the negative consequences that can cause its absence, it is necessary to improve it. Common goals and culture should also be fostered [31].

The space race must be seen as a whole, including both technical and psychosocial aspects [2]. It is about a gear where everything must be embedded, a synergetic system where its elements are interconnected: crew members, control mission personnel, families, government, space agencies, economy of the country, political issues, etc. Social aspects are also involved. Society must want to go further. So, when the Apollo program was developed, there was a determined social context [6]. Maybe, a new space age is beginning. The humanity seems to want to go to Mars, the number of documentaries and research increases, private enterprise is also interested, and there are various projects for the next years.

Regarding the new challenges in the near future, the longer the mission lasts, the more problems arise [11]. And, there is no doubt that space agencies (e.g., NASA, European Space Agency (ESA), FKA, Japan Aerospace Exploration Agency (JAXA), and Chinese National Space Administration (CNSA), among others) are worried about the astronauts' health, and they keep them as healthy as possible. The solution to improve security will go through a multiaxial approach [2]. Maybe, when establishing the first permanent colonies on the Moon or on Mars, strong feelings of inbreeding may arise. The way to manage these feelings and the relationship that are maintained, within the *extraterrestrial* groups and between them and the Earth, will be key to maintain the commercial and peace relations. All this must be worked from the beginning, laying the foundations of appropriate social relations. The larger the

crew, the more complex the relationships will be, becoming a microcosm, that is, a reduced scale society where coexistence is equal to survival. This reflection can be useful for both future public (e.g., NASA or ESA) and private (SpaceX) initiatives. Certainly, this will be a new area of educational intervention. Moreover, the inclusion in the educational system of concepts such as space travel and coexistence in isolated situations may be a reality in the future. For that, the design of a curriculum for students or a concrete subject would help the youngest assimilate space concepts, as a previous training, from early ages.

Concerning limitations, this article is a literature review. Therefore, the conclusions are based on the theoretical level. In another vein, one implicit goal of this chapter is to foster the collaboration with practitioner and researcher of aeronautics and space fields. A multidisciplinary approach is the key to the advancement of science. My specialty's education (including social skills, the field of behavior, and coping strategies) is contributed to develop in this new academic area, and this article is sprout and pathbreaking review in such area. It must be assumed that there are principles in learning that are common so that each area of knowledge can and should contribute its grain of sand.

To conclude, further research is needed to understand how empathy works [32]. Aerospace psychology can benefit from information from other branches of psychology such as education to train the crew. A mission can be affected by the lack of social skills. Human error may lead to a cancelation of the mission, loss of human lives, high economic costs, etc. For this, future mission should consider these factors in the selection. In another vein, the number of articles based on the chosen issue is low so that it is necessary to encourage scientific community to depth on this point. Therefore, educational programs to encourage candidates to improve their competences, by considering both gender and nationality, will be required. These programs will be able to set up not only before the mission but also during the travel to resolve social problems and avoid conflicts.

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References

[1] Lockwood PL. The anatomy of empathy: Vicarious experience and disorders of social cognition. Behavioural Brain Research. 2016;**311**:255-266. DOI: 10.1016/j.bbr.2016.05.048

[2] De La Torre GG, Van Baarsen B, Ferlazzo F, et al. Future perspectives on space psychology: Recommendations on psychosocial and neurobehavioural aspects of human spaceflight. Acta Astronautica. 2012;**81**(2):587-599. DOI: 10.1016/j.actaastro.2012.08.013

[3] Strangman GE, Sipes W, Beven G. Human cognitive performance in spaceflight and analogue environments. Aviation, Space, and Environmental Medicine. 2014;**85**(10):1033-1048. DOI: 10.3357/ASEM.3961.2014

[4] Kanas NA, Salnitskiy VP, Ritsher JB, et al. Psychosocial interactions during ISS missions. Acta Astronautica. 2007;**60**(4):329-335. DOI: 10.1016/j.actaastro.2006.09.001

[5] Brcic J. Motivational profile of astronauts at the International Space Station. Acta Astronautica. 2010;**67**(9-10):1110-1115. DOI: 10.1016/j.actaastro.2010.06.044

[6] Lundquist CA, Tarter D, Coleman A. Identifying sociological factors for the success of space exploration. Physics Procedia. 2011;**20**:331-337. DOI: 10.1016/j.phpro.2011.08.030

[7] Decety J, Cowell JM. The complex relation between morality and empathy. Trends in Cognitive Sciences. 2014;**18**(7):337-339. DOI: 10.1016/j.tics.2014.04.008

[8] Care E, Scoular C, Griffin P. Assessment of collaborative problem solving in education environments. Applied Measurement in Education. 2016;**29**(4):250-264. DOI: 10.1080/08957347.2016.1209204

[9] Aro T, Eklund K, Nurmi J, Poikkeus A. Early language and behavioral regulation skills as predictors of social outcomes. Journal of Speech, Language, and Hearing Research 2015;**55**:395-408. DOI: 10.1044/1092-4388(2011/10-0245)b

[10] Suedfeld P, Halliwell JE, Rank AD, Buckley ND. Psychosocial aspects of spaceflight and aging. REACH-Reviews in Human Space Exploration. 2016;**2**(2):24-29. DOI: 10.1016/j.reach.2016.11.001

[11] Sauer J, Wastell DG, Hockey GRJ. Skill maintenance in extended spaceflight: A human factors analysis of space and analogue work environments. Acta Astronautica. 1996;**39**(8):579-587. DOI: 10.1016/S0094-5765(97)00006-4

[12] Lapierre J, Bouchard S, Martin T, Perreault M. Transcultural group performance in extreme environment: Issues, concepts and emerging theory. Acta Astronautica. 2009;**64**(11):1304-1313. DOI: 10.1016/j.actaastro.2009.01.002

[13] Basner M, Dinges DF, Mollicone DJ, et al. Psychological and behavioral changes during confinement in a 520-day simulated interplanetary mission to mars. PLoS One. 2014;**9**(3):1-10. DOI: 10.1371/journal.pone.0093298

[14] Kanas N, Harris M, Neylan T, et al. High versus low crewmember autonomy during a 105-day Mars simulation mission. Acta Astronautica. 2011;**69**(5):240-244. DOI: 10.1016/j.actaastro.2011.04.014

[15] Langston S, Pell SJ. What is in a name? Perceived identity, classification, philosophy, and implied duty of the "astronaut". Acta Astronautica 2015;**115**:185-194. DOI: 10.1016/j.actaastro.2015.05.028

[16] Peldszus R, Dalke H, Pretlove S, Welch C. The perfect boring situation—Addressing the experience of monotony during crewed deep space missions through habitability design. Acta Astronautica. 2014;**94**(1):262-276. DOI: 10.1016/j.actaastro.2013.04.024

[17] Luger TJ, Stadler A, Gorur P, et al. Medical preparedness, incidents, and group dynamics during the analog MARS2013 mission. Astrobiology. 2014;**14**(5):438-450. DOI: 10.1089/ast.2013.1128

[18] Kanas N. Psychosocial issues during an expedition to mars. Acta Astronautica 2014;**103**:73-80. DOI: 10.1016/j.actaastro.2014.06.026

[19] Kanas N, Saylor S, Harris M, et al. High versus low crewmember autonomy in space simulation environments. Acta Astronautica. 2010;**67**(7):731-738. DOI: 10.1016/j.actaastro.2010.05.009

[20] Cucinotta FA, Alp M, Rowedder B, Kim MHY. Safe days in space with acceptable uncertainty from space radiation exposure. Life Sciences in Space Research. 2015;**5**:31-38. DOI: 10.1016/j.lssr.2015.04.002

[21] Kanas N, Salnitskiy V, Grund EM, Marmar C. Lessons learned from Shuttle/Mir: Psychosocial countermeasures. Aviation, Space, and Environmental Medicine. 2002;**73**(6):607-611. https://www.researchgate.net/publication/11316816_Lessons_learned_from_ShuttleMir_Psychosocial_countermeasures. [Accessed: 02 February 2017]

[22] Sandal GM, Musson D, Helmreich RL, Gravdal L. Social desirability bias in personality testing: Implications for astronaut selection. Acta Astronautica. 2005;**57**(2):634-641. DOI: 10.1016/j.actaastro.2005.03.011

[23] Suedfeld P. Applying positive psychology in the study of extreme environments. Journal of Human Performance in Extreme Environments. 2001;**6**(1):21-25. http://www.ncbi.nlm.nih.gov/pubmed/12182194. [Accessed: 31 January 2017]

[24] Šikl R, Šimeček M. Confinement has no effect on visual space perception: The results of the Mars-500 experiment. Attention, Perception, & Psychophysics. 2014;**76**(2):438-451. DOI: 10.3758/s13414-013-0594-y

[25] Wang J, Lin PC, Li SC. Measuring the ability of military aircrews to adapt to perceived stressors when undergoing centrifuge training. Journal of Applied Measurement. 2014;15(2):200-212. http://europepmc.org/abstract/med/24950537. [Accessed: 22 May 2017]

[26] Mulcahy RA, Blue RS, Vardiman JL, Mathers CH, Castleberry TL, Vanderploeg JM. Subject anxiety and psychological considerations for centrifuge-simulated suborbital spaceflight. Aviation, Space, and Environmental Medicine. 2014;**85**(8):847-851. DOI: 10.3357/ASEM.3974.2014

[27] Martínez JP. Cómo se defiende el profesorado de secundaria del estrés: Burnout y estrategias de afrontamiento. Revista de Psicología del Trabajo y de las Organizaciones. 2015;**31**(1):1-9. DOI: 10.1016/j.rpto.2015.02.001

[28] Osborne JR, Alonsopérez Lanza MV, Desclaux DF, et al. Effect of mental arithmetic on heart rate responses during parabolic flights: The barcelona Zero-G challenge. Microgravity Science and Technology. 2014;**26**(1):11-16. DOI: 10.1007/s12217-014-9365-1

[29] Suedfeld P, Brcic J. Resolution of psychosocial crises associated with flying in space. Acta Astronautica. 2011;**69**(1-2):24-29. DOI: 10.1016/j.actaastro.2011.02.011

[30] Mark S, Scott GBI, Donoviel DB, et al. The impact of sex and gender on adaptation to space: Executive summary. Journal of Women's Health. 2014;**23**(11):941-947. DOI: 10.1089/jwh.2014.4914

[31] Gushin V, Pustynnikova JM, Smirnova TM. Interrelations between the small isolated groups with homogeneous and heterogeneous composition (PDF Download Available). Human Performance in Extreme Environments. 2001;**6**(1):26-33. https://www.researchgate.net/publication/11205581_Interrelations_between_the_small_isolated_groups_with_homogeneous_and_heterogeneous_composition. [Accessed: 02 February 2017]

[32] Lockwood PL, Seara-Cardoso A, Viding E. Emotion regulation moderates the association between empathy and prosocial behavior. Perc M, ed. PLoS One. 2014;**9**(5):e96555. DOI: 10.1371/journal.pone.0096555

[33] Kanas N, Sandal G, Boyd JE, et al. Psychology and culture during long-duration space missions. Acta Astronautica. 2009;**64**(7):659-677. DOI: 10.1016/j.actaastro.2008.12.005

[34] Martínez JP, Gómez F. Programa Educativo Para La Ganancia de Aptitudes Sociales Y Orientadoras (PEGASO). Murcia, Spain: Consejería de Educación, Cultura y Universidades. Secretaría General. Servicio de Publicaciones y Estadística; 2015. http://www.carm.es/web/integra.servlets.BlobNoContenido?IDCONTENIDO=14360&TABLA=PUBLICACIONES_TEXTO&IDTIPO=246&RASTRO=c943$m4331,4330&CAMPOCLAVE=IDTEXTO&VALORCLAVE=9385&CAMPOIMAGEN=TEXTO&ARCHIVO=Texto+Completo+1+Programa+Educativo+para+la+Ganancia+de+Apti

[35] Martínez JP. Are teachers sad? A study in self-esteem and depressive symptoms in Education. In: Gázquez JJ, Molero M del M, Pérez-Fuentes M del C, Simón M del M, Barragán AB, Martos Á, editors. Almería, Spain: ASUNIVEP; 2016. pp. 247-254. http://www.formacionasunivep.com/cice2016/files/LIBRO INVESTIGACION.pdf

[36] Hamza TS, Hassan DK. Consequential creativity. International Journal of Technology and Design Education. 2016;**26**(4):587-612. DOI: 10.1007/s10798-015-9321-4

[37] Jiang X, Lyons MD, Huebner ES. An examination of the reciprocal relations between life satisfaction and social problem solving in early adolescents. Journal of Adolescence. 2016;**53**:141-151. DOI: 10.1016/j.adolescence.2016.09.004

[38] Sun Y, Gao F. Comparing the use of a social annotation tool and a threaded discussion forum to support online discussions. The Internet and Higher Education. 2017;**32**:72-79. DOI: 10.1016/j.iheduc.2016.10.001

[39] Del Moral Perez ME, Villalustre Martinez L. Social and creative skills promoted with the collaborative design of digital storytelling in the classroom. Digital Education Review. 2016;(30):30-52. https://apps.webofknowledge.com/full_record.do?product=UA&search_mode=GeneralSearch&qid=2&SID=4CzTmUqSGLGYnHP2cmz&page=4&doc=34. [Accessed: 05 February 2017]

[40] Haydon T, Musti-Rao S, McCune A, et al. Using video modeling and mobile technology to teach social skills. Intervention in School and Clinic. 2017;**52**(3):154-162. DOI: 10.1177/1053451216644828

[41] Kim N. The effect of children's discussion activities using picture books on their leadership and emotional intelligence. Journal of Children's Literature Studies. 2016;**17**(3):73-94. https://apps.webofknowledge.com/full_record.do?product=UA&search_mode=GeneralSearch&qid=4&SID=4CzTmUqSGLGYnHP2cmz&page=1&doc=10. [Accessed 05 February 2017]

[42] Spencer AC. Stories as gift: Patient narratives and the development of empathy. Journal of Genetic Counseling. 2016;**25**(4):687-690. DOI: 10.1007/s10897-015-9886-9

Chapter 2

Neuroimaging Research on Empathy and Shared Neural Networks

Emily Kilroy and Lisa Aziz-Zadeh

Additional information is available at the end of the chapter

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Abstract

Understanding other people's feelings and perspectives is an important part of effective social communication and interaction. Empathy is the phenomenon that enables us to infer the feelings of others and understand their mental states. It aids in social learning and bonding and is thought to be impaired in individuals with social deficits like schizophrenia and autism spectrum disorder (ASD). Advances in neuroimaging technology have allowed social neuroscientists to study brain activity during this complex social process. A growing body of empathy literature demonstrates that multiple brain regions are involved in empathy. Current theories propose that empathy is enabled through the activation of various dynamic neural networks, each made up of several different regions. These networks respond differently depending on specific contexts and available information. This chapter reviews the networks involved in empathy and highlights the current theories and limitations of empathy research.

Keywords: empathy, functional magnetic resonance imaging, mentalizing, mirror neuron system, pain matrix

1. Introduction

Empathy is a complex social phenomenon that broadly refers to the ability to understand and share the feelings of another person. Unlike sympathy, which only requires someone to understand another person's feelings on an intellectual level, empathy is unique in that it is also thought to involve knowing someone's feelings by connecting with those same feelings in one's self. In other words, empathy means having a first-person understanding or emotional response to someone else's experience. This shared understanding can occur in various

ways by employing different emotional and cognitive mechanisms such as affect sharing, simulation, imagination, and theory of mind [1]. Researchers categorize subtypes of empathy as cognitive empathy or emotional empathy. Cognitive empathy refers to perspective taking, while emotional or affective empathy refers to shared emotions and feelings. It is thought that the capacity to empathize requires the activation of different neural networks depending on the type of empathy evoked. Despite the rapid growth in empathy research since Robert Vischer's first English translation of the word, einfühlung, meaning "in-feeling" or "feeling-into," over 150 years ago [2], there are still many questions that remain regarding the neuroscience of the phenomenon.

Social and behavioral psychologists have conducted the majority of empathy research in the last few decades [3]. With the advent of modern neuroimaging techniques, researchers now have the ability to study the neural processes involved in empathy and how different factors such as individual traits, situational context, and even personal experience modulate related neural network activity. State-of-the-art neuroimaging methods and techniques such as functional magnetic resonance imaging (fMRI) allow scientists to investigate how these networks activate when sharing the feelings of another person in controlled experimental environments. Functional MRI studies typically measure blood-oxygen-level dependent (BOLD) changes that occur as a result of precisely timed experimental designs that elicit empathy in participants. These designs allow scientists to compare BOLD responses during different subtypes of empathy and compare them to control conditions that do not require empathy. A link between empathy and brain regions is most often found by statistically correlating the BOLD response evoked in an empathy task with individual differences in empathy traits as measured by questionnaires. The present chapter highlights current neuroimaging research on neural networks thought to enable empathy and the attributes that modulate network activation. Specifically, this chapter will cover prevailing theories of empathy, how it is generated, i.e., through "shared" or "mirroring" networks, and the limitations of current study designs.

2. "Shared" brain networks of empathy

The first question to ask when investigating the neuroscience of empathy is "What parts of the brain are active when people are acting empathically or feeling empathy?" Core brain regions thought to underlie empathy include regions within the "pain matrix," namely the anterior insula (AI) and the middle anterior cingulate cortex (mACC) [4–6]. In numerous fMRI studies, these core regions respond both when experiencing first-hand as well as when observing in others an emotional response or feeling (mostly conducted with the feeling of pain [7, 8]). Therefore, it is thought that we understand the emotions and perspectives of others by utilizing and processing in brain regions that are active both when we ourselves have a sensory, affective, or bodily experience, and when someone else has a similar experience [9]. This theory has become known as the "Shared Network Hypothesis" [10]. For this reason, the AI and mACC, as well as other brain areas that have similar properties, are often referred to as "shared" or sometimes "mirroring" brain regions. Indeed, the activation of many shared brain networks, such as the mirror neuron system (MNS) as well as the pain matrix and some

emotion-related brain regions, has been linked either directly or indirectly to the genesis of empathy. These shared networks have repeatedly been proposed to underlie the mechanisms that allow people to mentally "share" the feelings of another. The sections below discuss previous and current research related to empathy across these networks.

2.1. Empathy and mirror neuron system (MNS)

Neurons in motor regions of the brain that respond both to action execution and action observation are called mirror neurons. Mirror neurons were first discovered in macaque monkey's F5 premotor region in the 1990s when scientists noticed the same neuron responded not only when the monkey was performing an action but also when he observing another person performing a similar action (e.g., cracking a peanut or watching someone else crack a peanut). In humans, the mirror neuron system (MNS), first proposed by Gallese et al. [11], is a network of brain areas that respond similarly (see **Figure 1**) [11]. It is composed of the inferior frontal gyrus (IFG; thought to be homologous to F5 area in the macaque monkey), in addition to sensorimotor regions (i.e., the lower part of the precentral gyrus, the rostral part of the inferior parietal lobule). Many models of the MNS suggest that mirror neurons provide a mechanism for automatically translating the actions of others onto our own motor system. In other words,

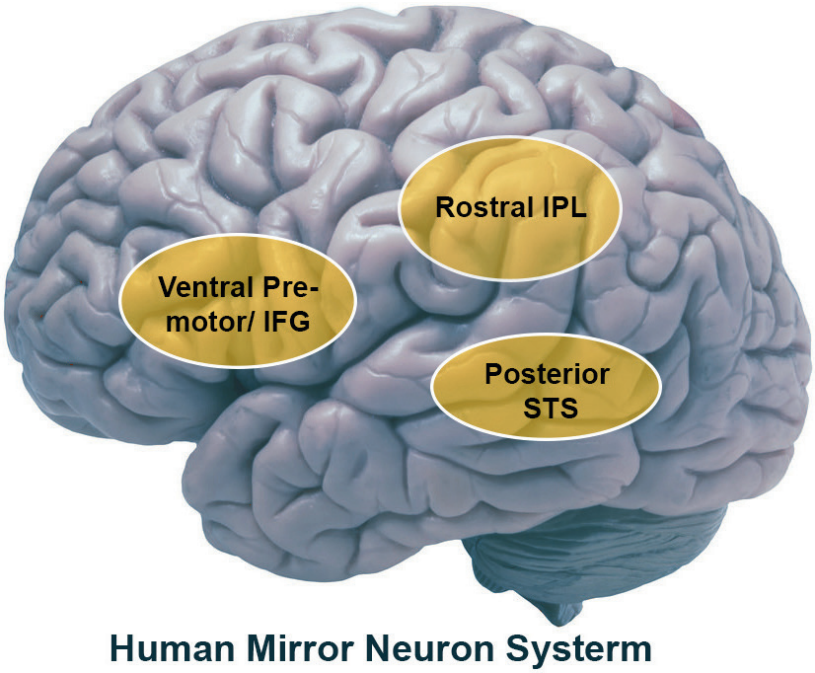

Figure 1. Human mirror neuron on system (MNS). Lateral view of brain with frontal (ventral pre-motor and IFG) and parietal (rostral IPL) labels of the mirror neuron system in addition to the superior temporal sulcus. IFG = inferior frontal gyrus; IPL = inferior parietal lobule; STS = superior temporal sulcus.

whenever one perceives an action of another person, we automatically and covertly "mirror" those actions onto our motor system. Thus, we might understand other people's actions and intentions by covertly simulating them in our motor regions as if we were performing the action ourselves. This form of putting ourselves in someone else's shoes and taking their perspective is thought to be an important component of cognitive empathy [12]. Indeed, several studies have related empathic traits to neural activity in the MNS, indicating that individuals who have higher activity in the MNS also score higher on cognitive aspects of empathy [13–18]. Thus, the MNS may be one neural network involved in perspective taking and cognitive aspects of empathy.

2.2. Empathy and the pain matrix

Other neural networks are thought to process emotional aspects of empathy. One network that has been indicated to be involved in empathizing with pain experienced by others is called the pain matrix. The pain matrix includes the insula, anterior and middle cingulate gyrus, and somatosensory cortices (SI and SII) [6, 19–21]. Interestingly, like the MNS, the pain matrix is activated both when one experiences pain oneself and when observing another person experiencing pain. In a seminal paper in this area, researchers found significant activity in the pain matrix both when a participant in an MRI scanner experienced pain as well as when someone close to them was experiencing pain (**Figure 2**) [6]. Because this network responds so strongly to both physical pain and to processing the pain of others, the AI and mACC are thought to be involved in processing affective components of empathy [6, 8, 22]. The activation of the core regions of the pain matrix for processing self and others' pain is consistent across numerous studies implementing a variety of experimental paradigms, suggesting that pain mirroring, and perhaps empathy itself, can be investigated with high reliability by social neuroscience [8].

However, some critics have proposed that shared representations for self and other in the pain matrix might not be related to empathy, but instead merely reflect an evolutionary response carried out to prepare a motor response as a self-protection mechanism when a threat is detected [23]. For example, watching someone grimace in pain from stepping on a nail may activate our pain and sensorimotor network to prepare the actions needed to avoid experiencing pain ourselves (i.e., stepping away from the nail). Furthermore, while there is a consensus regarding the core regions in the brain that process pain, there are discrepancies on when and how input from the pain matrix is linked to empathy. Disparate results in pain research, such as the engagement of primary and secondary somatosensory cortices during the observation of pain [6], suggest that the pain matrix as a whole may not respond to all types of pain and that it depends on the contextual environments (see sections below for more detail). The same is true for the recruitment of the MNS during cognitive empathy. One common explanation for aberrant findings in empathy research is that there are distinct networks or routes for different types of empathy. Many research groups are using new imaging paradigms and methodologies to explore this dynamic network theory. More research is needed to better understand how the different circuits involved during pain empathy interact and modulation by context.

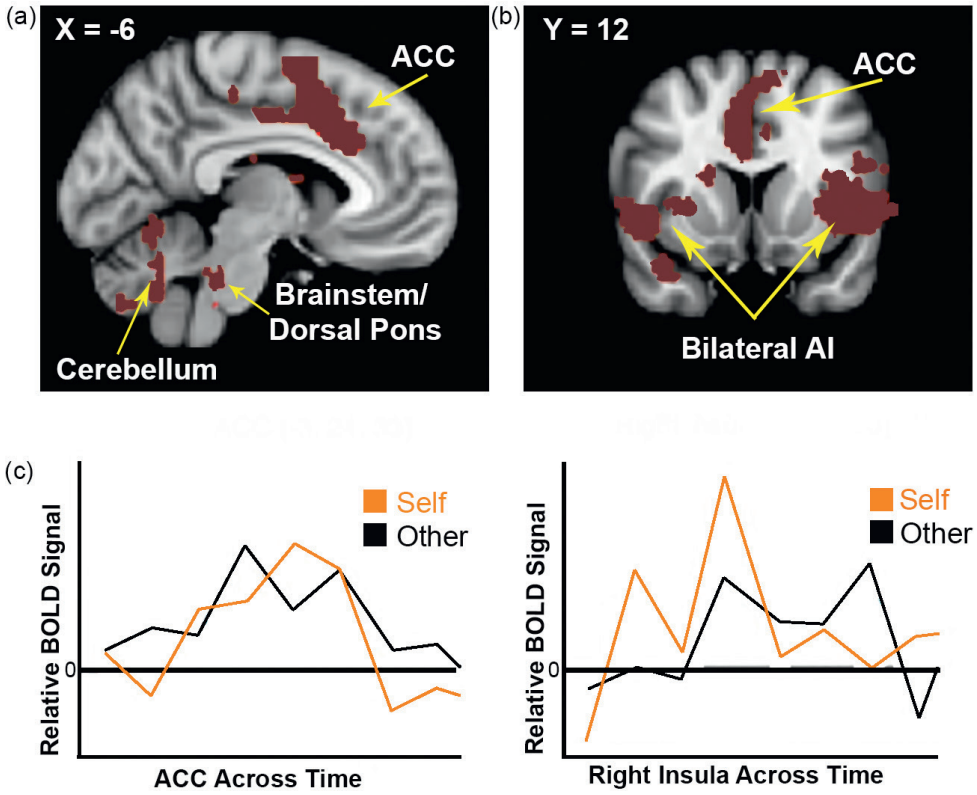

Figure 2. Shared network for self and others' pain. Modified figure from Singer et al. [6]. (a) and (b) illustrate location of increased BOLD signal in brain regions that were significantly active for pain over no pain in both the self and others' conditions as reported by Singer et al. Regions of increased activation to pain in both self and others' conditions included the ACC, cerebellum, brainstem/dorsal pons, left insula, and right anterior insula. (c) Graphs representing the time courses extracted from areas of peak activation in the ACC and right insula for pain greater than no pain in both the self (gray) and other (black) conditions. ACC = anterior cingulate cortex.

2.3. Mentalizing network and cognitive empathy

Mentalizing is a term sometimes used interchangeably with theory of mind (ToM), both typically refer to the cognitive processes involved in understanding the intentions, desires, or beliefs of another person. The "mentalizing network" involves brain regions that have been shown to be activated when someone thinks about another person's mental states. They include the precuneus, ventral parts of medial prefrontal cortex, posterior superior temporal cortex, temporal parietal junction (TPJ), and the temporal poles [24–26]. For example, this network is active when participants are asked to think about the intentions of another person's emotions or actions. Some researchers restrict the definition of mentalizing to only cognitive perspectives when the observer is consciously mentalizing about someone's mental state [27];

however, others include the immediate, automatic, and covert cognitive inference about other people's emotional states [28]. Neuroimaging studies on ToM often do not make this distinction and typically ask participants to consciously mentalize. However, some neuroimaging research distinguishes between cognitive and affective aspects of ToM. Cognitive ToM is required to understand what someone else may be thinking and affective ToM is required to understand how someone might feel given a specific situation. While cognitive and affective components of ToM may be necessary for a fully functioning ToM, individual regions have been shown to play prominent roles in either cognitive (ventral medial prefrontal cortex) or affective (ventral medial frontal lobe) perspective taking [29].

2.4. Emotion-related brain regions and affective empathy

Affective empathy is thought to elicit emotion-related brain regions that are involved in the processing of feelings and emotions. Emotion-related brain regions commonly include the hypothalamus, hippocampus, amygdala, insula, and the cingulate, as well the ventral and medial sectors of the prefrontal cortices [30]. Activity in the insula and amygdala are commonly known to be involved in affective processing and are thought to be related to affective aspects of empathy along with regions of the MNS (i.e., IFG) [31–33]. In particular, the anterior insula, by processing information from the viscera that arise when emotions occur, may be necessary for interpreting body states as affective feelings [34]. Notably, Antonio Damasio et al. have argued that changes in body states and homeostasis (i.e., emotions) are felt as feelings through the representation of these emotions in the brain [35]. So when you feel nervous, this may be because your brain (anterior insula along with other brain areas such as regions of the brainstem) has noticed a quickening in your heartbeat, a clenching in your gut, sweat being produced, and has interpreted that change in body state as nervousness [34]. Damasio has also posited that a physical stimulus is not necessary to experience feelings and that they can be simulated in brain maps when you are empathizing [36]. Indeed, more recent research has been suggested that the insula is involved in integrating subjective feelings, uncertainty, and empathy [10, 37].

2.5. Interactions between different neural networks

Recent models of empathy propose that our capacity to understand the affective and cognitive states of others is enabled by different mechanisms or "routes" [9, 38, 39]. Broadly, one route is through the simulating or mirroring networks (e.g., MNS, pain matrix), and the other, the ToM/mentalizing networks (see **Figure 3**). Simultaneous core emotion-related brain regions (ACC and AI) and MNS brain regions are thought to be elicited when empathy is triggered in response to various sensory stimuli such as viewing body parts in pain or hearing action sounds [3, 13, 40]. During conscious intention understanding of others, as well as self-referential thought, it is thought that a second route for empathy is elicited through the theory of mind or "mentalizing" brain regions. Processing in this network enables sharing other's states based upon one's previous experiences and knowledge (see Ref. [41] for review), and it might be particularly important in situations in which externally provided sensory information about the other's mental state is lacking. For example, the mentalizing network might be

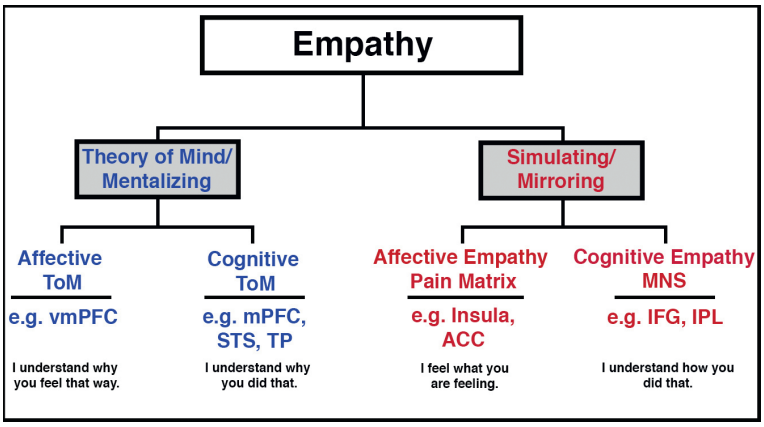

Figure 3. Empathy network. A modified illustration of Dvash and Shamay-Tsoory [42] model of two main systems for empathy, cognitive empathy, and emotional empathy. In addition to Dvash and Shamy-Tsorry's theory of mind (ToM) distinction between cognitive ToM (taking the cognitive perspective of another) and affective ToM (building a theory over what another person feels), a distinction between two types of simulation/mirroring processes is presented. Affective empathy, via regions in the pain matrix/emotional brain regions, refers to the simulation of another's feelings and emotions in oneself is distinguished from cognitive empathy, via regions in the Mirror Neuron System that refers to the simulation of another person's actions. ACC = anterior cingulate cortex; IFG= Inferior Frontal Gyrus; IPL= inferior parietal lobule; mPFC = medial prefrontal cortex; STS = superior temporal sulcus; ToM = theory of mind; TP = temporal parietal; vmPFC = ventromedial prefrontal cortex.

utilized when you listen to lyrics in a pop-song and empathize with the song writer's experience, or when viewing a painting or photo without knowing the events that led up to the event being captured and empathize with the artist or the subject matter.

A similar pattern of dynamic interaction has been proposed for empathic responses in the pain matrix. It is thought that sensory-discriminative attributes (i.e., location, quality, and intensity) and autonomic-affective attributes (i.e., perceived unpleasantness) of a painful experience are coded differently in the network. Singer's research group demonstrated that only self-pain activated contralateral SI, SII/posterior insula, and caudal ACC, while rostral ACC and AI activation enables both self and others' pain. The authors suggest that eliciting different networks for self and others' representations contributes to the better understanding of the subjective feelings. However, contradicting evidence from more recent studies has demonstrated that somatosensory (SI/SII) regions are engaged during both self and others' processing [21, 43]. These disparate findings may be due to the variations in stimulus representation methodology, which again can trigger different neural routes. Viewing body parts in pain, for example, tends to elicit somatosensory regions compared to more abstract pain cues where body parts are not shown [8, 44]. A study that compares both bodily and psychological pain may help detangle and test a multi-route theory.

Empathetic routes are found to exist at even the smallest levels of distinction. There is evidence of distinct empathic routes that are sensitive to emotions at the level of valence. Since pain elicits a robust response in the brain, empathy research has been skewed to favor pain

and negative emotions. It is less known how empathy varies across different emotions in general, and how it is linked to valence (positive or negative feelings). One fMRI study by the Singer group [45] compared pleasant and unpleasant touch in attempts to understand mechanisms for empathy between different valenced emotions. The group found distinct neural pathways for positive and negative valence that were involved in processing empathy. The first-hand and vicarious experience of pleasant touch (e.g., a flower) commonly recruited the medial orbitofrontal cortex (mOFC), while unpleasant stimulation (e.g., rubber maggots) led to shared activation in the right fronto-insular cortex. These findings suggest that different subsystems are engaged when one is mentally sharing positive compared to negative sensations of others. Taken together, these observations indicate that empathy is a dynamic process that elicits multiple subnetworks. Ultimately, further exploration of different emotions in different contexts will bring us closer to understanding the nuances of how empathy is elicited and the subsequent role it plays in influencing one's experience of the mental and emotional states of others. It will also contribute to our understanding of clinical disorders that are characterized by deficits in social processing, such as psychopathy and ASD.

3. Individual differences and empathy in shared brain networks

As discussed above, substantial evidence supports (at least in part) the shared network theory of empathy. However, it is less clear how individual's traits and past experiences modulate these systems. While empathic neural responses often occur automatically, they can also be modulated tremendously by various individual and situational factors [9, 39, 46–49]. Previous experience with particular actions as well as contextual factors, such as the other belonging to an ingroup or outgroup, can influence network activity as well as which subnetworks are invoked. The sections below discuss experience and individual differences related to empathy in the MNS and pain matrix.

3.1. The mirror neuron system

To understand how individual differences relate to neural activity in the MNS, scientists compare brain responses to different actions or changes to the context of an action to individual differences in traits and behavior. For example, one approach has been to try to understand how familiarity with actions modulates MNS activation and empathic processing. One common paradigm is to compare neural activity when observing a familiar action to that of a novel action and correlate the neural activity for each action type to individual differences in trait measures of empathy. Empirical evidence from these studies suggests that while the MNS is engaged for both types of actions (familiar and novel), BOLD signal increases when watching visually or physically familiar actions compared to unfamiliar actions [12, 50–58]. These studies support the general premise of a "like me" hypothesis of action observation function. The "like-me" hypothesis states that we engage with actions that are in our own motor repertoire, or more visually familiar, the more the MNS is engaged [56]. This has led some to propose that experience-driven simulation mechanisms modulate the MNS [54].

On the other hand, some research demonstrates that MNS activity increases when observing novel actions such as a robot dancing [59] or those who are less similar to one's self (e.g., someone with a different cultural or racial background) [60]. Furthermore, one study found that observing a novel limb (the residual limb of an amputee) elicited more activity than observing a typical hand action. However, this effect was modulated by experience with residual limbs [57]. In addition, in that study, it was found that the more empathic participants were, the more they engage their parietal motor regions when viewing the novel limb, but that this correlation was not significant once they were familiarized with the novel limb. This study underscores the notion that regions of the MNS are modulated by familiarity, experience, and individual differences in empathy traits.

3.2. The pain matrix

Various individual and contextual factors modulate the pain matrix as well. Social context such as group bias has been studied in the pain matrix, and similar relationships between BOLD signals in pain-related brain regions and empathy have been found. Relationship dynamics between observer and observee, such as social status or group membership, has been reported to modulate the BOLD signal in regions of the pain matrix while observing pain in others [8–10, 22]. For example, a recent study investigating social status and empathy for pain found that activity in the pain matrix is biased toward self-perceived inferior-status individuals compared with superior-status individuals. When painful stimulation (needle from a syringe penetrating cheek) was applied to inferior-status targets, higher activation in empathy-related brain regions (AI and aMCC) was observed, whereas activity in these same regions was attenuated when observing painful stimulation applied to superior-status targets (**Figure 4**).

In another study, the pain matrix was found to activate more when pain is inflicted on someone from an individual's in-group than out-group [22]. Specifically, activity in the ACC and the insula was found to be greater when participants view pained expressions on the faces of a racial in-group member, while receiving injections to the cheek compared to activity when viewing out-group members. These findings suggest that group biases can modulate empathy and sensitivity in pain-related emotions [22]. In concordance with previous studies, Xu et al. [22] found that empathic activity is a function of individual differences. Participants who showed greater empathic neural responses to in-group members also showed stronger empathic neural responses to out-group members, highlighting the significance of individual differences empathy-related activity [22].

While several of the studies mentioned above found a relationship between activity levels in the pain matrix and empathy traits, it is unclear if activity levels reflect the depth of pain processing rather than empathic processing per se. For example, in a study by Fox et al. [62], it was found that there was more activity in the pain matrix when viewing disliked others rather than liked others. In this study, Jewish participants showed more activity in components of the pain matrix when they viewed neo-nazis in pain than when viewing neutral likable individuals in pain [62]. Given that the participants did not report feeling more empathy for the neo-nazis than the likable individuals, the authors of that study suggested that perhaps activity levels

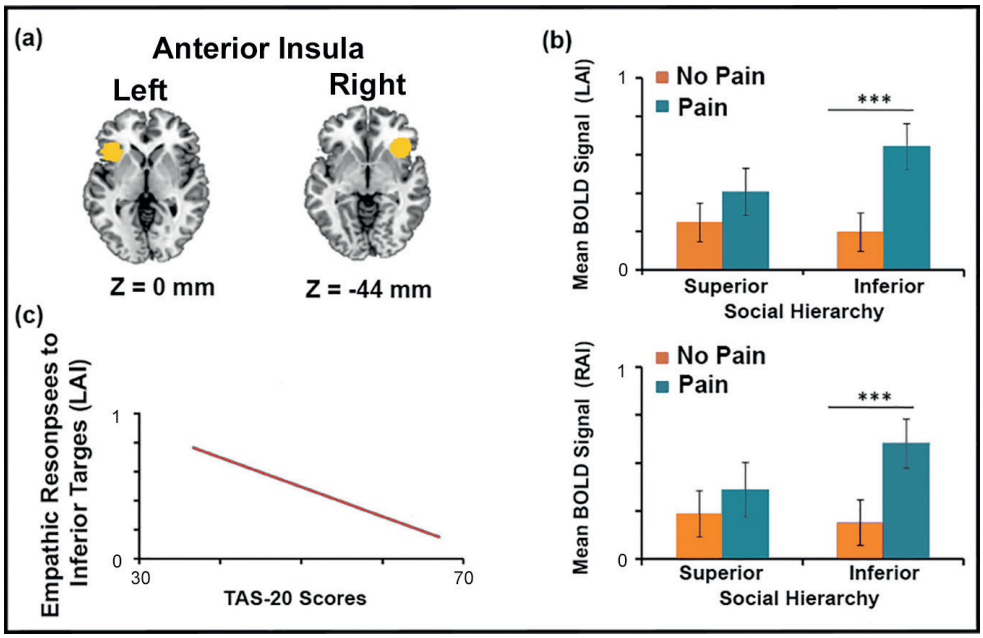

Figure 4. Anterior insula activity and pain. Modified figure from Feng et al. [61]. (a) Representation of the region of interest in the left and right anterior insula used by Feng et al. (b) Graph of mean BOLD signal extracted from the left anterior insula (L, AI) and right anterior insula (R, AI) during pain and nonpain for superior and inferior conditions (error bars indicate one standard error). (c) Graph representing the correlation between TAS-20 scores and empathic responses of the left anterior insula in response to inferior targets during pain compared to no pain.

in the pain matrix do not correspond to the degree of empathy one feels, but instead depth of processing. The authors argue in their study that it was more relevant for the Jewish participants to processes the pain level of their enemy (a neo-nazi) than that of a neutral individual, which was reflected in the increased activity the pain matrix. Thus, it might be that while activity in the pain matrix may contribute to empathic processing, it is not sufficient for empathic processing on its own.

4. Empathy research limitations

As discussed above, many questions about how, where, and when empathy is generated in the brain remain. Moving forward there are several challenges scientists have to overcome before arriving at a more complete understanding of this dynamic process. Some limitations are the result of neuroimaging techniques. It is difficult to study a complex social phenomenon such as empathy in the sterile, cold, and noisy environment of an MRI. Until a more ecologically valid way of measuring neural activity is found, it is important to keep in mind that findings in the lab may not be generalizable to real, everyday life. Study design, data analysis, and individual differences in samples are also important to consider. The discrepant findings we have examined in this chapter may, in part, be accounted for by differences in these areas. For instance,

using on measures of empathy that rely on subjective, self-reports could be problematic. One of the most commonly used empathy measure is a questionnaire called the interpersonal reactivity index (IRI; [1]). Several studies have found that the higher the participant scores on the IRI, the stronger the response in the aMCC and AI when observing the pain of others [6, 9]. Indeed, individuals who have difficulties identifying and describing their emotions (i.e., alexithymia) show attenuated activation during introspection and while empathizing with others [63, 64]. Therefore, it is very important to relate empathic traits in research participants to research findings. However, self-report measures can be problematic if participants have poor introspection and cannot accurately report on their empathic skills thus resulting in inaccurate data. Alexithymia is prevalent in approximately 10% of the general population [65] and is more common in some socially afflicted disorders such as ASD [66, 67]. Since individuals can vary in their ability to perceive emotion, it should be included as a factor when conducting empathy research, especially when studying social disorders where alexithymia is more prevalent. Understanding the differences between deficits in empathy and deficits in introspection is an important distinction. For example, the long history of research suggesting that individuals with ASD have deficits in empathy has recently been disputed by research investigating alexithymia in ASD. A recent study found that deficits in empathy were related to alexithymia and not ASD severity by comparing individuals with ASD with and without Alexithymia and a typical control group [66]. In this study, ASD individuals without alexithymia did not differ in empathy from the control group. Since ToM deficits are consistently reported in ASD, authors of the study suggest that empathy and ToM are dissociable and are part of different streams of social cognition.

On a similar note, experience and other cultural or biological biases should also be taken into consideration when reviewing empathy literature. Surprisingly, not all studies report on potential gender differences. While a few studies have reported no significant differences between males and females [8, 68], Singer et al. [10] found in men, but not in women, empathic responses are shaped by the evaluation of other people's social behavior, such as participating in fair game play [10]. Gender may potentially be a major factor for some empathy network activation and not others. Relatedly, other biological factors may account for aberrant findings. Oxytocin is a neuropeptide that has been shown to increase social understanding and emotion recognition [69] and may also play an important role in modulating empathy. One large study found that oxytocin receptors were associated with affective empathy, while a second receptor (arginine vasopressin receptor) contributed to cognitive empathy, as measured by the IRI [70]. Genetic variation in oxytocin as well as other receptors may influence empathy-related network activity [71]; therefore, future studies should examine how gender as well as hormones and gene variation modulate empathy.

In addition to individual differences, it is also crucial to note that methodological variation across neuroimaging studies can influence findings. Functional MRI data processing techniques and analysis may affect the robustness, and in some cases, the location of a significant result. For instance, recent studies have found that different segments of the AI respond to various empathic situations [8]. Findings like these require data to be explored with high spatial resolution and thus could be missed or misattributed if the data are preprocessing in such a way that these anatomical boundaries are blurred (i.e., the result of spatial smoothing). Taken together, it is important to consider empathy research in the context of its participants, paradigm, and data analysis before interpreting results.

5. Conclusions

Social neuroscience has rapidly progressed in its understanding of shared representations in the brain since the discovery of mirror neurons. There is little doubt that research on shared networks has been integral to understanding and mapping empathy in the brain; nevertheless, questions remain regarding how empathy is elicited from the myriad social and contextual situations that generate it. The most current research literature indicates that the human brain engages multiple networks when sharing emotions and perspectives of others. Moreover, these networks vary in activation based on individual differences that make each person unique. As scientists continue to study the many connections between what is perceived and what is felt, it will expand previous models of empathy from a single network engagement to more tailored context-specific network activation. This chapter has discussed how core and complementary systems that respond to self and others play a significant role in our ability to empathize. As future work continues to map empathy in the brain and ultimately improve our understanding of social cognition, we will take one step closer to understanding what makes us uniquely human.

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References

[1] Davis MH. Empathy: A Social Psychological Approach. Boulder, CO, US: Westview Press; 1994

[2] Wisp L. History of the concept of empathy. Empathy and Its Development. Book, edited by Nancy Eisenberg and Janet Strayer, Cambridge, MA: Cambridge Universtiy Press 1987;17-37

[3] Hein G, Silani G, Preuschoff K, Batson CD, Singer T. Neural responses to ingroup and outgroup members' suffering predict individual differences in costly helping. Neuron. 2010;**68**(1):149-160. DOI: 10.1016/j.neuron.2010.09.003

[4] Decety J. The neurodevelopment of empathy in humans. Developmental Neuroscience. 2010;**32**(4):257-267. DOI: 10.1159/000317771

[5] Keysers C, Gazzola V. Expanding the mirror: Vicarious activity for actions, emotions, and sensations. Current Opinion in Neurobiology. 2009;**19**(6):666-671. DOI: 10.1016/j.conb.2009.10.006

[6] Singer T, Seymour B, O'doherty J, Kaube H, Dolan RJ, Frith CD. Empathy for pain involves the affective but not sensory components of pain. Science. 2004;**303**(5661):1157-1162

[7] Fan Y, Duncan NW, de Greck M, Northoff G. Is there a core neural network in empathy? An fMRI based quantitative meta-analysis. Neuroscience & Biobehavioral Reviews. 2011;**35**(3):903-911. DOI: 10.1016/j.neubiorev.2010.10.009

[8] Lamm C, Decety J, Singer T. Meta-analytic evidence for common and distinct neural networks associated with directly experienced pain and empathy for pain. NeuroImage. 2011;**54**(3):2492-2502. DOI: 10.1016/j.neuroimage.2010.10.014

[9] Singer T, Seymour B, Doherty JPO, Stephan KE, Dolan RJ, Frith CD. Europe PMC Funders Group Empathic neural responses are modulated by the perceived fairness of others. Nature. 2006;**439**(7075):466-469. DOI: 10.1038/nature04271.Empathic

[10] Singer T, Critchley HD, Preuschoff K. A common role of insula in feelings, empathy and uncertainty. Trends in Cognitive Sciences. 2009;**13**(8):334-340. DOI: 10.1016/j.tics.2009.05.001

[11] Gallese V, Eagle MN, Migone P. Intentional attunement: Mirror neurons and the neural underpinnings of interpersonal relations. Journal of the American Psychoanalytic Association 2007;**55**(1):131-175. DOI: 10.1177/00030651070550010601

[12] Kaplan JT, Iacoboni M. Getting a grip on other minds: Mirror neurons, intention understanding, and cognitive empathy. Social Neuroscience. 2006;**1**(3-4):175-183. DOI: 10.1080/17470910600985605

[13] Gazzola V, Aziz-Zadeh L, Keysers C. Empathy and the somatotopic auditory mirror system in humans. Current Biology. 2006;**16**(18):1824-1829. DOI: 10.1016/j.cub.2006.07.072

[14] Wicker B, Keysers C, Plailly J, Royet JP, Gallese V, Rizzolatti G. Both of us disgusted in my insula: The common neural basis of seeing and feeling disgust. Neuron. 2003;**40**(3):655-664. DOI: 10.1016/S0896-6273(03)00679-2

[15] Keysers C, Wicker B, Gazzola V, Anton JL, Fogassi L, Gallese V. A touching sight: SII/PV activation during the observation and experience of touch. Neuron 2004;**42**(2):335-346. DOI: 10.1016/S0896-6273(04)00156-4

[16] Jackson PL, Meltzoff AN, Decety J. How do we perceive the pain of others? A window into the neural processes involved in empathy. NeuroImage. 2005;**24**(3):771-779. DOI: 10.1016/j.neuroimage.2004.09.006

[17] Morrison I, Lloyd D, Di Pellegrino G, Roberts N. Vicarious responses to pain in anterior cingulate cortex: Is empathy a multisensory issue? Cognitive, Affective, and Behavioral Neuroscience. 2004;**4**(2):270-278. DOI: 10.3758/CABN.4.2.270

[18] Aziz-Zadeh L, Sheng T, Gheytanchi A. Common premotor regions for the perception and production of prosody and correlations with empathy and prosodic ability. PLoS One. 2010;**5**(1). DOI: 10.1371/journal.pone.0008759

[19] Avenanti A, Bueti D, Galati G, Aglioti SM. Transcranial magnetic stimulation highlights the sensorimotor side of empathy for pain. Nature Neuroscience. 2005;**8**(7):955-960

[20] Jackson PL, Rainville P, Decety J. To what extent do we share the pain of others? Insight from the neural bases of pain empathy. Pain. 2006;**125**(1-2):5-9. DOI: 10.1016/j.pain.2006.09.013

[21] Bufalari I, Aprile T, Avenanti A, Di Russo F, Aglioti SM. Empathy for pain and touch in the human somatosensory cortex. Cerebral Cortex. 2007;**17**(11):2553-2561

[22] Xu X, Zuo X, Wang X, Han S. Do you feel my pain? Racial group membership modulates empathic neural responses. Journal of Neuroscience 2009;**29**(26):8525-8529. DOI: 10.1523/JNEUROSCI.2418-09.2009

[23] Betti V, Aglioti SM. Dynamic construction of the neural networks underpinning empathy for pain. Neuroscience and Biobehavioral Reviews. 2016;**63**(February):191-206. DOI: 10.1016/j.neubiorev.2016.02.009

[24] Raichle ME, MacLeod AM, Snyder AZ, Powers WJ, Gusnard DA, Shulman GL. A default mode of brain function. Proceedings of the National Academy of Sciences of the United States of America. 2001;**98**(2):676-682. DOI: 10.1073/pnas.98.2.676

[25] Laird AR, Eickhoff SB, Li K, Robin DA, Glahn DC, Fox PT. Investigating the functional heterogeneity of the default mode network using coordinate-based meta-analytic modeling. Journal of Neuroscience 2009;**29**(46):14496-14505. DOI: 10.1523/JNEUROSCI.4004-09.2009

[26] Schilbach L, Eickhoff SB, Rotarska-Jagiela A, Fink GR, Vogeley K. Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the "default system" of the brain. Consciousness and Cognition. 2008;**17**(2):457-467. DOI: 10.1016/j.concog.2008.03.013

[27] Hein G, Singer T. I feel how you feel but not always: The empathic brain and its modulation. Current Opinion in Neurobiology. 2008;**18**(2):153-158. DOI: 10.1016/j.conb.2008.07.012

[28] Frith CD, Frith U. The neural basis of mentalizing. Neuron. 2006;**50**(4):531-534. DOI: 10.1016/j.neuron.2006.05.001

[29] Shamay-Tsoory SG, Aharon-Peretz J. Dissociable prefrontal networks for cognitive and affective theory of mind: A lesion study. Neuropsychologia. 2007;**45**(13):3054-3067. DOI: 10.1016/j.neuropsychologia.2007.05.021

[30] Damasio AR. Emotion in the perspective of an integrated nervous system. Brain Research Reviews. 1998;**26**(2-3):83-86. DOI: 10.1016/S0165-0173(97)00064-7

[31] Carr L, Iacoboni M, Dubeau MC, Mazziotta JC, Lenzi GL. Neural mechanisms of empathy in humans: A relay from neural systems for imitation to limbic areas. Proceedings of the National Academy of Sciences. 2003;**100**(9):5497-5502. DOI: 10.1073/pnas.0935845100

[32] Pfeifer JH, Iacoboni M, Mazziotta JC, Dapretto M. Mirroring others' emotions relates to empathy and interpersonal competence in children. NeuroImage. 2008;**39**(4):2076-2085. DOI: 10.1016/j.neuroimage.2007.10.032

[33] Pfeifer J, Lieberman M, Dapretto M. "I know you are but what am I?": Neural bases of self-and social knowledge retrieval in children and adults. Journal of Cognitive. 2007;**19**:1323-1337

[34] Bechara A, Damasio AR. The somatic marker hypothesis: A neural theory of economic decision. Games and Economic Behavior. 2005;**52**(2):336-372. DOI: 10.1016/j.geb.2004.06.010

[35] Damasio AR, Grabowski TJ, Bechara A, Damasio H, Ponto LL, Parvizi J, et al. Subcortical and cortical brain activity during the feeling of self-generated emotions. Nature Neuroscience. 2000;**3**(10):1049-1056. DOI: 10.1038/79871

[36] Immordino-Yang M, McColl A. Neural correlates of admiration and compassion. Proceedings of the National Academy of Sciences. 2009;**106**(19):8021-8026

[37] Craig ADB. Significance of the insula for the evolution of human awareness of feelings from the body. Annals of the New York Academy of Sciences 2011;**1225**(1):72-82. DOI: 10.1111/j.1749-6632.2011.05990.x

[38] Decety J, Hodges S. Bridging social psychology: Benefits of transdisciplinary approaches. The Social Neuroscience of Empathy. psychology press, 2006;103-110

[39] Decety J, Jackson P. The functional architecture of human empathy. Behavioral and Cognitive Neuroscience. 2004;**3**(21):71-100

[40] Liew SL, Garrison KA, Werner J, Aziz-Zadeh L. The mirror neuron system: Innovations and implications for occupational therapy. OTJR: Occupation, Participation and Health. 2012;**32**(3):79-86. DOI: 10.3928/15394492-20111209-01

[41] Mitchell P, Currie G, Ziegler F. Two routes to perspective: Simulation and rule-use as approaches to mentalizing. British Journal of Developmental Psychology. 2009;**27**(3):513-543

[42] Dvash J, Shamay-Tsoory SG. Theory of mind and empathy as multidimensional constructs: Neurological foundations. Topics in Language Disorders. 2014;**34**(4):282-295

[43] Riečanský I, Paul N, Kölble S, Stieger S. Beta oscillations reveal ethnicity ingroup bias in sensorimotor resonance to pain of others. Social Cognitive and Affective Neuroscience. 2015;**10**(7):893-901

[44] Keysers C, Kaas JH, Gazzola V. Somatosensation in social perception. Nature Reviews Neuroscience. 2010;**11**(10):726. DOI: 10.1038/nrn2919

[45] Lamm C, Silani G, Singer T. Distinct neural networks underlying empathy for pleasant and unpleasant touch. Cortex. 2015;**70**:79-89. DOI: 10.1016/j.cortex.2015.01.021

[46] Cheng Y, Lin CP, Liu HL, Hsu YY, Lim KE, Hung D, et al. Expertise modulates the perception of pain in others. Current Biology. 2007;**17**(19):1708-1713. DOI: 10.1016/j.cub.2007.09.020

[47] Vignemont F De, Singer T. The empathic brain: How, when and why? Trends in Cognitive Sciences. 2006;**10**(10):435-441

[48] Zaki J. Empathy: A motivated account. Psychological Bulletin. 2014;**140**(6):1608-1647. DOI: 10.1037/a0037679

[49] Goubert L, Craig K, Vervoort T, Morley S. Facing others in pain: The effects of empathy. Pain. 2005;**118**:285-288

[50] Buccino G, Lui F, Canessa N, Patteri I. Neural circuits involved in the recognition of actions performed by nonconspecifics: An fMRI study. Journal of Cognitive Neuroscience. 2004;**16**:114-126

[51] Vogt S, Buccino G, Wohlschläger A, Canessa N. Prefrontal involvement in imitation learning of hand actions: Effects of Practice and Expertise. Neuroimage. 2007;**37**:1371-1383

[52] Shimada S. Deactivation in the sensorimotor area during observation of a human agent performing robotic actions. Brain and Cognition. 2010;**72**(3):394-399

[53] Press C, Cook J, Blakemore S. Dynamic modulation of human motor activity when observing actions. Journal of Neuroscience. 2011;**31**(8):2792-2800

[54] Gardner T, Goulden N, Cross E. Dynamic modulation of the action observation network by movement familiarity. Journal of Neuroscience. 2015;**35**(4):1561-1572

[55] Horan WP, Iacoboni M, Cross KA, Korb A, Lee J, Nori P, et al. Self-reported empathy and neural activity during action imitation and observation in schizophrenia. NeuroImage: Clinical. 2014;**5**:100-108. DOI: 10.1016/j.nicl.2014.06.006

[56] Meltzoff A. "Like me": A foundation for social cognition. Developmental Science. 2007; **10**(1):126-134

[57] Liew SL, Sheng T, Aziz-Zadeh L. Experience with an amputee modulates one's own sensorimotor response during action observation. NeuroImage. 2013;**69**:138-145. DOI: 10.1016/j.neuroimage.2012.12.028

[58] Liew S, Han S, Aziz-Zadeh L. Familiarity modulates mirror neuron and mentalizing regions during intention understanding. Human Brain Mapping. 2011;**32**(11):1986-1997

[59] Cross E, Liepelt R, de CH, Antonia F. Robotic movement preferentially engages the action observation network. Human Brain Mapping. 2012;**33**(9):2238-2254

[60] Losin E, Cross K, Iacoboni M. Neural processing of race during imitation: Self-similarity versus social status. Human Brain Mapping. 2014;**35**(4):1723-1739

[61] Feng C, Li Z, Feng X, Wang L, Tian T, Luo YJ. Social hierarchy modulates neural responses of empathy for pain. Social Cognitive and Affective Neuroscience 2016;**11**(3):485-495. DOI: 10.1093/scan/nsv135

[62] Fox G, Sobhani M, Aziz-Zadeh L. Witnessing hateful people in pain modulates brain activity in regions associated with physical pain and reward. Frontiers in Psychology 2013;**4**(October):772. DOI: 10.3389/fpsyg.2013.00772

[63] Silani G, Bird G, Brindley R, Singer T, Frith C. Levels of emotional awareness and autism: An fMRI study. Social Neuroscience. 2008;**3**(2):97-112

[64] Bird G, Silani G, Brindley R, White S, Frith U, Singer T. Empathic brain responses in insula are modulated by levels of alexithymia but not autism. Brain. 2010;**133**(5):1515-1525

[65] Linden W, Wen F, Paulhus D. Measuring alexithymia: Reliability, validity, and prevalence. Advances in Personality. 1995;**19**(10):51-95

[66] Bird G, Cook R. Mixed emotions: The contribution of alexithymia to the emotional symptoms of autism. Translational Psychiatry. 2013;**3**(7):e285

[67] Shah P, Hall R, Catmur C, Bird G. Alexithymia, not autism, is associated with impaired interception. Cortex. 2016;**81**:215-220

[68] Michalska K, Kinzler K, Decety J. Age-related sex differences in explicit measures of empathy do not predict brain responses across childhood and adolescence. Developmental Cognitive Neuroscience. 2013;**3**:22-32

[69] Gordon I, Vander Wyk B, Bennett R. Oxytocin enhances brain function in children with autism. Proceedings of the National Academy of Sciences. 2013;**110**(52):20953-20958

[70] Uzefovsky F, Shalev I, Israel S, Edelman S, Raz Y. Oxytocin receptor and vasopressin receptor 1a genes are respectively associated with emotional and cognitive empathy. Hormones and Behavior. 2015;**67**:60-65

[71] Saito Y, Suga M, Tochigi M, Abe O. Neural correlate of autistic-like traits and a common allele in the oxytocin receptor gene. Social Cognitive and Affective Neuroscience. 2014;**9**(10):1443-1450

Chapter 3

A Less Attractive Feature of Empathy: Intergroup Empathy Bias

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Additional information is available at the end of the chapter

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Abstract

Empathy with others' successes and misfortunes is a critical component of group living that promotes social cohesion. Unfortunately, empathy is a malleable phenomenon in that its elicitation is not automatic, but modulated by multiple interlocking factors. This chapter explores the specific phenomenon of intergroup empathy bias—the difference in empathy for members of social ingroups versus outgroups—which poses profound challenges for our modern human world characterized by a multitude of groups, ethnicities, and cultures. The chapter frames the discussion by contextualizing empathy as consisting of three interacting component processes, namely experience sharing, perspective taking, and empathic concern. It then goes on to examine research describing the effects of intergroup bias on each of these component processes. Next, it explores the factors, both at the level of the group and at the level of the individual, which may contribute to empathic breakdown in intergroup contexts. Finally, it considers strategies that may have potential in mitigating intergroup empathy bias. Here, we draw on our own experiences in the South African context, which is characterized by pervasive racial inequality and legacies of apartheid violence, to suggest that intergroup empathy is best stimulated in a context of reciprocal mutual engagement with the other.

Keywords: intergroup, empathy, experience sharing, perspective taking, empathic concern

1. Introduction

Humans are ultra-social organisms, because they form and depend on organizations that extend beyond the individual [1]. This social interdependence arguably evolved because group living, and its associated social functions, offered several reproductive and long-term

survival advantages, compared to going solo [2]. In turn, these social functions necessitated the evolution of more sophisticated cognitive and emotional capacities, like theory of mind and moral emotions, to enable thriving within a group context [3]. Critical among these is our ability to empathize: the capacity to think and feel oneself into the inner reality of another person, while recognizing that their emotional experience is separate from our own [4]. Empathizing with others in distress is particularly important because it motivates behavior aimed at alleviating those others' suffering, and this, in turn, promotes social cohesion and resource-sharing among members of society [5, 6].

Unfortunately, witnessing a person in distress does not inevitably evoke feelings of empathy, nor does it always result in prosocial helping behavior. Even though we may encounter many potential empathy-eliciting scenarios in our everyday lives, we respond with empathy to only a fraction of them [7, 8]. In fact, recent evidence suggests that empathic failures are not always characterized by attenuated empathy or indifference, but quite often by counter-empathic responses, like Schadenfreude and Glückschmerz, which may facilitate hostility [9, 10]. Empathic reactions are therefore not automatic, but rather, the degree to which we respond empathically are modulated by multiple interlocking factors, which science is only beginning to unravel. For example, growing evidence suggests that empathic responding is influenced significantly by personal features of the empathizer (e.g., gender, trait empathy, childhood trauma), by interpersonal factors (e.g., perceived fairness, social stigma), by cultural factors (e.g., interdependence vs. independence, preference for social hierarchy), and importantly, by the social group membership of the person in distress (e.g., race, political affiliation, sports team identification) [11–18]. Although empathy for one's own social group is particularly important and holds several long-term advantages [19], the flipside of this phenomenon, i.e., diminished empathy for the outgroup, poses profound challenges for our modern human world where a multitude of groups, ethnicities, and cultures compete for the same resources [20].

This chapter explores a fundamentally important, albeit less attractive, feature of empathy, namely, its breakdown in response to the pain of outgroup others. In particular, it asks the following questions: Where and how does the empathic process break down? Which factors exacerbate this empathic failure? And is it possible to ameliorate, or even reverse, these effects? The chapter frames the discussion by contextualizing empathy as consisting of three interacting component processes, namely, experience sharing, perspective taking, and empathic concern. It then goes on to examine research describing the effects of intergroup bias on each of these component processes. Next, it explores the factors, both at the level of the group and at the level of the individual, which may contribute to empathic breakdown in intergroup contexts. Finally, it considers strategies that may have potential in mitigating intergroup empathy bias.

2. Empathy component processes

Empathy is a complex psychological phenomenon. Whereas early conceptualizations of empathy have typically stressed either its cognitive or affective aspects [21], more recent research considers empathy a multidimensional construct that may be parsed into three dissociable but

interacting neurocognitive components: emotional sharing, perspective taking, and empathic concern [22, 23].

Emotional sharing constitutes the affective component of empathy and is also commonly referred to as *emotion contagion* or *affective resonance*. It refers to the automatic capacity to become aroused by another's emotions and relies on subcortical emotion circuits [7]. For example, seeing an angered individual may lead the empathic observer to vicariously experience similar feelings.

Perspective taking constitutes the cognitive component of empathy and refers to the capacity to view a situation from another's point of view, or to put oneself in their shoes, as it were. Doing this allows one to better recognize and understand another person's affective experience. It therefore partly overlaps with theory of mind-like processing and relies on the mentalizing network [24, 25]. Because perspective taking begins with the perception of affective signals from another individual, low-level processes involved in face perception and emotion recognition are integral to understanding another individual's internal state [26].

Finally, empathic concern constitutes the motivational component of empathy and refers to other-oriented feelings of care and compassion when perceiving an individual in distress. The experience of empathic concern may stimulate prosocial helping or caring behaviors in the observer [5, 27]. Recent neuroimaging studies have highlighted the role of the medial prefrontal cortex (MPFC) [13] and septal area [25] in empathy-driven prosocial motivation.

Each empathic component is sensitive to both bottom-up automatic affective processes and to top-down perceiver-controlled cognitive processes, which feed into each other [7]. For example, too much affective arousal may result in personal distress within the observer, promoting a self-focused escape response rather than other-oriented empathic response [28]. In turn, executive functions serve to consciously regulate the self-focused distress response, so that an awareness of the other's perspective and concern for their circumstances becomes possible [29]. These interconnected mechanisms function together to produce an overall empathic response that combines automatic experience sharing as well as intentional feelings of concern.

3. Intergroup empathy bias

Abundant evidence from social psychology suggests that individuals instinctively categorize themselves into salient social groups with which they identify and with whom they feel a sense of belonging [30, 31]. Unfortunately, this categorization also maximizes differences between groups, leading people to more readily distrust, fear, and discriminate against outgroup members and to instinctively favor or side with members of social groups with which they identify [32].

Importantly, this intergroup bias has been shown to impact emotional responding toward others when it matters most—when they are in pain. Whereas greater empathy toward one's ingroup makes sense from an evolutionary perspective [20], empathic failures toward outgroup members may lie at the heart of most intergroup conflict situations, including political

violence, xenophobia, and genocide [33]. Interestingly, outgroup empathy failures do not seem to depend on a person's trait empathic concern [34]. That is, even the most deeply empathic person can mute their empathic response toward a perceived enemy under the right circumstances—a phenomenon that has been referred to as the mind's "empathy gap" [35]. Although the mechanism that underlies this empathy gap remains unclear, studies investigating intergroup empathy have demonstrated that outgroup membership status can compromise all levels of empathic responding (i.e., affective, cognitive, and motivational), as well as helping behavior [18, 36–38].

An important aspect of intergroup bias is the fact that it appears to depend heavily on the perceiver's social motivation: various studies have shown that self-categorization broadly along some ingroup/outgroup distinction is flexible and that re-categorization with an arbitrarily defined group may be sufficient to override automatic response biases [39]. In these studies, participants are typically assigned to novel groups using a minimal group paradigm [40] and then subjected to a variety of tasks assessing perceptual, affective, and behavioral ingroup biases [41–44]. Recently, researchers have specifically advocated the advantages of assigning people to novel groups, rather than focusing on specific social or historic groups, to advance our understanding of the processes that guide intergroup behavior across multiple contexts and levels of analysis [45].

When it comes to empathic responding more specifically, arbitrary group categorization by way of a minimal group manipulation can also facilitate intergroup biases, particularly when the groups are in competition [9]. For example, previous research found that similar group membership between a helper and target (regardless of whether the group was real or artificially determined) strengthened the role of empathy and helping [46]. Similarly, mere categorization of participants into non-relevant social groups appears sufficient to facilitate an ingroup bias in empathy for physical pain [47].

Not many studies have explored the relationship between race and minimal group biases in empathic responding, however, and results from these studies are inconsistent. For example, in a recent study, participants showed clear minimal group biases (unaffected by race) on both an explicit group identification and implicit affective priming task, whereas neural imaging responses were indicative of significantly greater empathic arousal in response to own-race compared to other-race individuals [48]. The authors concluded that racial categorization may be a stronger modulator of the ingroup bias in empathic neural processing than general social group categorization (i.e., by assigning participants into random teams). One possible reason for this finding is that humans may (automatically) detect and encode race as a by-product of an adaptation to identify fellow group members [49, 50]. Given that findings to date have been inconclusive, however, more research will be necessary to tease apart these effects (see also [51]).

3.1. Group membership and emotional sharing

Emotional sharing is important in the context of empathy, because it plays a fundamental role in generating the motivation to care for and help another individual in distress [52]. Despite a general notion that affective arousal is automatic, empirical evidence suggests that many variables, including *a priori* attitudes and culturally learned associations, affect its induction in the

observer (see e.g. [53, 54]). Notably, reduced affective resonance when viewing an outgroup member in pain may be associated with fewer physiological signals from the observer's body to help interpret the other individual's emotional state and stimulate prosocial action [26].

Various studies exploring affective resonance in response to in- and outgroup members in physical pain found dampened autonomic arousal in response to outgroup members' pain [17, 37]. Interestingly, in these studies, greater levels of racial prejudice on implicit measures of prejudice were associated with greater lack of empathic arousal toward outgroup members. Reduced emotional sharing in response to outgroup members is not exclusive to scenarios of physical pain; however, it also extends to scenarios of emotional pain. For example, Gutsell and Inzlicht [55] recorded electroencephalographic (EEG) alpha oscillations when participants observed ingroup and outgroup members expressing sadness. They found that, whereas participants showed similar activation patterns when experiencing sadness themselves and when observing ingroup members feeling sad, participants did not show these same vicarious activation patterns when observing outgroup members feeling sad. Participants thus appeared to experience reduced emotional sharing in response to outgroup members' sadness, and this became more pronounced the more prejudiced they were.

Several neuroimaging studies have shown that intergroup empathy bias may also manifest as increased hemodynamic activation in the anterior cingulate cortex (ACC) and anterior insula—areas thought to underlie the subjective representation of affective distress [18, 56, 57]. Notably, in a recent study, we detected significantly enhanced amygdala activity in response to own-race compared to other-race individuals in perceived physical pain [58]. The amygdala is typically activated during events high in emotional salience or novelty and may direct attention to motivationally relevant stimuli [59]. We thus argued that heightened amygdala activation toward same-race individuals in pain reflects approach-related motivation and attention in line with task demands, which urged participants to empathize with individuals in distress [39].

3.2. Group membership and perspective taking

At the level of emotion recognition, research suggests that observers are faster and more accurate at distinguishing own-race compared to other-races faces [60] and are better at identifying emotional expressions of racial ingroup compared to outgroup members [54, 61]. Research has also found that people are less likely to attribute secondary emotions, which are uniquely human characteristics, to outgroup compared to ingroup members [38, 62].

When it comes to perspective taking, people appear to be more likely, or more accurate, in taking the perspective of an ingroup member compared to an outgroup member. For example, when Asian and White participants viewed photographs of members of both racial groups in negative contexts (e.g., illness, grief, injury) and positive contexts (e.g., party, amusement, smiling), participant self-report data indicated greater perspective taking and empathy for own-race members than other-race members, particularly in the negative contexts [36]. Furthermore, several neuroimaging studies, including our own, demonstrated stronger hemodynamic activation in response to others' pain for racial ingroups versus outgroups in regions associated with mentalizing, including the medial prefrontal cortex (MPFC), temporoparietal

junction (TPJ), and precuneus [12, 58, 63]. In our study, we concluded that, because these areas form part of networks implicated in self-referential processing, episodic memory retrieval, and thinking about other minds, heightened activity may allow for a richer representation of another's physical/psychological pain. By implication, reduced activity in these areas suggests impaired perspective taking when it comes to outgroup members.

Perspective taking is thought to enhance empathy by creating increased overlap between "self" and "other" cognitive representations, thereby reducing the self-other gap [64]. Merging another individual into one's self-concept thus results in a feeling of "oneness" and a sense of shared identity with the other person, which facilitates understanding someone else's emotions as if they were one's own. Unfortunately, people experience self-other merging much more easily with those whom they perceive as more similar to themselves, such as family members and close friends [65].

3.3. Group membership, empathic concern, and helping behavior

Various lines of evidence suggest that empathic concern and resulting helping behaviors are affected by intergroup biases. For example, Drwecki et al. [66] found that White participants reported greater empathic concern for White individuals in pain than for Black individuals in pain, and offered higher levels of analgesic treatment for ingroup compared to outgroup members. Also, in two neuroimaging studies, empathy-related neural activity when observing ingroup members' suffering relative to outgroup members' suffering predicted greater willingness to donate time and money [63], as well as greater costly helping [18] for ingroup members at a later stage.

The literature on helping behavior is complex, however, and a variety of factors may influence one's decision to offer help, including altruistic motivation, a sense of similarity with the outgroup, self-regulatory depletion, and competitive or status-related processes [26, 67]. A quantitative meta-analysis of White individuals' helping directed toward Black individuals indicated no overall tendency to discriminate against racial outgroup members [68]. Instead, White individuals tended to help Black and White individuals equally, except when helping required considerable effort, time, or risk, which then resulted in an ingroup bias in helping. Broadly speaking, the literature suggests that when helping requires greater resources, individuals may cognitively justify not helping by basing their decision on reasons other than the (racial) outgroup of the person in need. Although helping ingroup members may thus be motivated largely by empathic concern, helping outgroup members may involve further systematic decision-making based on the costs and benefits of offering help [46].

4. Factors that contribute to empathic breakdown in intergroup contexts

In recent years, at least two things have become increasingly apparent in intergroup research: social group membership is highly flexible and context-dependent, and not all outgroups elicit intergroup empathy bias equally. In trying to tease apart the complex array of factors

that influence intergroup responding—at least at the level of the group—Cikara and van Bavel [45] have recently argued that two factors are critical: functional relations between groups (shared, competing, or independent goals) and relative group status (access to resources).

Empathic breakdown between members of rival or conflict groups is well documented [69–71]. People's relationships to others play a significant role in determining how they respond to their suffering: whereas a friend's misfortune typically elicits empathy, a foe's misfortune might be experienced as less distressing, or even as pleasurable [72, 73]. Unfortunately, intergroup contexts tend to exacerbate people's motivation *not* to empathize or care about someone else's misfortune, in that groups may provoke significantly more competition and aggression than interpersonal interactions [10, 74].

Explicit competition between groups has the effect of increasing the salience of social identity and generally strengthens the positive relationship between ingroup identification and intergroup bias and hostility [31, 75]. For example, in a neuroimaging study of real-world sports rivalry between avid fans of the Red Sox and Yankees baseball teams, ingroup team failures were associated with increased activity in neural areas associated with the subjective experience of pain [76]. In contrast, outgroup team failures were associated with increased self-reported pleasure and activity in neural areas associated with reward processing. Moreover, and rather disturbingly, the more positive value (pleasure) participants attached to rival team failures, the more they were willing to aggress against a fan of the rival team. Similar results were also observed when novel groups were pitted against each other [9]. Of significance is that in the latter study, intergroup empathy bias between competing groups was robust beyond contexts that defined the groups themselves, and even when the competitive threat of the outgroup was removed (e.g., feedback that the outgroup has fallen behind).

A second factor central to intergroup dynamics concerns the question of resources: To what extent does a social group have the power to carry out their intentions? [45]. Groups higher up the social hierarchy have more status and greater access to resources, and thus greater potential threat value, whereas groups lower down the hierarchy are typically scorned and pose less of a threat [77]. Even without overt competition, differences in power and resources between groups have been shown to predict perceptions of competitiveness [78]. Importantly, historical asymmetries in power and status between groups affect intergroup empathic responding, as well as lower level perceptual processes that operate outside awareness [79].

In an interesting study assessing people's perceptions of Black and White pain, the authors detected a consistent racial bias in evaluations, such that Black people were consistently perceived to experience less pain than White people [80]. Crucially, this bias in pain perception (by both Black and White Americans, including nursing professionals) could not be attributed to racial prejudice, but instead appeared rooted in perceptions of status and the privilege or hardship it confers. Hence, the less privileged a target seemed, the less pain participants thought he/she would experience. In a similar vein, another study using facial electromyography showed that an individual's relative social status affects how other people respond to their misfortune: participants felt less bad and smiled more when negative events happened to high-status compared to low-status individuals [81].

Although group membership significantly impacts empathic responding, empathy is not solely influenced by external factors, such as the race or status of the person in distress. Individual differences of the perceiver may also moderate the extent to which there is an intergroup bias in empathic responding. That is, based on individual traits, some people might be more likely to show strong intergroup biases in empathic responding than others.

Empirical studies show that the strength of racial identification may contribute to intergroup bias in empathic responding [63, 82]. Although social group membership defined according to race is a prominent aspect of interactions among individuals, the extent to which people identify with their own racial group varies from person to person [83]. Some individuals regard their racial identity as a crucial part of their self-concept, whereas others may not feel a strong belonging to their racial group. Strong racial identification makes it more likely that an individual will process the emotions of racial ingroup members in a self-referential manner, resulting in greater empathy toward own-race individuals. Interestingly, some research suggests that pervasive discrimination against members of disadvantaged groups is associated with increased ingroup identification, which, in turn, may alleviate some of the negative psychological consequences of societal dehumanization [84, 85].

Another important factor that contributes to variation in intergroup relations is motivation to respond without prejudice [86]. Because overt racial discrimination is not socially acceptable, society generally favors individuals who act in non-prejudiced ways. Hence, individuals are motivated to alter their behavior to appear non-prejudiced. The strength of the motivations to respond without prejudice, and the extent to which these motivations influence behavior, however, vary between individuals [87]. Furthermore, people may be motivated primarily by sincere changes in their personal attitude (internally motivated; IMS), or they may be motivated primarily by external pressures to avoid judgment or punishment from others (externally motivated; EMS) [88].

Data from our research have shown that different motivations to appear non-prejudiced can modulate intergroup empathic responding. For example, in a functional magnetic resonance imaging (fMRI) study of intergroup empathy, higher EMS scores in White participants were associated with dampened neural empathic responses toward Black individuals in both physical and emotional distress [58]. And in another study, higher IMS scores in White participants were positively associated with prosocial helping behavior toward a Black individual in distress, whereas higher EMS scores were negatively associated with prosocial helping toward that individual [89].

5. Strategies to reduce intergroup empathy bias

In the introductory section of this chapter, we presented an evolutionary perspective as framework for understanding the social interdependence of human beings that is foundational in the development of empathy. In presenting strategies to reduce intergroup empathy bias, we draw on theoretical formulations from different branches of psychology regarding the development of empathy in intergroup contexts. Notably, various studies in social psychology have

demonstrated the efficacy of cognitive strategies (e.g., increased attention to an individual's feelings vs. his/her group status), manipulating the intergroup relationship (e.g., cooperative vs. competitive), manipulating group membership (e.g., recategorizing or decategorizing individuals), blurring group boundaries (e.g., reducing perceptions of group entitativity), and effortful perspective taking, in reducing intergroup empathy bias [9, 51, 90–92]. While success in reducing intergroup empathy bias along these lines is thus possible, results of such strategies appear to be highly context dependent [93]. Moreover, investigators have rarely evaluated the efficacy of the strategy they employed beyond the immediate study context or longitudinally [94].

Scholars influenced by the relational psychoanalytic discipline have often followed a different approach in restoring empathic bonds, observing that the need and proclivity for connection are central to human development [95]. Stolorow and Atwood, for example, have argued for the primacy of interconnectedness and advanced the theory of intersubjectivity—a development of self, understood in interaction with others [96]. Accordingly, connection with others is fundamental in the development of one's identity, and experience and subjectivity are shaped by these relationships with others. The intersubjective epistemological model provides an important conceptual guideline for understanding the deeper significance of processes of perspective taking that unfold in intergroup encounters, which may, in turn, lead to the strengthening of empathic bonds.

Specifically, the subtleties of the dynamic at play in dialogic intergroup encounters are shaped by the reciprocal influence and mutual awareness that develop in the intersubjective field—created in the coming together of people from two different groups representing two different historical perspectives. Thus, through a process of genuine listening to the other's story and pain in a facilitated, interactive process, the resonance that unfolds opens up the possibility for individual participants from each side to enter into the feeling state of the other. It is in this intersubjective engagement with the other's story that the emergence of shared empathy becomes possible.

We have referred to this unfolding process as "empathic repair" [69], a process of intersubjective repair that points to a deeper level of *mutual* recognition, one that occurs both intrapsychically and in the participants' external world through expressions of acknowledgment. This mutuality of a shared transformative moment is the fundamental moment of empathic repair and reciprocal recognition of the other's humanity that creates pathways to caring for the other as a fellow human being. In the following section, we describe apartheid South Africa as a concrete example of intergroup empathy failure and how dialogue processes initiated by the Truth and Reconciliation Commission opened up possibilities for empathic connection.

5.1. Apartheid South Africa as an example of intergroup empathic failure

Our interest in questions of empathic failures, and how empathic connections between groups might be enhanced, grew out of our work in the South African context with its history of intergenerational mistrust, hatred, and resentment born out of the violence of policies of apartheid. Both physical violence and the kind of violence that results from a lifetime of humiliation, passed down across generations of oppressed groups, create boundaries and deep divisions in relationships between self and others. This means that starting well before one's capacity

even to make moral choices has been tested, one's sense of moral obligation toward others is rigidly channeled along lines of "us" versus "them," and the images of "them" depict a group that exists only as objectified others. Empathic failure operates under these conditions of a deep separation between racial groups as codified in apartheid laws.

As a strategy to find a sustainable way of dealing with these failures of empathy, and under Nelson Mandela's leadership, the Truth and Reconciliation Commission (TRC) was introduced in South Africa. What happened at the TRC may not be generalizable to all other post-conflict contexts. But what the work of the TRC has shown is that empathic connection between former adversaries can indeed be restored. An important condition for this to happen is the forging of dialogue and a vocabulary of compromise and tolerance, because the exercise of forming that vocabulary involves settling differences through the politics of contestation and compromise among people separated by laws based on intergroup hatred.

South Africa's TRC, with its remarkable stories of forgiveness and healing, was a powerful illustration of how under certain conditions, instead of widening boundaries and deepening empathic failures, post-conflict dialogue processes can facilitate genuine connection in an intergroup context. Dialogue creates the possibility of setting the actions of "the other" in the broader framework of the political-ideological context that may have supported, and even directed, the hateful acts that excluded one from the moral and empathic obligations of "the other." Thus, the politics of abuse that were enshrined in the policies of an oppressive system such as apartheid could be acknowledged and confirmed in ways that opened up the possibility for the emergence of empathy between former adversaries.

6. Conclusions

Freud remarked that empathy "plays the largest part of our understanding of what is inherently foreign to our ego in other people" [97]. It is therefore not surprising that situations where empathy for another's distress is absent or reduced are very often also characterized by distrust, hatred, violence, discrimination, and even pleasure. The current chapter explored the complexities of intergroup empathic responding in an effort to gain a better understanding of the mechanisms that govern this process. First, we have shown that group membership affects all levels of empathic responding: experience sharing, perspective taking, and empathic concern. Second, we have pointed out the fluid nature of groups, in that both functional relations and differences in power and status may affect intergroup empathic responding at any given time. In addition, we have shown how various individual difference characteristics, notably racial identification and motivations to respond without prejudice, can influence intergroup empathic responding.

The intergroup landscape is not universally bleak, however, and empathic response differences across social categories are not inevitable. Drawing on our experiences in post-apartheid South Africa, we believe the intersubjective space that unfolds between former adversaries when coming together in facilitated dialogue with each other opens up rich possibilities for

a shared empathy and mutual recognition of the other's humanity. These connections create new relational experiences that can help restore historical ruptures.

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References

[1] Cacioppo JT, Cacioppo S. Social neuroscience. Perspectives on Psychological Science. 2013;**8**(6):667-669

[2] De Waal FBM. Primates and Philosophers: How Morality Evolved. New Jersey: Princeton University Press; 2006

[3] Boyd R, Richerson PJ. Culture and the evolution of human cooperation. Philosophical Transactions of the Royal Society of London B, Biological Sciences. 2009;**364**(1533):3281-3288

[4] Decety J, Lamm C. Human empathy through the lens of social neuroscience. The Scientific World Journal. 2006;**6**:1146-1163

[5] Eisenberg N, Miller PA. The relation of empathy to prosocial and related behaviors. Psychological Bulletin. 1987;**101**(1):91-119

[6] Batson CD, Lishner DA, Stocks EL. The empathy-altruism hypothesis. In: Schroeder DA, Graziano WG, editors. The Oxford Handbook of Prosocial Behavior. New York, NY: Oxford University Press; 2015. pp. 259-281

[7] Decety J. Dissecting the neural mechanisms mediating empathy. Emotion Review. 2011;**3**(1):92-108

[8] de Vignemont F, Singer T. The empathic brain: How, when and why? Trends in Cognitive Sciences. 2006;**10**(10):435-441

[9] Cikara M, Bruneau E, Van Bavel JJ, Saxe R. Their pain gives us pleasure: How intergroup dynamics shape empathic failures and counter-empathic responses. Journal of Experimental Social Psychology. 2014;**55**:110-125

[10] Cikara M, Bruneau EG, Saxe RR. Us and them: Intergroup failures of empathy. Current Directions in Psychological Science. 2011;**20**(3):149-153

[11] Singer T, Seymour B, O'Doherty JP, Stephan KE, Dolan RJ, Frith CD. Empathic neural responses are modulated by the perceived fairness of others. Nature. 2006;**439** (7075):466-469

[12] Cheon BK, Im DM, Harada T, Kim JS, Mathur VA, Scimeca JM, et al. Cultural influences on neural basis of intergroup empathy. NeuroImage. 2011;**57**(2):642-650

[13] Rameson LT, Morelli SA, Lieberman MD. The neural correlates of empathy: Experience, automaticity, and prosocial behavior. Journal of Cognitive Neuroscience. 2012;**24**(1):235-245

[14] Locher SC, Barenblatt L, Fourie MM, Stein DJ, Gobodo-Madikizela P. Empathy and childhood maltreatment: A mixed-methods investigation. Annals of Clinical Psychiatry. 2014;**26**(2):97-110

[15] de Greck M, Shi Z, Wang G, Zuo X, Yang X, Wang X, et al. Culture modulates brain activity during empathy with anger. NeuroImage. 2012;**59**(3):2871-2882

[16] Decety J, Echols S, Correll J. The blame game: The effect of responsibility and social stigma on empathy for pain. Journal of Cognitive Neuroscience. 2009;**22**(5):985-997

[17] Avenanti A, Sirigu A, Aglioti SM. Racial bias reduces empathic sensorimotor resonance with other-race pain. Current Biology. 2010;**20**(11):1018-1022

[18] Hein G, Silani G, Preuschoff K, Batson CD, Singer T. Neural responses to ingroup and outgroup members' suffering predict individual differences in costly helping. Neuron. 2010;**68**(1):149-160

[19] Hoffman ML. Is altruism part of human nature? Journal of Personality and Social Psychology. 1981;**40**:121-137

[20] de Waal FB. The antiquity of empathy. Science. 2012;**336**(6083):874-876

[21] Watt D. Toward a neuroscience of empathy: Integrating affective and cognitive perspectives. Neuro-Psychoanalysis. 2007;**9**(2):119-140

[22] Zaki J, Ochsner KN. The neuroscience of empathy: Progress, pitfalls and promise. Nature Neuroscience. 2012;**15**(5):675-680

[23] Decety J. The neural pathways, development and functions of empathy. Current Opinion in Behavioral Sciences. 2015;**3**:1-6

[24] Gallagher HL, Frith CD. Functional imaging of 'theory of mind'. Trends in Cognitive Sciences. 2003;**7**(2):77-83

[25] Morelli SA, Rameson LT, Lieberman MD. The neural components of empathy: Predicting daily prosocial behavior. Social Cognitive and Affective Neuroscience. 2014;**9**(1):39-47

[26] Echols S, Correll J. It's more than skin deep: Empathy and helping behaviour across social groups. In: Decety J, editor. Empathy From Bench to Bedside. London: MIT Press; 2012. pp. 55-71

[27] Batson CD, Fultz J, Schoenrade PA. Distress and empathy: Two qualitatively distinct vicarious emotions with different motivational consequences. Journal of Personality. 1987;**55**(1):19-39

[28] Eisenberg N. Emotion, regulation and moral development. Annual Review of Psychology. 2000;**51**:665-697

[29] Decety J, Meyer M. From emotion resonance to empathic understanding: A social developmental neuroscience account. Development and Psychopathology. 2008;**20**(4):1053-1080

[30] Tajfel H, Turner J. An integrative theory of intergroup conflict. In: Austen WG, Worchel S, editors. The Social Psychology of Intergroup Relations. Monterey, CA: Brooks-Cole; 1979

[31] Hewstone M, Rubin M, Willis H. Intergroup bias. Annual Review of Psychology. 2002;**53**:575-604

[32] Johnson JD, Simmons CH, Jordav A, Maclean L, Taddei J, Thomas D, et al. Rodney King and O. J. Revisited: The impact of race and defendant empathy induction on judicial decisions. Journal of Applied Social Psychology. 2002;**32**(6):1208-1223

[33] Cohen TR, Insko CA. War and peace: Possible approaches to reducing intergroup conflict. Perspectives on Psychological Science. 2008;**3**(2):87-93

[34] Bruneau EG, Cikara M, Saxe R. Intergroup behaviors are predicted by parochial empathy rather than trait empathic concern. Personality and Social Psychology Bulletin. In press

[35] Interlandi J. The Brain's Empathy Gap. Can Mapping Neural Pathways Help us Make Friends with our Enemies? [Internet]. 2015. Available from: https://www.nytimes.com/2015/03/22/magazine/the-brains-empathy-gap.html?_r=0 [Accessed: February 15, 2017]

[36] Neumann DL, Boyle GJ, Chan RCK. Empathy towards individuals of the same and different ethnicity when depicted in negative and positive contexts. Personality and Individual Differences. 2013;**55**(1):8-13

[37] Forgiarini M, Gallucci M, Maravita A. Racism and the empathy for pain on our skin. Frontiers in Psychology. 2011;**2**:108

[38] Cuddy AJC, Rock MS, Norton MI. Aid in the aftermath of Hurricane Katrina: Inferences of secondary emotions and intergroup helping. Group Processes & Intergroup Relations. 2007;**10**(1):107-118

[39] Amodio DM. The neuroscience of prejudice and stereotyping. Nature Reviews Neuroscience. 2014;**15**(10):670-682

[40] Tajfel H, Billig MG, Bundy RP, Flament C. Social categorization and intergroup behaviour. European Journal of Social Psychology. 1971;**1**(2):149-178

[41] Young SG, Hugenberg K. Mere social categorization modulates identification of facial expressions of emotion. Journal of Personality and Social Psychology. 2010;**99**(6):964-977

[42] Van Bavel JJ, Cunningham WA. Self-categorization with a novel mixed-race group moderates automatic social and racial biases. Personality and Social Psychology Bulletin. 2009;**35**(3):321-335

[43] Van Bavel JJ, Packer DJ, Cunningham WA. The neural substrates of in-group bias: A functional magnetic resonance imaging investigation. Psychological Science. 2008;**19**(11):1131-1139

[44] Ratner KG, Amodio DM. Seeing "us vs. them": Minimal group effects on the neural encoding of faces. Journal of Experimental Social Psychology. 2013;**49**:298-301

[45] Cikara M, Van Bavel JJ. The neuroscience of intergroup relations: An integrative review. Perspectives on Psychological Science. 2014;**9**(3):245-274

[46] Stürmer S, Snyder M, Kropp A, Siem B. Empathy-motivated helping: The moderating role of group membership. Personality and Social Psychology Bulletin. 2006;**32**(7):943-956

[47] Montalan B, Lelard T, Godefroy O, Mouras H. Behavioural investigation of the influence of social categorization on empathy for pain: A minimal group paradigm study. Frontiers in Psychology. 2012;**3**:2-5

[48] Contreras-Huerta LS, Baker KS, Reynolds KJ, Batalha L, Cunnington R. Racial bias in neural empathic responses to pain. PLoS One. 2013;**8**(12):e84001

[49] Voorspoels W, Bartlema A, Vanpaemel W. Can race really be erased? A pre-registered replication study. Frontiers in Psychology. 2014;**5**:1035

[50] Kurzban R, Tooby J, Cosmides L. Can race be erased? Coalitional computation and social categorization. Proceedings of the National Academy of Sciences of the United States of America. 2001;**98**(26):15387-15392

[51] Sheng F, Han S. Manipulations of cognitive strategies and intergroup relationships reduce the racial bias in empathic neural responses. NeuroImage. 2012;**61**(4):786-797

[52] Decety J, Cowell JM. Friends or foes: Is empathy necessary for moral behavior? Perspectives on Psychological Science. 2014;**9**(5):527-537

[53] Lieberman MD, Hariri A, Jarcho JM, Eisenberger NI, Bookheimer SY. An fMRI investigation of race-related amygdala activity in African-American and Caucasian-American individuals. Nature Neuroscience. 2005;**8**(6):720-722

[54] Chiao JY, Iidaka T, Gordon HL, Nogawa J, Bar M, Aminoff E, et al. Cultural specificity in amygdala response to fear faces. Journal of Cognitive Neuroscience. 2008;**20**(12): 2167-2174

[55] Gutsell JN, Inzlicht M. Intergroup differences in the sharing of emotive states: Neural evidence of an empathy gap. Social Cognitive and Affective Neuroscience. 2012;**7**(5):596-603

[56] Xu X, Zuo X, Wang X, Han S. Do you feel my pain? Racial group membership modulates empathic neural responses. Journal of Neuroscience. 2009;**29**(26):8525-8529

[57] Azevedo RT, Macaluso E, Avenanti A, Santangelo V, Cazzato V, Aglioti SM. Their pain is not our pain: Brain and autonomic correlates of empathic resonance with the pain of same and different race individuals. Human Brain Mapping. 2013;**34**(12):3168-3181

[58] Fourie MM, Stein DJ, Solms M, Gobodo-Madikizela P, Decety J. Empathy and moral emotions in post-apartheid South-Africa: An fMRI investigation. Social Cognitive and Affectice Neuroscience. In press

[59] Cunningham WA, Brosch T. Motivational salience: Amygdala tuning from traits, needs, values, and goals. Current Directions in Psychological Science. 2012;**21**(1):54-59

[60] Meissner CA, Brigham JC. Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review. Psychology, Public Policy, and Law. 2001;**7**:3-35

[61] Elfenbein HA, Ambady N. On the universality and cultural specificity of emotion recognition: A meta-analysis. Psychological Bulletin. 2002;**128**(2):203-235

[62] Leyens J-P, Paladino PM, Rodriguez-Torres R, Vaes J, Demoulin Sp, Rodriguez-Perez A, et al. The emotional side of prejudice: The attribution of secondary emotions to ingroups and outgroups. Personality and Social Psychology Review. 2000;**4**(2):186-197

[63] Mathur VA, Harada T, Lipke T, Chiao JY. Neural basis of extraordinary empathy and altruistic motivation. NeuroImage. 2010;**51**(4):1468-1475

[64] Galinsky AD, Ku G, Wang CS. Perspective-taking and self-other overlap: Fostering social bonds and facilitating social coordination. Group Processes & Intergroup Relations. 2005;**8**(2):109-124

[65] Cialdini RB, Brown SL, Lewis BP, Luce C, Neuberg SL. Reinterpreting the empathy-altruism relationship: When one into one equals oneness. Journal of Personality and Social Psychology. 1997;**73**(3):481-494

[66] Drwecki BB, Moore CF, Ward SE, Prkachin KM. Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. Pain. 2011;**152**(5):1001-1006

[67] De Wall CN, Baumeister RF, Gailliot MT, Maner JK. Depletion makes the heart grow less helpful: Helping as a function of self-regulatory energy and genetic relatedness. Personality and Social Psychology Bulletin. 2008;**34**(12):1653-1662

[68] Saucier DA, Miller CT, Doucet N. Differences in helping whites and blacks: A meta-analysis. Personality and Social Psychology Review. 2005;**9**(1):2-16

[69] Gobodo-Madikizela P. Psychological repair: The intersubjective dialogue of remorse and forgiveness in the aftermath of gross human rights violations. Journal of the American Psychoanalytic Association. 2015;**63**(6):1085-1123

[70] Gobodo-Madikizela P. Empathetic repair after mass trauma. When vengeance is arrested. European Journal of Social Theory. 2008;**11**(3):331-350

[71] Bruneau EG, Dufour N, Saxe R. Social cognition in members of conflict groups: Behavioural and neural responses in Arabs, Israelis and South Americans to each other's misfortunes. Philosophical Transactions of the Royal Society of London Series B, Biological Sciences. 2012;**367**(1589):717-730

[72] Meyer ML, Masten CL, Ma Y, Wang C, Shi Z, Eisenberger NI, et al. Empathy for the social suffering of friends and strangers recruits distinct patterns of brain activation. Social Cognitive and Affective Neuroscience. 2013;**8**(4):446-454

[73] Smith RH, Powell CAJ, Combs DJY, Schurtz DR. Exploring the when and why of schadenfreude. Social and Personality Psychology Compass. 2009;**3**(4):530-546

[74] Meier BP, Hinsz VB. A comparison of human aggression committed by groups and individuals: An interindividual–intergroup discontinuity. Journal of Experimental Social Psychology. 2004;**40**(4):551-559

[75] Hogg MA. Hogg MA. Group cohesiveness: A critical review and some new directions. European Review of Social Psychology. 1993;**4**:85-111

[76] Cikara M, Botvinick MM, Fiske ST. Us versus them: Social identity shapes neural responses to intergroup competition and harm. Psychological Science. 2011;**22**(3):306-313

[77] Fiske ST. Divided by status: Upward envy and downward scorn. Proceedings of the American Philosophical Society. 2013;**157**(3):261-268

[78] Fiske ST, Cuddy AJ, Glick P, Xu J. A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. Journal of Personality and Social Psychology. 2002;**82**(6):878-902

[79] Chang LW, Krosch AR, Cikara M. Effects of intergroup threat on mind, brain, and behavior. Current Opinion in Psychology. 2016;**11**:69-73

[80] Trawalter S, Hoffman KM, Waytz A. Racial bias in perceptions of others' pain. PLoS One. 2012;**7**(11):e48546

[81] Cikara M, Fiske ST. Stereotypes and schadenfreude: Affective and physiological markers of pleasure at outgroup misfortunes. Social Psychological and Personality Science. 2012;**3**(1):63-71

[82] Mathur VA, Harada T, Chiao JY. Racial identification modulates default network activity for same and other races. Human Brain Mapping. 2012;**33**(8):1883-1893

[83] Phinney JS. The multigroup ethnic identity measure: A new scale for use with diverse groups. Journal of Adolescent Research. 1992;**7**(2):156-176

[84] Branscombe NR, Schmitt MT, Harvey RD. Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. Journal of Personality and Social Psychology. 1999;**77**(1):135-149

[85] Schmitt MT, Branscombe NR. The meaning and consequences of perceived discrimination in disadvantaged and privileged social groups. European Review of Social Psychology. 2002;**12**(1):167-199

[86] Devine PG, Plant EA, Amodio DM, Harmon-Jones E, Vance SL. The regulation of explicit and implicit race bias: The role of motivations to respond without prejudice. Journal of Personality and Social Psychology. 2002;**82**(5):835-848

[87] Butz DA, Plant EA. Prejudice control and interracial relations: The role of motivation to respond without prejudice. Journal of Personality. 2009;**77**(5):1311-1341

[88] Plant EA, Devine PG. Internal and external motivation to respond without prejudice. Journal of Personality and Social Psychology. 1998;**75**:811-832

[89] Meiring L, Subramoney S, Thomas KGF, Decety J, Fourie MM. Empathy and helping: Effects of racial group membership and cognitive load. South African Journal of Psychology. 2014;**44**(4):426-438

[90] Batson CD, Polycarpou MP, Harmon-Jones E, Imhoff HJ, Mitchener EC, Bednar LL, et al. Empathy and attitudes: Can feeling for a member of a stigmatized group improve feelings toward the group? Journal of Personality and Social Psychology. 1997;**72**(1):105-118

[91] Levine M, Prosser A, Evans D, Reicher S. Identity and emergency intervention: How social group membership and inclusiveness of group boundaries shape helping behavior. Personality and Social Psychology Bulletin. 2005;**31**(4):443-453

[92] Bruneau EG, Cikara M, Saxe R. Minding the gap: Narrative descriptions about mental states attenuate parochial empathy. PLoS One. 2015;**10**(10):e0140838

[93] Vorauer JD, Sasaki SJ. Helpful only in the abstract? Psychological Science. 2009;**20**(2):191-197

[94] Paluck EL, Green DP. Prejudice reduction: What works? A review and assessment of research and practice. Annual Review of Psychology. 2009;**60**:339-367

[95] Jordan JV. A relational-cultural model: Healing through mutual empathy. Bulletin of the Menninger Clinic. 2001;**65**(1):92-103

[96] Stolorow RD, Atwood GE. The intersubjective perspective. Psychoanalytic Review. 1996;**83**(2):181-194

[97] Freud S. Group Psychology and the Analysis of the Ego. London: The International Psycho-Analytical Press; 1921

Chapter 4

Introducing Educational Intervention about Empathy and Intercultural Bias

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Additional information is available at the end of the chapter

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Abstract

Literature about empathy and intergroup bias considers a lot of research from many different approaches. However, there is certain degree of consensus that has been achieved in relation to the determination of the behavioral correlate of the empathy. Recently, its importance connected to the pro-social attitude of people has been emphasized, as well as its role played in social conflicts. So, the empathic response has to do with the ability to comprehend the other person and to try to think as the other person thinks, by means of observing him/her, using verbal and no verbal information or other type of evidences approachable from the memory, what is called, perspective taking. Empathy, understood in that way, would play a central role in the pro-social attitude of people. After introducing the most important pillars of this chapter, which are empathy and pro-social behavior, intercultural empathy, intergroup contact and, finally, "empathy, bias and education," different kinds of interventions about bias and empathy in education are presented. We will find that it is not only necessary but possible to put through strategies adapted to different ages and circumstances with a common goal: to improve empathy and control bias through education.

Keywords: empathy, education, intercultural, prejudice, role playing

1. Introduction

As far as the empathy is concerned, literature about the topic considers an important diversity in relation to the delimitation of this construct [1, 2]. The empathy has been defined by Hoffman [3–6] and Strayer and Eisenberg [7] as the affective experience of other person's feelings. However, examined studies demonstrate that it is related to a construct that is able to concede dissimilar approaches from some perspectives that have analogous and

complementary elements which are specially helpful in a research using other perspectives, for instance, from a social, intercultural, psychological or other point of view or considering religion, gender and so on [1, 2, 8–12].

Despite the great variety of approaches, it has been reached a certain degree of agreement in relation to the determination of some behavioral correlate of the empathy. Lately, its importance related to the pro-social attitude of people and its role played in social conflicts has been emphasized [9, 13–19].

In a research about investigations on this topic, Eisenberg [20] conclude that the role of the empathy is key in the moral development, which is an emotional answer that arises from the understanding of the other person's situation, with the result of experimenting the feelings of another person. Thus, the empathic response has to do with the ability to understand the other person and to put oneself in the other person's shoes by the utilization of the observation, verbal information or other kind of approachable information from the memory (perspective taking), by covering the affective reaction that takes place when it is shared an emotional condition. This may produce sadness, uneasiness or anguish. Empathy, understood in that form, would play a very important role in the pro-social attitude of a person [20]. Lately, Li et al. [21] have analyzed the investigation about the empathy and other social fields: emotion, mind theory or "mentalizing" and moral judgments. However, they carried it out from a point of view based on the functioning of the neurology and on the relationship that exists between all the parts of our brain. In the investigation, it is clear that the experimentation by using neuro-images played an important part to prove that we utilize our memories and mental associations of past experiences as the pillars to comprehend the emotions and the cognitive conditions of the others.

If we go further by considering the connection existing between empathy and prejudice, social exclusion and intergroup implicit and explicit attitudes [8, 21–23], we will understand better the reasoning used to stand up for the research and practice related to the use of empathic strategies in multicultural educational environments [13, 24] as well as the use of different programs of intercultural education with the goal of increasing the empathy [25, 26]. To conclude, the empathy is a crucial factor in the creation of social relationships. Therefore, the empathy is an educational need in our schools and society, which are, nowadays, more and more intercultural.

2. Intercultural empathy

The empathy has been widely studied from different perspectives; however, only when it is investigated from a cultural or ethnic point of view, we find out that this field of investigation is barely researched [27–29]. Here, the construct has not been labelled or operationalized in a similar way.

Perhaps the idea of cultural empathy was first utilized and defined by Ridley and Lingle [30]. This construct would go beyond the idea of general empathy, involving understanding

and the recognition of the culture that other person can have. These authors affirm that the culture creates differences, which are normally related to values and expectations, so that the empathic response implicates the mutual comprehension concerning these cultural dissimilarities. Thus, it is revealed that the empathy is connected to cultural differences. It means that the level of emotional adjustment and the level of the empathic interest for other person will differ according to the own culture [31]. This also confirms the concept of cultural empathy. Nevertheless, regardless of the potentiality of this type of contextualized empathy, the investigation about it is scanty [32].

Wang et al. [12], who are conscious of the relevance of the cultural and ethnic elements, enlarged the idea of ethnocultural empathy, which is similar to cultural empathy. It is connected to the concepts of cultural competence and cross-cultural empathy too [12, 27, 33]. Wang et al. [12] defined the ethnocultural empathy as the empathy toward people of ethnic, cultural or racial groups that are dissimilar from one's own. The development of this type of empathy supposes the shortening on discrimination, bigotry and several conflicts, and, at the same time, the comprehension and mutual respect will increase, no matter the ethnic or cultural membership. The development of this ability is much more difficult than the development of the interpersonal empathy, because the perspective of a person conceived as an out-group member has to be assumed. Thus, the other person should be observed in his/her cultural environment to be capable of adopting her/his perspective, and this will be the main distinctive feature of the ethnocultural empathy. In the second place, the ethnocultural empathy implies the self-control of one's own prejudices to a person who is not part of the same cultural or ethnic group. To conclude, the third outstanding characteristic of this kind of empathic ability is that it is not independent from the previous experience that a person has of the other culture.

So, it is evident that some strategies aimed at enhancing ethnocultural empathy are needed and such strategies must be able to increase perspective taking, to develop self-control over one´s own prejudices and to provide positive experiences about other cultures. Taking this evidence into account, it seems necessary to give priority to the "Intergroup interaction approaches" or "Integrated approaches" over the "Individual approaches." The individual approach is based on affective and cognitive strategies which have been tested on laboratory studies. It is unclear how long the positive effects of the strategies last. Besides, there is not much knowledge about the extent to which these strategies are effective in situations outside the laboratory [34].

Regarding integrated approaches, they have to do with using both individual and intergroup interaction approaches. It can be useful to work with some tasks alone, at home, when there is no option to work with partners. In this sense, it is possible to find many texts, videos, etc., aimed at improving empathy and perspective taking. But always considering that the intergroup interaction is preferred

2.1. Intergroup contact

Most interventions are not properly evaluated, so the recommendations are limited in terms of transferability; however, in terms of working toward best practice and increasing what

we know, it is a useful first step to highlight the evidence based on "what works" to reduce prejudice.

About the kind of intervention, we have already indicated that it is more appropriate the intergroup interaction. According to this, Bargal [35] emphasizes the importance of longer-term interventions:

> *The change of negative intergroup attitudes, stereotypes and prejudices, and the provision of conflict management skills requires a long and incremental process. From our own significant experience in this process and based on the experience of others, we learned that intergroup interventions demand sacrifices from participants, facilitators, and organization officials and leaders. Social scientists who want to engage in it should abandon scientific models of a short-term, one-shot intervention and evaluation and adopt long-range, action-research designs (p. 57).*

Concerning these conditions for positive outcomes when different groups are brought into contact, Allport [36] was the one who indicated the criteria, the most important are:

- Equal status. The groups must compromise in the same way. The people need to belong to equal backgrounds, and they must possess similar characteristics. Dissimilarities in academic environments, wealth, skills, or experiences should be shortened if they are about to interfere in the perceptions of prestige and rank.
- Same objectives. Groups should carry out common tasks and share them as a common aim, and it is usually named a superordinate goal, an aim that is achieved if the members of two groups work together by combining their efforts and resources.
- Personal interaction. This situation needs informal and personal intercommunication with the outgroup members. The constituents of the problematic groups have to mix up with one another. Without this criterion, they cannot really learn about each other and the important cross-group friendships do not take place.
- Intergroup cooperation. The members of the groups have to work for their common goals without competition. Groups should pursuit common goals by working together.
- Support of authorities, law or customs. The groups must recognize some authority responsible for the contact and interactions between the groups. They have to stimulate neighborly, useful as well as egalitarian attitudes and denounce in-group–out-group comparisons.

We can also affirm that stereotyping, prejudice and discrimination are clearly related to a lack of empathy which becomes higher when it is focused on a different and stigmatized group; but despite the huge research that comes to confirm these facts, we still need to highlight the necessity to carry out strategies which contemplate these results [37–39].

Taking into account some of these studies, we would like to summarize and concentrate our attention in what we consider crucial in the educational field and directly related to empathy, intergroup contact and cooperative learning.

3. Empathy, bias and education

After briefly summarizing the most important pillars of this chapter, we are going to review the different kinds of interventions about bias and empathy in education. From different experimental manipulations to proposals for school syllabus, we will find that it is not only necessary but possible to put through strategies adapted to different ages and circumstances with a common goal: to improve empathy and control bias through education.

The results from a study carried out by Konrath et al. [40], founded on a survey of about 14,000 students, reflect that the average level of "empathic concern," decayed by 48% between the years 1979 and 2009. There was a sharp decline between 2000 and 2009. The authors of the research argue that the decline can take place because of the spread of a narcissist feeling between the young population, the increasing predominance of the technology and media use in everyday life, and a reduction of the family size, due to the fact that having brothers or sisters can teach some empathy. Besides, other factor is the pressures on young people to succeed academically and professionally. The study also suggests that maybe parents are now more controlling and less warm and responsive, they are not really interested in teaching their sons to think about others' feelings, less willing to foster their children's emotional expressiveness, less tolerant toward the dependent behavior, unhappier with the sacrifices that parenting needs, and they are more likely to accept their children's aggression.

Again, the school is demanded to complete another responsibility that was usually attended at home years ago. On the other hand, empathy can be better developed, practiced and even taught in an environment like the classroom, that is, under professional supervision.

3.1. General framework

Organizing the work attending to the educational aims related to bias, we need aims and contents. The core aim, as we have seen before, is focused on:

- to enhance ethnocultural empathy:
  - to increase perspective taking
  - to develop self-control over one´s own prejudices
  - to provide positive experiences about other cultures

And these main aims work together with another related content:

- Cooperative learning
- Intergroup contact

The next task is to consider the criteria exposed in previous pages and focus on activities. It is important to note that there is no one receipt. We need to consider many variables: background,

context, the previous experience of students, previous work with that group and so on. Once you have clarified the aims, contents and criteria, you only need to design, choose or modify the activities to carry out. The online resources are usually intended to work both individually and classroom aims. The most interesting resources to perform these tasks are:

- https://startempathy.org/resources/
- http://empathymuseum.com/(and Library: http://empathylibrary.com/)
- https://www.equalityhumanrights.com/en/lesson-plan-ideas
- http://www.rootsofempathy.org/
- http://empathy.ashoka.org/principles-strategies-and-toolkit
- http://en.unesco.org/9th-unesco-youth-forum/youth-researchers-invoking-empathy-and-activating-young-people
- http://classroom.kidshealth.org/classroom/(Teachers Guides/Personal Health)
- http://www.tolerance.org/lesson/developing-empathy
- http://www.actforyouth.net/youth_development/professionals/sel/social_awareness.cfm
- http://cultureofempathy.com
- http://www.empathyed.org/

Videos:

- https://youtu.be/lN4MRYIoCS0
- https://youtu.be/1Evwgu369Jw
- https://www.ted.com/talks/jeremy_rifkin_on_the_empathic_civilization
- https://www.ted.com/talks/sam_richards_a_radical_experiment_in_empathy

Once a general framework has been stablished, we would like to focus on the preferred task for students, according to my own experience, this is the role playing. The main strength of this strategy is not only its capability for paying attention to all the aims and contents we need to work but also its intrinsic motivation.

3.2. Role playing

Palomo González [41] states that the origin of moral judgment is the "role-taking" or capacity to understand the life from another person's perspective. Kohlberg [42] reckons that these, together with the cognitive development, are essential elements for the moral development and it is an intermediary between cognitive capacities and the rank acquired in the moral development.

When creating dynamics with the objective of reducing the intergroup bias using procedures as the role playing, it is essential to act with caution. When this strategy is used for the

induction of empathy, it makes the endogroup to come closer to the exogroup in an implicit evaluative level, in an indirect way and avoiding the indirect effect.

However, this effect is not shared by all the manipulations and modulating variables, despite using role playing. For example, Alfred et al. [43] realized that, in an activity of role playing done with the objective of avoiding smoking, the participants who acted as if they were smokers incremented their propensity to smoke. This is connected to the theory of the ideomotor action by William James and with the investigation that demonstrated the link between perception and behavior, link that is automatic [44, 45]. Consequently, the formative activities created with the objective of deconstructing the bias, the characteristics observed by the educators in people, whose perspective is going to be adopted, should be assessed in advance. Thus, if one of these features is not socially desirable, it is possible that the participants, mainly, those who are more empathetic, may adopt them as their own, at least temporally.

To establish pedagogically helpful guidelines, three crucial issues must be considered when designing these kinds of strategies of the control of the intergroup bias. Following the stages in the dynamic of the most extended functioning of the role playing, we are going to follow the pedagogical orientations of studies referred during this chapter in the next sections: 1. previous diagnosis and creation of strategies; 2. cognitive conflict and role playing; and 3. final consideration.

3.2.1. Previous diagnosis and creation of strategies

It is important to start gathering the perceptions that the participants in the formative program have about the stereotyped group. It is crucial to do an analysis of the stereotypes that the participants have toward the exogroup, so we can create heterogeneous groups, thanks to this research, and assessing the evaluative tone of the peculiarities attributed to the external group. Besides, it is important to investigate the opinions toward attitudes that are going to be introduced in the activities to increment the empathy. So, the step of moral development in which the group is will be known, and the thematic nucleus that we have to work about will be stablished

According to this idea, Portillo Fernández [46], based on Kohlberg, collected in **Table 1** a structure that is useful to evaluate the group and to create interventions founded on the role playing. The phases, proposed by Kohlberg in the moral development that should be taken into account in the initial diagnosis, occur after the zero phase, when everything that the boy or girl wants is regarded as positive because it is desired by them. Once the premoral level has already got through, the development will occur, following **Table 1**.

With this previous diagnosis as a starting point, the aims derived of the detected necessities will be mapped and the correct program to assist these necessities is going to be created. Apart from other specific achievements, it will be important to set up some minimum objectives aimed at:

- Easing the reduction of stereotypes and prejudices.
- Developing empathy.
- Increasing the availability. Thus, it will be facilitated the activation of objectives and socially desirable behaviors (i.e., goals connected to justice, according to the evidence provided [47–49].

Level	Stage
Level 1: Pre-conventional • Before 9 years old • Self-centered	1. Obedience and punishment orientation (*How can I keep away from punishment?*) 2. Self-interest orientation (*What's in it for me?*) (*Paying for a benefit*)
Level 2: Conventional • Teenagers and some adults • Social	3. Interpersonal agreement and conformity (*Social norms*) (*The good boy/good girl attitude*) 4. Authority and social-order maintaining orientation (*Law and order morality*)
Level 3: Post-conventional • Some adults • Moral	5. Social contract orientation 6. Universal ethical principles (*Principled conscience*)

Table 1. Kohlberg's moral development (adapted from Portillo Fernández [46]).

Bearing in mind the former diagnosis of the individual variables and using a pilot activity,[1] which could consider the stages that are in **Table 1**, so that it can be based on the use of the hypothetical dilemmas [42, 50], we should distinguish the stage in which the participants are, as well as the levels of the independent critic variables, that is, those that will define how it can affect the interventions. Hence, the grouping of the participants and the basic planning of this diagnosis are accomplished, which is adequate to the proposed aims.

Taking into account these approaches and the diagnosis, following Linde Navas [51], we must consider that, although the levels of moral development by Kohlberg can be useful, the moral dilemmas used are not updated now. So, it would not be a cognitive conflict for the participants. It is the teacher's task to create dilemmas able to divide the opinion of the group in a meaningful way. This issue is going to be developed in the following section.

Taking into account the initial diagnosis, it is important to emphasize that this phase is crucial. Furthermore, it has a recurring nature, because it should be implemented when an evolution in the group is perceived. Not only because the diagnosis conditions the designs in general (i.e., thematic evolution and the use of techniques), but also due to the important role of the formation and restructuration in the groups.

As far as the problem of the intergroup bias is concerned, it is preferred including several sessions with the objective of knowing the exogroup, because it is possible that the participants of a formative process do not know the exogroup people in deep. First of all, it has to be diagnosed; consequently, it is another cognitive challenge for educators. To conclude, after

[1]The role playing is essential to know all the levels of moral development. Kohlberg [42] defines the stages according to the way the assumption of a role is understood concerning its place in society. He thinks that the role taking and the cognitive development is a crucial condition to moral development and it is also an intermediary between the cognitive abilities and the level achieved in the moral development [41].

the initial diagnosis and previous to initiate the role playing activity, the teacher should be capable to answer these questions:

- What do the participants think they know about the exogroup? And what do they really know?
- How would they act using their moral scheme? Which stage are they in?
- Which are their levels in the independent critic variables, especially in empathy?

3.2.2. Cognitive conflicts, role playing

In order to answer the questions of the former section, it is necessary to formulate the scheme of intervention. Therefore, the teacher could carry out some activities, whose effectiveness has been demonstrated. These activities should be used progressively, bearing in mind the stage of each participant. Hence, basic pedagogical principles must be used, as the proximal zone of development. In this case, it can be spread from the cognitive field to the moral and emotional ones. It means that it is always important to know the moral stage of the participants to be capable to guide them step by step, across all the stages of the development.

Using a logical scheme, some activities can be followed to contribute to cut down the bias discovered in the participants of a formative process. The first activity that has the objective of blurring stereotypes may be oriented, specifically, toward to have a better knowledge of a collective, by knowing an exemplary member of this community. If it is not possible to find a relevant example, it will be feasible to choose a person of the exogroup, which can take part in a short chat with the students, so they can possibly deny the stereotypes. What is more, it is useful to watch a program designed to show the social reality avoiding the unfair generalizations (i.e., perception of homogeneity of the exogroup). There are other elements that can be utilized, for instance, international governmental and nongovernmental organizations that have created resources to be used in these types of activities can be found: International Amnesty (http://www.es.amnesty.org/redescuelas/materiales-para-el-profesorado/materiales-didacticos/), the United Nations, (http://www.un.org/en/holocaustremembrance/educational.shtml), the UNESCO (http://unesdoc.unesco.org/images/0014/001478/14787e.pdf), the European Commission (http://ec.europa.eu/education/archive/raci/intro_en.htmi) and so on.

In relation to this aim and considering this previous activity to determine the role playing, it is helpful to start little by little with the contact between the endogroup and the exogroup. To carry out this activity, we can use an individual work of investigation, for instance, the participants are asked to collect histories of members of the exogroup with the aid of an instrument like the interview.

If a teacher wants to utilize this possibility, and considering the results of the experimental series of previous research [52], It would be necessary the previous analysis of the topic of the investigation that the student is going to carry out. To avoid nondesired effects, it is better not to use thematic nucleus with a confrontation positioning, like “they against us.”

To conclude, and with the aim of finding an answer to the aims in the former chapter, this can be the design:

- Shortening the stereotypes by means of the knowledge of the exogroup: 1st stage of contact (of the group and in the place of formation: documentation, exemplary member, talk and so on)
- Development of the empathy using a cooperative work: recognition of some individual characteristics, organization of heterogeneous groups, presenting dilemmas, guided dialogues and second stage of contact (guided, individual and interpersonal: investigation, interviews, shared activities inside and outside classroom)
- Approach to the exogroup, activations of equal goals using the perspective taking and the role playing: third stage of contact (autonomy, prioritize the contact between members of the exogroup)

The scheme is not a representation of fixed levels, that is, the teacher could mix or utilize them at the same time following some necessities of the group. As far as the last stage and the rules of the role playing is concerned, it must be observed that an activity of role playing can be carry out in different ways. Bearing this premise in mind and if the activity is not carried out accurately, it may be possible to reinforce behaviors as opposed to the behaviors which are planned in the objectives. After that, it is also important to contemplate what the main pillars of a dynamic based on this strategy are when the objective is the lowering of the intergroup bias.

This program must consider several techniques and strategies. The strategies have demonstrated efficacy augmenting the empathy and in the battle against bias:

- Cooperative learning [53]. The heterogeneity and the positive interdependence are habitual components in the cooperative learning; moreover, when creating strategies focused on the fight against bias, they are quite helpful [34, 54]. The dynamics that have this methodology can be enhanced, thanks to different opinions, and competitiveness will be avoided as well as the atmosphere of the group and the interpersonal relationships is about to be improved.
- Moral dilemmas of Kohlberg [41, 55]. They can enrich the planning of a structure with crucial elements about the environments or situations to dialogue about. The moral dilemmas of Kohlberg are not only a paradigm of moral development that is indispensable in the creation of stages and in the comprehension of stages of moral maturing, but also it can be an imagined interaction, really helpful in a nonheterogeneous group with respect to race [56].

These strategies can be added to the strategies studied:

- Contact, in which we can group the activities based on exemplary members, interviews, discussions, roundtable discussions and documentation (readings, documentaries on TV and so on)
- Classic perspective taking
- Role playing

The techniques mentioned should not be grasped as exclusive. They have a value that is added to the strategy designed by the teacher. Hence, they must be used in the program because the group can benefit from the combination of all of them.

The next guidelines can be thought as the most relevant of the process of organizing the lines in the second stage of execution:

- To present the cognitive process: it is more important to work with moral dilemmas than utilize real facts which are proximal to the vital or professional context of the participants. Then, mingling the dilemmas with the proposed aims and the real life of the students, it is possible to motivate and involve them emotionally. Simultaneously, the dialogue and a constructive environment must be encouraged [51].
- The teacher's intervention. In the stage of execution, it is essential the introduction of several elements when the interpretation of the participants in role playing activities is in process. Hence, the educative character of this activity can be improved. One option is the establishment of previous guidelines or the intervention if it is necessary. Nevertheless, the teacher should evaluate the interventions of the participants and do the necessary readjustments, particularly when the progress of the dialogue is not the one we expect. Nevertheless, the participants must not be silenced when they estate a sincere opinion, but the teacher is also there and they must pose correct questions to guide the dynamic in a proper way.
- The election of the issue. The design has to be carried out following the previous diagnosis. If there is a problem related to sexism, for instance, toward the exogroup, the teacher has to take this issue into consideration in the grouping of the students. Besides, the teacher must select an acceptable progression of the interaction, trying to avoid sexism until he/she thinks that the participants are ready to face this dilemma. If the teacher thinks that he or she must intervene, it is important to consider previously the interventions that the participants can do, and be prepared to reorientate the activity when necessary.
- Evolution of the strategy. When the activities are done with a correct scheme, the lowering of stereotypes, prejudices and the increase of empathy are achieved. Before the execution of the role playing, it is essential to do other diagnosis to reinforce the fact that the collective imaginary has properly improved. Likewise, if it is not recognized a negative assignment in the roles in the members in the initial diagnosis, a dynamic of role playing in which the participants play the role of members of the exogroup can be done. Nevertheless, it is crucial to identify the features that the participants think to be more different from their values scale. Consequently, we should work on this separately.

All in all, the teacher's role in the dynamics has to do with guiding the election of the topic and creating, with the students, an appropriate context-setting for the moral development. The dilemma should be compelling and stimulating to think about it (see [51, 55]). Besides, apart from establishing the adequate cognitive conflict to the participants, the evolution of the dynamic should be controlled by the teacher, by keeping the harmony between reflection

and spontaneity. The reflection is an essential issue, and however, it is normally done when the role playing has finished. Nevertheless, following an educative perspective, it must be contained in the dynamic, by using intermediate guidelines in the interpretation, changes of roles, of context and so on.

3.2.3. Reflection

It is a crucial stage in the role playing, and it is going to be utilized as diagnosis for the following dynamics by conditioning, for instance, in how the participants are grouped. It means that the grouping will be different following the different rhythms of evolution of the participants; then, it is important to work with heterogeneous groups.

The reflections allow the consolidation of the knowledge that has been learnt, to think rationally about what took place in the dynamic, and mainly, a lot of possible nonbiased behaviors will be provided, thanks to the collective elaboration.

However, apart from the empiric restrictions and the restrictions stressed by the former theoretical frame. Possibly, this activity can be brought closer to the cooperative learning that Paluck and Green [34] consider crucial in the battle against bias.

Imitating the first experiments done by Kurt Lewin in 1948 (see [57]), the other partners, as audience, can observe the activity, and they can also take part as a group in this final stage. Besides, the reflection will be more meaningful thanks to the new different points of view and the discussion can be directed toward pro-social behaviors that can be part of the student's repertory.

Summarizing, the teacher has to guide the students following the proposed questions. The teacher's attitude must be reflexive. It is also important to take into account some features of the language, actions and forms.

We can consider many interesting readings about the topic, with particular cases and their correspondent reflection (i.e., [58]).

Apart from this, we cannot forget that the key element in this investigation is the empathy, so the most important lesson to be learnt in the process of reducing the intergroup bias is the basic equality of all human beings. Consequently, taking other person`s perspective and feeling, the way she/he feels is an approach that makes you to perceive more similitudes than differences in our beliefs, attitudes and behaviors. It is important to emphasize the significance of the context, which is cultural and circumstantial conditioning; besides, it makes the exogroup and endogroup closer.

All in all, this chapter has to be regarded as part of other readings in which helpful clues can be found to fight intergroup bias. Particularly, the attention must be focused on an intervention of an easily extrapolated dynamic to educative contexts. The contribution that social sciences do to the pedagogical ones should be taken into consideration. The classic perspective taking, the role playing and other techniques, suppose an essential advance concerning the fighting against intergroup bias, now and in the future of the professionals of the education.

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References

[1] Fernández-Pinto I, López-Pérez B, Márquez González M. Empatía: Medidas, teorías y aplicaciones en revisión. Anales de psicología. 2008;**2**:284-298

[2] Gerdes KE, Segal EA, Lietz CA. Conceptualising and measuring empathy. British Journal of Social Work. 2010;**40**(7):2326-2343

[3] Hoffman ML. Developmental synthesis of affect and cognition and its implications for altruistic motivation. Developmental Psychology. 1975;**11**:607-622

[4] Hoffman ML. The development of empathy. In: Rushton JP, Sorrentino RM, editors. Altruism and Helping Behavior Social, Personality and Developmental Perspectives. New Jersey: L.E.A.; 1981

[5] Hoffman ML. Development of prosocial motivation: Empathy and guilt. In: Eisenberg N, editor. The Development of Prosocial Behavior. New York: Academic Press; 1982

[6] Hoffman ML. Empathy, guilt and social cognition. In: Overton WF, editor. The Relationship Between Social and Cognitive Development. London: L.E.A.; 1983

[7] Strayer J, Eisenberg N. Empathy viewed in context. In: Eisenberg N, Strayer J, editors. Empathy and its Development. New York: Cambridge University Press; 1987. pp. 389-398

[8] Albiero P, Matricardi G. Empathy towards people of different race and ethnicity: Further empirical evidence for the Scale of Ethnocultural Empathy. International Journal of Intercultural Relations. 2013;**37**:648-655

[9] Barnett G, Mann RE. Empathy deficits and sexual offending: A model of obstacles to empathy. Aggression and Violent Behavior. 2013;**18**:228-239

[10] Hardy SA, Walker LJ, Rackham DD, Olsen JA. Religiosity and adolescent empathy and aggression: The mediating role of moral identity. Psychology of Religion and Spirituality. 2012;**4**(3):237-248

[11] Harris ST, Picchioni MM. A review of the role of empathy in violence risk in mental disorders. Aggression and Violent Behavior. 2013;**18**(2):335-342

[12] Wang YW, Davidson MM, Yakushko OF, Savoy HB, Tan JA, Bleier JK. The Scale of Ethnocultural Empathy: Development, validation, and reliability. Journal of Counseling Psychology. 2003;**50**(2):221-234

[13] Belacchi C, Farina E. Feeling and thinking of others: Affective and cognitive empathy and emotion comprehension in prosocial/hostile preschoolers. Aggressive Behavior. 2012;**38**(2):150-165

[14] Butrus N, Witenberg RT. Some personality predictors of tolerance to human diversity: The roles of openness, agreeableness, and empathy. Australian Psychologist. 2012;**48**:290-298

[15] Hodges SD, Clark BAM, Myers MW. Better living through perspective taking. In: Positive Psychology as Social Change. New York, NY, USA: Springer Science + Business Media; 2011. pp. 193-218

[16] Shen YL, Carlo G, Knight GP. Relations between parental discipline, empathy-related traits, and prosocial moral reasoning: A multicultural examination. Journal of Early Adolescence. 2013;**33**(7):994-1021

[17] Welp LR, Brown CM. Self-compassion, empathy, and helping intentions. Journal of Positive Psychology. 2014;**9**(1):54-65

[18] Sanmartín MG, Carbonell AE, Baños CP. Relationships among empathy, prosocial behavior, aggressiveness, self-efficacy and pupils' personal and social responsibility. Psicothema. 2011;**23**:13-19

[19] Zembylas M. The emotional complexities of "our" and "their" loss: The vicissitudes of teaching about/for empathy in a conflicting society. Anthropology & Education Quarterly. 2013;**44**(1):19-37

[20] Eisenberg N. Emotion, regulation, and moral development. Annual Review of Psychology. 2000;**51**:665-697

[21] Li W, Mai X, Liu C. The default mode network and social understanding of others: What do brain connectivity studies tell us. Frontiers in Human Neuroscience. 2014;**8**:74

[22] Shih MJ, Stotzer R, Gutierrez AS. Perspective-taking and empathy: Generalizing the reduction of group bias towards Asian Americans to general outgroups. Asian American Journal of Psychology. 2013;**4**(2):79-83

[23] Shih M, Wang E, Trahan Bucher A, Stotzer R. Perspective taking: Reducing prejudice towards general outgroups and specific individuals. Group Processes & Intergroup Relations. 2009;**12**(5):565-577

[24] Numata J. Effects of a letter-writing task on empathy toward Japanese-Brazilians as outgroup members: An educational method for intercultural understanding in universities and colleges. Psychologia. 2013;**56**:45-56

[25] Peek E, Park C. Effects of a multicultural education program on the cultural competence, empathy and self-efficacy of nursing students. Journal of Korean Academy of Nursing. 2013;**43**:690-696

[26] Todd AR, Bodenhausen GV, Galinsky AD. Perspective taking combats the denial of intergroup discrimination. Journal of Experimental Social Psychology. 2012;**48**(3):738-745

[27] Green JW. Cultural Awareness in the Human Services: A Multi-Ethnic Approach. 3rd ed. Toronto: Allyn & Bacon; 1998

[28] Lawrence D, Zayas LZ. Cross-cultural empathy and training the contemporary psychotherapist. Clinical Social Work Journal. 2001;**29**:245-258

[29] Rasoal C, Eklund J, Hansen EM. Toward a conceptualization of ethnocultural empathy. Journal of Social, Evolutionary, and Cultural Psychology. 2011;**5**:1-13

[30] Ridley CR, Lingle DW. Cultural empathy in multicultural counselling: A multidimensional process model. In: Pedersen PB, Draguns JG, editors. Counseling Across Culture. 4th ed. Thousand Oaks: Sage; 1996. pp. 21-46

[31] Trommsdorff G, Friedlmeier W, Mayer B. Sympathy, distress, and prosocial behavior of preschool children in four cultures. International Journal of Behavioral Development. 2007;**31**:284-293

[32] Howe D. Empathy: What it is and Why it Matters. Basingstoke: Palgrave Macmillan; 2012

[33] Dyche L, Zayas LH. Cross-Cultural Empathy and Training the Contemporary Psychotherapist. Clinical Social Work Journal. 2001;**29**(3):245-258

[34] Paluck EL, Green DP. Prejudice reduction: What works? A review and assessment of research and practice. Annual Review of Psychology. 2009;**60**:339-367

[35] Bargal D. Group processes to reduce intergroup conflict: An additional example of a workshop for Arab and Jewish youth. Small Group Research. 2008;**39**:42-59

[36] Allport G. The Nature of Prejudice. Reading, MA: Addison-Wesley; 1954

[37] Brown R, Hewstone H. An integrative theory of intergroup contact. In: Zanna M, editor. Advances in Experimental Social Psychology. Vol. 37. San Diego, CA: Academic Press; 2005. pp. 255-343

[38] Capozza D, Trifiletti E, Vezzali L, Favara I. Can intergroup contact improve humanity attributions? The International Journal of Psychology. 2013;**48**(4):527-541

[39] Reimer NK, Becker JC, Benz A, Christ O, Dhont K, Klocke U, et al. Intergroup contact and social change: Implications of negative and positive contact for collective action in advantaged and disadvantaged groups. Personality and Social Psychology Bulletin. 2017;**43**:121-136

[40] Konrath SH, O'Brien EH, Hsing C. Changes in dispositional empathy in American college students over time: A meta-analysis. Personality and Social Psychology Review. 2011;**15**(2):180-198

[41] Palomo González AM. Laurence Kohlberg: teoría y práctica del desarrollo moral en la escuela. Revista Interuniversitaria de Formación del Profesorado. 1989;**4**:79-90

[42] Kohlberg, L. Moral stage and moralization: The cognitive-developmental approach. In: Lickona T., editor. Moral development and behavior. New York: Holt, Rinehart & Winston; 1976. pp. 31-53

[43] Alfred LM, Erkki V, Riku L. Role playing in smoking prevention: Use caution. The Journal of School Health. 2000;**70**(1):3

[44] Bargh JA. Bypassing the will: Toward demystifying the nonconscious control of social behavior. In: Hassin RR, Uleman JS, Bargh JA, editors. The New Unconscious. New York: Oxford University Press; 2005. pp. 37-58

[45] Dijksterhuis A, Chartrand TL, Aarts H. Effects of priming and perception on social behavior and goal pursuit. In: Bargh JA, editor. Social Psychology and the Unconscious: The Automaticity of Higher Mental Processes. New York: Psychology Press; 2007. pp. 51-131

[46] Portillo Fernández C. El desarrollo moral. 2005. Available from: http://ficus.pntic.mec.es/~cprf0002/nos_hace/desarrol.html

[47] Moskowitz GB, Gollwitzer PM, Wasel W, Schaal B. Preconscious control of stereotype activation through chronic egalitarian goals. The Journal of Personality and Social Psychology. 1999;**77**:167-184

[48] Moskowitz GB, Salomon AR, Taylor CM. Implicit control of stereotype activation through the preconscious operation of egalitarian goals. Social Cognition. 2000;**18**:151-177

[49] Moskowitz GB, Li P. Egalitarian goals trigger stereotype inhibition: A proactive form of stereotype control. Journal of Experimental Social Psychology. 2011;**47**(1):103-116

[50] Kohlberg L. The Psychology of Moral Development: The Nature and Validity of Moral Stages. San Francisco: Harper and Row; 1984

[51] Linde Navas A. ¿Tienen vigencia los dilemas clásicos de Kohlberg en Educación Moral? Un estudio de campo. Campo Abierto. 2009;**28**(2):137-149

[52] González González H. La toma de perspectiva en el control del sesgo intergrupal: variables moduladoras de tipo individual y pautas pedagógicas. Córdoba: Universidad de Córdoba, Servicio de Publicaciones; 2011

[53] Santos Rego MÁ, Lorenzo Moledo MM, Priegue Caamaño D. Aprendizaje cooperativo: práctica pedagógica para el desarrollo escolar y cultural. magis. Revista Internacional de Investigación en Educación. 2009;**2**:289-303

[54] Aronson E, Osherow N. Cooperation, prosocial behaviour, and academic performance: Experiments in the desegregated classroom. Applied Social Psychology Annual. 1980; **1**:163-196

[55] Garz D. Lawrence Kohlberg: An Introduction. Leverkusen: Barbara Budrich Publishers; 2009

[56] Crisp RJ, Turner RN. Can imagined interactions produce positive perceptions? Reducing prejudice through simulated social contact. American Psychologist. 2009;**64**:231-240

[57] Citron AF, Chein I, Harding J. Anti-minority remarks: A problem for action research. Journal of Abnormal and Social Psychology. 1950;**45**:99-126

[58] Brown B. Desaprender la discriminación en Educación Infantil. Madrid: Morata; 2009

Chapter 5

The Influence of Suffering, Social Class, and Social Power on Prosociality: An Empirical Review

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Additional information is available at the end of the chapter

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Abstract

An emerging body of research has shed light on the effects of social-environmental factors, such as exposure to suffering, social class, and social power on prosocial orientation (i.e., empathy and compassion). This chapter aims to provide an overview of these areas of research that examined how the aforementioned social-environmental factors may accentuate or attenuate one's tendency to be prosocial. In addition, this chapter explores the theoretical implications across these areas and its potential for future research.

Keywords: empathy, compassion, adversity, status, power, suffering, prosociality

1. Introduction

Some may argue that we live in the least violent and turbulent of times in history [1] but that does not overshadow the fact that suffering is still widespread across the globe [2, 3]. Much of human history has been marred by events of immense hardship and suffering but that has never held back our species from thriving and flourishing. The selfish gene hypothesis suggests that the capacity for prosociality is inherently adaptive for a social species (i.e., humans and other primates) and is a stable strategy for increasing evolutionary fitness [4]. This hypothesis may explain how prosocial traits like empathy have survived the rigorous trials of natural selection as it is through our ability to exercise empathy that we are able to form tribes and societies that are resilient.

In this chapter, we discuss the effects of social-environmental factors, such as adversity and suffering, on empathy and the relevant outcomes. On the other hand, we also examine how being in a position of privilege (i.e., having social power and status) could affect one's

capacity of empathy and its implications. Apart from exploring these topics by examining existing peer-reviewed research, we also discuss the implication of these findings on future research questions.

2. Suffering and prosocial orientation

Given the negative effects of adversity on many psychological phenomena, one might debate if the pain and hardship associated with adversity reduces individuals' capacity for empathy, thereby inhibiting behaviors meant to alleviate the distress of suffering others. Intuitively, one is likely to reason that suffering and hardship are likely to bring about negative downstream consequences such as the impairment of psychological and social functioning. As such, it is no surprise that there is a large body of research examining adversity's lasting effects, linking it to psychopathology and other maladaptive tendencies, including major depression, post-traumatic stress, and related affective disorders [5–7]. Beyond direct associations with psychopathology, it was posited that some individuals who had a brush with adversity develop negative perceptions of people and the environment around them. While those who are free from past trauma tend to hold beliefs that the world is just, meaningful, and benevolent, those who were exposed to adverse life events often exhibit a diminished belief in a benevolent or meaningful world characterized by virtue [8]. In one instance, Poulin [9] found that exposure to violence-related events predicted subsequent decrease in benevolence beliefs. That is, those who had traumatic experiences of being victimized are less likely to harbor humanistic beliefs that the world around them and the people at large are benevolent. In support of this notion, Blum et al. [10] published a study that demonstrated an association between frequent exposure to different types of negative life events (e.g., illness, violence, victimization, and disasters) and altered risk perception. They found that individuals were more likely to perceive an increased likelihood of hazards occurring for oneself, to a close other, or to their community within a 2-year period after the onset of negative life events. They suggested that these altered perceptions of increased risk can be attributed to a reduction in benevolent beliefs.

Along the same lines of investigation [9], it was found that injury- and illness-related adversity predicted decreases in meaningful beliefs. That is, those who have suffered much, by way of physical and mental aliments, tend to perceive that life has no meaning or purpose. Other researchers found that children who have experienced parental divorce were pessimistic about their future relationship outcomes with their partners and that these pessimistic views were tied to their assumptions about people and their lack of benevolence. In addition to the aforementioned finding, the same researchers found that trust beliefs of these children were diminished when they experienced continuous conflicts within their families [8].

As suffering is part of the human condition, the examination of suffering and its deleterious downstream consequences on the individual is necessary. While it is extremely important to study the negative effects of suffering for the purpose of etiology and intervention, some researchers are building up interest in examining the opposite, that is, posttraumatic growth. In fact, studies on human resilience in the face of potentially traumatic events seem to warrant

this examination. For instance, some literature [2, 11] suggested that there is much variability in how individuals react and recover from potentially traumatic events: (1) some individuals (5–15%) exhibited chronic dysfunction, displaying elevated symptoms of dysfunction following the onset of potentially traumatic events; (2) a small minority (0–15%) had a delayed response to potentially traumatic events, showing a gradual elevation of dysfunction over time; (3) some, on the other hand (15–25%), demonstrated steady recovery over time; (4) an even smaller minority (5–10%) of the sampled population demonstrated improved adjustment to potentially traumatic events, showing rapid recovery from dysfunction within a few months of the onset of trauma; and (5) a large portion of the sampled population (35–65%) showed minimal-impact resilience, demonstrating little to no elevation in dysfunction following the exposure to potentially traumatic events. What is astounding about the study of resilience following traumatic experiences is the fact that a majority of individuals show rapid recovery or almost no dysfunction following the onset of adverse life experiences. In light of such illuminating evidence, it seems that we are more resilient that we suppose. Therefore, if dysfunction and distress is not the norm, could we instead expect growth from experiences of adversity?

Some researchers do allude to the notion that individuals can grow from trials and tribulations. For example, Seery and colleagues [12] found evidence to support the view that individuals who have experienced stressful events are likely to develop greater resilience in the follow-up. However, this growth in resilience is nonlinear. That is, individuals who have experienced low levels or high levels of stressful life events tend to not exhibit this growth in resilience. Only those who have experienced moderate levels of stressful life events have increased resilience toward future stressful events. Furthermore, qualitative studies have provided some preliminary evidence that other types of psychological growth are possible, which can be broadly classified into four categories: (1) changes in self-perception (the ability to feel, express, and process feelings within the self, recognizing one's own strengths and weaknesses), (2) gaining new perspectives on life (positive changes in worldviews, acceptance of the past and present), (3) changes in relationship (improvement in interpersonal relations), and (4) changes in philosophy of life [13]. When 39 empirical studies were reviewed, it was found that individuals can experience positive changes in the form of increased resiliency and coping toward subsequent stressors [14]. However, many studies of posttraumatic growth are qualitative in nature (i.e., case studies); as such, more scientifically rigorous studies that adopt quantitative approaches are needed to further solidify the links between adversity and personal growth.

2.1. Suffering and prosocial growth

Does society disintegrate into chaos and lawlessness in the face of disasters or do we come together in solidarity to overcome the odds? If the evolutionary explanations and arguments for the adaptiveness of empathy were to hold, it should be reasonable for us to posit that experiences with hardship and suffering could lead to increases in empathy and subsequent prosocial behavior as a response to adversity.

While the general media might focus on pillaging and looting in the aftermath of natural disasters, research on disaster-affected communities paints a different picture. In fact, it was observed that communities that were affected by disasters (e.g., hurricanes and superstorms)

were likely to form "altruistic communities" that band together to minimize the impact of the disaster [15]. Moreover, disaster exposure was a predictor of being a provider of help which could take the form of social (e.g., assurance, affection, and closeness), tangible (e.g., money, and shelter), and informational support (e.g., situational information, and aid-related information) which supports the notion that those who have suffered more tend to give more as well. Such prosocial tendencies may serve an important function for the survival of the community as the building of social capital between individuals can only serve to boost reciprocal altruism and cooperation in times of hardship. Additional studies of "altruistic communities" have lend credence to the adaptiveness of prosociality in the face of adversity. It was found that individuals who were involved in altruistic communities were more likely to report feelings of interpersonal connectedness, greater sense of community, and more trusting attitudes toward people. These individuals were also more likely to report better social well-being and were less likely to withdraw socially in the aftermath of disasters. Along the same lines of research as Kaniasty and Norris [15], Vezzali and colleagues [16] studied children who were affected by two major earthquakes. They found that symptoms of posttraumatic stress were positively associated with a tendency to help other survivors and to build social bonds, possibly as a coping mechanism. Their findings suggest that these children were likely to identify with others who were implicated in the earthquakes; therefore, including suffering others as part of the self or in-group.

Victims of sexual assault were also likely to exhibit greater prosocial orientation toward other victims of a similar crime [17]. It was found that sexual assault victims reported more empathic responses to a rape victim whose account was presented on a video recording than did women who had not experience such assaults. It was proposed that this increase in empathy is mediated by perceived self-other similarity. This study is suggestive of a potential mechanism in which experienced adversity might lead to prosocial growth. In other words, people who have suffered severely may be more ready to engage in empathy in response to the suffering of others because they feel similar to the suffering target.

In a more controlled environment, Vollhardt and Staub [18] were able to test the notion of "altruism born of suffering" with college students in the laboratory. More specifically, they were interested in examining the relationship between experiences of past suffering and the tendency to be prosocial. They revealed that individuals who had experienced at least one traumatic life event in the past were more likely to participate in charitable activities (e.g., fund raising, and environmental or animal rights movements). Additionally, those who have suffered were also more likely to volunteer for multiple non-profit organizations that benefit disadvantaged and stigmatized groups. Results on a follow-up study suggested that those who have suffered past life adversity were more likely to engage in empathy and prosocial behavior toward disadvantage out-group members (i.e., victims of a tsunami event in Asia). They claimed that this effect was driven by a reduction of in-group bias along with an increased capacity for empathy.

After having reviewed some literature on adversity and prosociality, one might draw the conclusion that the normative response to suffering is not psychological or social dysfunction but prosocial growth. While each study reviewed so far has provided us with a glimpse of how

suffering could have growth implications for empathy and prosociality, almost all the studies have only examined the effects of specific adversities in specific prosocial contexts.

2.2. A general model of suffering and prosocial growth via empathy

In order to understand the normative effects of suffering on prosocial orientation, Lim and DeSteno [19] studied the links between suffering, empathy, compassion, and prosocial actions using survey methods and laboratory studies. To capture a wide range of adverse life events, they used a modified interview schedule on trauma based on the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III). This measure of trauma captured six different domains of adversity: (1) illness and injury (e.g., injury and illness to the self and close others), (2) victimization (e.g., physical and sexual assault), (3) bereavement (e.g., death of a family member or a friend), (4) relationships (e.g., divorce, forced separation), (5) social-environmental (e.g., financial hardship, discrimination), and (6) disasters (man-made and natural disasters). In addition, each of these adverse life events was examined on three levels: (1) frequency (i.e., how often an individual experienced the events), (2) recency (i.e., how recent they have last experienced an episode of potentially traumatic events), and (3) severity (i.e., to what extent the potentially traumatic events had affected their lives). For the purpose of maximizing external validity, the first of the two studies sampled an online population that was more diverse in age and socioeconomic status than a college-age convenience population. In addition, to measure prosocial behavior, participants of this online study were given an opportunity to donate part of their monetary compensation to a non-profit charity organization.

An initial analysis of results suggests that the frequency of adversity was not linked with self-report measures of trait empathy (i.e., perspective-taking or empathic concern). It also did not predict an increase in dispositional compassion (the tendency to alleviate the suffering of others) or charitable giving. This finding, however, does not preclude the possibility that the frequency of adversity might facilitate prosocial behavior. It is entirely plausible that people who have suffered frequently might choose to help in other ways. That is, those who suffered may often choose to provide social or informational support instead of tangible material support. Moreover, the driving force behind such preferences for prosociality may not be driven by empathy but instead by other mechanisms such as self-other similarity or communal orientation [16, 20].

On the other hand, recency of adverse life experiences negatively predicted empathic concern and perspective-taking. There was no statistical correlation between recency of adverse life experiences with charitable giving or dispositional compassion. This makes theoretical sense as individuals who have recently experienced adverse life events may be preoccupied with the resulting distress. Therefore, they might be more inclined to avoid empathy as vicarious emotional responding to suffering others might lead to even more distress within oneself. Even if these individuals decided to exercise empathy in their already distressed state, they are more likely to experience empathic overarousal which might lead individuals to focus on their own distress as opposed to the distress of others [21, 22].

Frequency and recency of adverse life events were not likely predictors of prosocial growth. However, there is evidence to suggest that the severity of adversity is the most likely predictor

instead [19]. It was found that individuals who have suffered severely in the past were more concerned with the welfare of others and were more ready to take the perspective of suffering others. In other words, those who have experienced major events of adversity in the past seem to be more empathic at a trait level. This increased empathy, in turn, predicted greater dispositional compassion, that is, the tendency to alleviate the suffering of others. To take this finding a step further, Lim and DeSteno [19] replicated these results in a controlled experiment in the laboratory using a confederate-based paradigm of measuring prosocial behavior. Participants of this study were basically brought into the laboratory to complete a series of tasks with a confederate pretending to be another participant. The confederate was assigned a laborious and time-consuming task during this study while pretending to be ill. The participants, who had prior knowledge that the confederate was not feeling well, were then given the opportunity to share the workload of this confederate. The amount of time the participant spent helping the confederate was recorded and operationalized as a measurement of prosocial behavior. By way of structural equation modeling, results from this study suggest that those who had suffered severely in the past were higher in trait empathy (empathic concern and perspective-taking) and dispositional compassion. Moreover, the elevated dispositional compassion that resulted from increased empathy predicted more compassion in the moment when faced with a confederate in need. This heightened state of compassion was positively linked to more time spent helping the ill-feeling confederate (see **Figure 1** for a conceptualization of the proposed model).

In summary, the general model of empathic prosocial growth, as proposed by Lim and DeSteno [19], suggests that as people accumulate severe adverse life experiences, they become more empathic. As such, they might be more in-tuned to the suffering of others which may increase their motivation to alleviate their suffering.

2.3. Discussion

There is increasing evidence suggesting that the normative outcome of suffering is not necessarily dysfunction or psychopathology but growth. While empathy and prosocial tendencies might be impeded during the initial stages of trauma recovery, most individuals do seem to demonstrate empathic growth in the aftermath of adverse life experiences. However, this pattern of growth is by no means homogeneous. Studies on posttraumatic growth and resilience [12] suggest that growth is not always linear. Instead, the relationship between adversity and

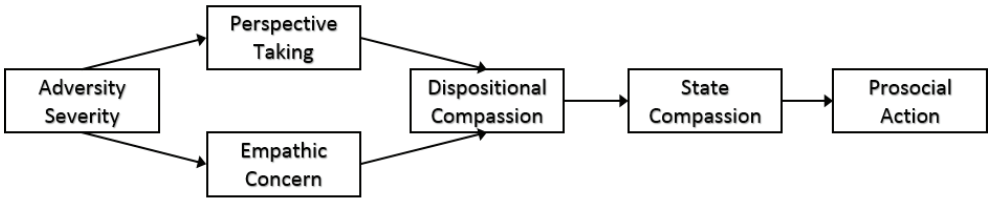

Figure 1. A conceptual model demonstrates how experiences of adversity could lead to prosocial growth. Adopted from Lim and DeSteno [19].

prosocial growth may be curve-linear. In other words, people who have suffered moderately may actually demonstrate the most growth, while individuals who have suffered little might exhibit little growth, and those who have suffered the most may have their growth impeded by social-psychological dysfunction. Future research should examine potential moderators. For instance, individual differences such as resilience, self-compassion, and emotion regulation dysfunction could lead to differential prosocial outcomes in the aftermath of adverse life experiences.

3. Social class, power, and prosocial orientation

There are similarities and differences between the challenges that we face in comparison to our ancestors. While many forms of adversities are part of the human condition (e.g., natural disasters, illness, and bereavement), some have only become relevant with the formation of modern societies. Experiences of urban poverty, class/racial discrimination, and disempowerment are frequently associated with individuals in the lower classes of society. As empathy is a vital contributor to our evolutionary success for our ancestors, empathy may also be adaptive for people facing the challenges of contemporary society.

Some researchers have shown that being in a lower social class is associated with less financial resources which may promote greater tendencies to experience anxiety [23]. In addition, these individuals have less opportunities to grow and achieve class mobility as they have less access to top educational institutions at all levels. Individuals of lower social class also have greater exposure to threats and violence [24]. With all things considered, could we expect individuals in lower social class to be less empathic and engage in selfish self-serving behavior (e.g., hording of resource, being non-communal)? Or could the opposite be true, whereby members of lower social class are more empathic to facilitate adaptive social behaviors (e.g., sharing and cooperation)?

3.1. Social class and prosocial orientation

Emerging research has suggested that lower class individuals may, in fact, be more other-oriented than those of higher classes. Research by Piff and colleagues [25] suggests that people who have less tend to give more. They proposed that individuals who are of a lower social class are more likely to be dependent on each other for resources. As such, it would be more adaptive to be other-oriented for the purpose of building relationships and gathering social capital. In their series of studies, they demonstrated that people of lower class were more prosocial than their upper-class counterparts and were more likely to help a partner in distress. Part of this effect was also explained by the fact that lower-class individuals seem to harbor more egalitarian social values in service of prosocial tendencies. In a similar study [26], it was found that individuals who were lower in social class would tend to perceive negative emotions strongly, more so than higher-class individuals which included the perception of distress. Therefore, lower-class individuals were more likely to pick up the distress of others which then enhanced their abilities to experience empathy and compassion toward the

suffering of others [27]. This is evolutionary sound as empathy and compassion facilitate the building of relationships, support networks, and social capital which can be valuable when dealing with potential threats in the environment.

On the other hand, individuals from a high social class may have access to more resources and may not have to exercise empathy to build relationships and accumulate social capital to thrive. That is not to say these high-class individuals have lower levels of empathy when compared to low-class individuals. In fact, it was found that these individuals were capable of similar levels of compassion when they were put in a compassion-inducing situation; the only difference when compared to low-class individuals was that high-class individuals have a lower baseline of compassion states. This suggests that people in the position of privilege might be less ready to engage in prosocial orientation than their lower class counterparts [26].

Social class and exposure to adversity go hand-in-hand [28]. Therefore, it is expected that the links between social class and prosocial orientation are in line with the notion that experiencing adversity fosters prosociality [19, 20].

3.2. Social power and empathy

Social power can be understood as one's relative ability to influence and modify the outcomes of other individuals by providing or withholding resources [29, 30]. It was posited that individuals who have social power are more likely to have more independence, resources, and ability to pursue their agendas which may include prosocial-oriented goals [31]. While this is theoretically sound, the research in this field yielded mixed results. Some found evidence to support the notion that high-power individuals are more empathic, while others found the opposite pattern of results.

In one such study [31], it was found that power moderated the relationship between prosocial orientation and empathic accuracy (i.e., the ability to accurately decode facial expressions). When examined further, it was revealed that there was an interaction between feelings of compassion and empathic accuracy. Individuals with high power, when induced with feelings of compassion, generally scored higher in tests of empathic accuracy when compared to high-power individuals in a neutral mood condition. Low-power individuals, on the other hand, exhibited similar levels of empathic accuracy with high-powered individuals in the neutral mood condition regardless of whether they were made to feel compassionate or not. Additional evidence suggested that social power-moderated empathic accuracy was also predictive of job satisfaction which is indicative of its functionality.

In a similar study, it was found that individuals who were primed to feel high levels of power, as opposed to low levels, were more empathically accurate. It was revealed that positive emotions such as pride and the need to be respected were sources of motivation which enabled high-power individuals to achieve greater empathic accuracy and interpersonal sensitivity. However, they posit that this effect might be relevant to individuals who adopt an empathic style of leadership (i.e., a style of leadership that revolves around the understanding of the needs of subordinates to achieve leadership goals). This suggests that greater empathic accuracy might only be adaptive when leaders choose to adopt a prosocial stance while being in

a position of power. Moreover, power may facilitate individuals to contribute to the greater good via prosocial actions. This could be driven by the perception of one's ability to illicit positive social changes, especially in leaders who are more other-oriented [25, 32]. However, empathic accuracy may not be relevant to those who choose to adopt an egoistic leadership style (i.e., a style that is characterized by self-interest) as these individuals are less likely to be other-oriented [32].

On the other hand, there is a body of research that supports the opposing view that social power reduces one's interpersonal sensitivity [29, 30, 33]. These researchers generally proposed that those in positions of power are less interested in their subordinate's states. They do so because they can afford too as they have more resources and would be less motivated to tend to the needs of people who are below them on the social hierarchy. Some posit that, instead, low-power individuals are more empathic and interpersonally sensitive because they have to be aware of verbal and non-verbal cues of their superiors; therefore, it would be adaptive for low-power individuals to develop abilities that better enable them to perspective-take, and infer thoughts and feelings of others. Another theory proposes that high-powered individuals are less empathic because they are likely to have more subordinates and, as such, have greater cognitive load than low-power individuals. This increase in cognitive load may, in turn, affect high-power individuals' ability to be empathically accurate which may impair interpersonal sensitivity. On a trait level, individuals with low-trait ratings of social power, a construct reflecting a person's capacity to influence the outcomes of others, reported greater investment in a relationship with a stranger and conveyed higher levels of compassion in response to that stranger's disclosure of suffering [34].

The differences in results that stem from two opposing views might be consolidated if researchers and scholars in this field of study were to take into account more contextual boundary conditions. For instance, individuals holding managerial positions might be required to have empathic accuracy to be able to perform well on the job (i.e., handling employee and customer needs), whereas in highly regimented organizations, such as uniformed organizations, interpersonal sensitivity may not be required for a leader to perform well on the job. In other words, the effect that social power has on empathy might very well be dependent on social contexts and expectations.

4. Conclusion and future directions

There seem to be an increasing level of understanding toward the social environmental factors that could affect empathy and other aspects of prosocial orientation. From a functionalistic perspective, it makes evolutionary sense for us to tend and befriend in times of hardship as opposed to acting out in self-serving ways. The chaotic self-serving tendencies that are portrayed in the news media in the aftermath of disasters only represent a small and unrepresentative aspect of our true nature. After all, it is our social-tribal predispositions since prehistoric times that forged us to be resilient, enabling us to flourish and thrive in spite of incredible hardship.

There are still some questions left unanswered when examining the nuances of social-environmental factors and its impact on suffering and prosociality. While the experience of adversity does lead to an increase in empathy, the underlying mechanisms are unclear at this point. At this juncture, and based on previous research, we can speculate about how experiences of hardship foster empathy. It might be the case that individuals who have suffered are more intuned to the suffering of others; therefore, these individuals have greater salience and awareness of suffering. That is, do these individuals have a greater awareness in the commonality of human suffering? And if suffering saliency is a factor, would they harbor beliefs in the commonality of humankind? Some studies might tangentially support this notion [18], but this research question has not been specifically addressed. Along the same veins of reasoning, could we expect individuals who have suffered to perceive suffering others to be more similar? If so, would this similarity accentuate empathic tendencies? Questions like these are worth answering, and doing so would not only deepen our understanding on the subject but also paint a clearer picture of our true nature.

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References

[1] Pinker S. The Better Angels of our Nature: The Decline of Violence in History and its Causes. UK: Penguin; 2011

[2] Bonanno GA. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? American Psychologist. 2004; **59**(1):20

[3] Norris FH. Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. Journal of Consulting and Clinical Psychology. 1992;**60**(3):409

[4] Dawkins R. The Selfish Gene. New York, NY: Oxford University Press; 1989

[5] Fullerton CS, Ursano RJ, Wang L. Acute stress disorder, posttraumatic stress disorder, and depression in disaster or rescue workers. American Journal of Psychiatry. 2004;**161**(8):1370-1376

[6] McCloskey LA, Walker M. Posttraumatic stress in children exposed to family violence and single-event trauma. Journal of the American Academy of Child & Adolescent Psychiatry. 2000;**39**(1):108-115

[7] Monroe SM, Harkness KL. Life stress, the" kindling" hypothesis, and the recurrence of depression: Considerations from a life stress perspective. Psychological Review. 2005;**112**(2):417

[8] Franklin KM, Janoff-Bulman R, Roberts JE. Long-term impact of parental divorce on optimism and trust: Changes in general assumptions or narrow beliefs? Journal of Personality and Social Psychology. 1990;**59**(4):743

[9] Poulin MJ. When do assumptions shatter? A prospective investigation of negative events and world assumptions [dissertation]. ProQuest Dissertations; 2006. Accession Order No. [3236684]

[10] Blum SC, Silver RC, Poulin MJ. Perceiving risk in a dangerous world: Associations between life experiences and risk perceptions. Social Cognition. 2014;**32**(3):297-314

[11] Bonanno GA, Diminich ED. Annual research review: Positive adjustment to adversity–trajectories of minimal–impact resilience and emergent resilience. Journal of Child Psychology and Psychiatry. 2013;**54**(4):378-401

[12] Seery MD, Holman EA, Silver RC. Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. Journal of Personality and Social Psychology. 2010;**99**(6):1025

[13] Woodward C, Joseph S. Positive change processes and post-traumatic growth in people who have experienced childhood abuse: Understanding vehicles of change. Psychology and Psychotherapy: Theory, Research and Practice. 2003;**76**(3):267-283

[14] Linley PA, Joseph S. Positive change following trauma and adversity: A review. Journal of Traumatic Stress. 2004;**17**(1):11-21

[15] Kaniasty K, Norris FH. In search of altruistic community: Patterns of social support mobilization following Hurricane Hugo. American Journal of Community Psychology. 1995;**23**(4):447-477

[16] Vezzali L, Cadamuro A, Versari A, Giovannini D, Trifiletti E. Feeling like a group after a natural disaster: Common ingroup identity and relations with outgroup victims among majority and minority young children. British Journal of Social Psychology. 2015;**54**(3):519-538

[17] Barnett MA, Tetreault PA, Masbad I. Empathy with a rape victim: The role of similarity of experience. Violence and Victims. 1987;**2**(4):255-262

[18] Vollhardt JR, Staub E. Inclusive altruism born of suffering: The relationship between adversity and prosocial attitudes and behavior toward disadvantaged outgroups. American Journal of Orthopsychiatry. 2011;**81**(3):307

[19] Lim D, DeSteno D. Suffering and compassion: The links among adverse life experiences, empathy, compassion, and prosocial behavior. Emotion. 2016;**16**(2):175

[20] Staub E, Vollhardt J. Altruism born of suffering: The roots of caring and helping after victimization and other trauma. American Journal of Orthopsychiatry. 2008;**78**(3):267

[21] Eisenberg N, Fabes RA, Murphy B, Karbon M, Maszk P, Smith M, Suh K. The relations of emotionality and regulation to dispositional and situational empathy-related responding. Journal of Personality and Social Psychology. 1994;**66**(4):776

[22] Hoffman ML. Development of prosocial motivation: Empathy and guilt. The Development of Prosocial Behavior. 1982:281-313

[23] Drentea P, Lavrakas PJ. Over the limit: The association among health, race and debt. Social Science & Medicine. 2000;**50**(4):517-529

[24] Staggs SL, Long SM, Mason GE, Krishnan S, Riger S. Intimate partner violence, social support, and employment in the post-welfare reform era. Journal of Interpersonal Violence. 2007;**22**(3):345-367

[25] Piff PK, Kraus MW, Côté S, Cheng BH, Keltner D. Having less, giving more: The influence of social class on prosocial behavior. Journal of Personality and Social Psychology. 2010;**99**(5):771

[26] Stellar JE, Manzo VM, Kraus MW, Keltner D. Class and compassion: Socioeconomic factors predict responses to suffering. Emotion. 2012;**12**(3):449

[27] Taylor SE, Seeman TE. Psychosocial resources and the SES-health relationship. Annals of the New York Academy of Sciences. 1999;**896**:210-225. DOI: 10.1111/j.1749-6632.1999.tb08117.x

[28] Breslau N, Kessler RC, Chilcoat HD, Schultz LR, Davis GC, Andreski P. Trauma and posttraumatic stress disorder in the community: The 1996 Detroit Area Survey of Trauma. Archives of General Psychiatry. 1998;**55**(7):626-632

[29] Fiske ST. Controlling other people: The impact of power on stereotyping. American Psychologist. 1993;**48**(6):621

[30] Keltner D, Gruenfeld DH, Anderson C. Power, approach, and inhibition. Psychological Review. 2003;**110**(2):265

[31] Côté S, Kraus MW, Cheng BH, Oveis C, Van der Löwe I, Lian H, Keltner D. Social power facilitates the effect of prosocial orientation on empathic accuracy. Journal of Personality and Social Psychology. 2011;**101**(2):217

[32] Schmid Mast M, Jonas K, Hall JA. Give a person power and he or she will show interpersonal sensitivity: The phenomenon and its why and when. Journal of Personality and Social Psychology. 2009;**97**(5):835

[33] Goodwin SA, Gubin A, Fiske ST, Yzerbyt VY. Power can bias impression processes: Stereotyping subordinates by default and by design. Group Processes & Intergroup Relations. 2000;**3**(3):227-256

[34] Van Kleef GA, Oveis C, Van Der Löwe I, LuoKogan A, Goetz J, Keltner D. Power, distress, and compassion: Turning a blind eye to the suffering of others. Psychological Science. 2008;**19**(12):1315-1322

Chapter 6

The Building of Empathy: Conceptual "Pillars" and Conversational Practices in Psychotherapy

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Additional information is available at the end of the chapter

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Abstract

Empathy can be considered a special type of cooperation between therapist and patient. This exploratory study compares psychoanalytical, depth-psychological and behavioural therapy, in each case using transcriptions of audio recordings of initial, mid-term and late sessions. For each school of therapy, five treatments are included, creating a database of 45 sessions. We describe the project and the method of conversation analysis using examples of these transcripts and hypothesise that while all three schools of therapy are faced with common fundamental problems concerning the realisation of empathy, one can observe empathy profiles specific to each school. Here, we introduce theoretical groundwork and the terminology of conversation analysis. The topic may be of particular interest to clinicians, since everyday problems are examined through the prism of microanalysis.

Keywords: empathy, psychotherapy, conversation analysis, psychoanalysis, cognitive behavioural therapy

1. Introduction

Empathy is not a binary variable that can be reduced to "yes" or "no". What one person experiences as a moment of empathy another might not. Hence, empathy cannot be defined *a priori* or in abstract terms, rather it is something that is created—through conversation.

An approach based on conversation and its analysis represents a departure from other important studies which examine empathy as an individual "ability" [1]. Tests have already been developed [2] which have proved useful for studying autism for instance. "Empathy" and "evil" are often perceived as a continuum; lack of empathy is connected to violence, while empathy prevents it.

The social scientist Randall Collins [3] has developed a different approach; he focuses on "situations", both of violence [4] and of empathy [5, 6]; the rhythms of the linguistic and the physical [7] are "on the same track". In his extensive analysis, which cannot be sketched in here, violence occurs in situations the dynamics of which can be precisely described by microanalysis. Collins' point of departure was not violence however, but the linking of interactive practices via which violence is virtually avoided through empathetic rhythmisation.

These two approaches are methodologically quite different; one seeks to examine individual skills or their absence, while the other employs microanalysis of situations. However, both recognise a continuum of empathy and violence. "Situations" are "objects at border" [8]—they are as much a part of conversation as they are of cognition and experience. The question of which side "counts" is negotiated during the conversation and does not have to be decided in advance. Thus, a question emerges: If violence can be described as a property of mutually co-constructed situations, is this possible for empathy, too?

Empathy is considered a mysterious achievement of gifted therapists. Its origins are sought in happy circumstances in childhood, or successful self-experience shaping therapeutic work. An intelligent survey [9] shows how the psychoanalytical understanding of empathy has developed. She provides a knowledgeable summary of a long discussion within the field:

> (E)mpathy will here be viewed from an epistemological perspective, as a way of knowing, a way of arriving at an understanding of another's feeling state, potentially generating a bidirectional interactive field of considerable power ([9], p. 713).

This is similar to what Ed Tronick has called a "dyadic state of consciousness":

> "This dyadic state organization has more components—the infant and the mother—than the infant's (or mother's) own self-organized state. Thus, this dyadic system contains more information and is more complex and coherent than either the infant's (or the mother's) endogenous state of consciousness alone. When infant and mother mutually create this dyadic state — when they become components of a dyadic system — both fulfill the first principle of systems theory of gaining greater complexity and coherence. The gesturing mother-held-infant performs an action — gesturing- that is an emergent property of the dyadic system that would not and could not occur unless the infant and mother were related to each other as components of a single dyadic system". [10]

If an individual's consciousness is unable to solve certain problems, it has to couple with another's consciousness (mind) so that both can take on a "dyadic state" and find a solution. They can then uncouple in order to recouple at a later opportunity.

"Theory of mind" research long assumed that children do not develop these skills until the age of three—in experimental situations. Significantly, observation of natural situations [11] has identified these skills at a much earlier stage; they are documented in children as young as 12 months [12, 13]. What was conceptually difficult in some experimental approaches to studying empathy becomes clear: in investigations into mirror neurons [14], one monkey is conceived of as the "observer" of an "object" (another monkey); the idea that the observer creates a propositional

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hypothesis, in analogy to science, was soon dropped [15] and developed into a theory of intersubjectivity [16].

In contrast to experimental situations, in natural situations we have not only an epistemological perspective, but also a shared existential situation. For children, it is not only important that their fathers play with them "correctly", but they also want to feel that their fathers enjoy playing with them. It is not just epistemologically important to the observer to be a mirror correctly reflecting an observation; rather it is of *existential* importance to *both* parties to have understood correctly—for life itself, or certainly, its development can depend on it [17]. It is this theoretical idea of a common field that makes empathy a cooperative achievement of two interacting parties. It is they who make empathy possible for one another or who prevent it, and they *both* depend on sufficiently understanding or being sufficiently understood. That can only happen through conversation, which must obey its own forms—every act of understanding has to pass through the eye of the needle of conversation (of course, not only verbal!) if it is to be effective in the social world [18]. It is more than just a question of epistemological understanding, and it is the social dimension of shared being.

This conception takes a critical view of the influential, still entirely individualistic idea of an empathiser who due to special sensory organs and fine sensitivity is able to look into or even penetrate the internal worlds of others. It is claimed that this can be achieved not only due to such personal abilities, but also with the help of psychoanalysis. To cite just one example:

> [We] can compare our theories to an optical device that enables us to perceive the innermost core of the latent content of the patient's discourse. [19]

Here, countertransference is conceived as a kind of monitor on which the therapist can read the unconscious and suppressed sides of the patient. Interestingly, Kleinian [20] warned of this overestimation of theory and a renaissance of the "x-ray" vision theory of empathy when she criticised a "certain tendency" among psychoanalysts.

> "…to be wrapped up in checking their own feelings as the crucial reference point for the session's events; this occurs at the cost of immediate contact with the patient's material" [20].

The empathetic field must thus overcome two risks: either contact is lost, or we have to believe, if we follow Paul Denis, that theory already knows everything. This too would entail a loss of contact; a patient who feels treated merely as a "case" in a general theory must feel permanently overlooked as an individual [21]. Therapy is then unable to do what it is capable of.

Here we can only point to the heterogeneous discussion of empathy [22–27] and provide specific analyses of therapeutic sequences, in line with a research strategy suggested elsewhere [28, 29]. Using the "empiricism of conversation" (in the form of transcriptions of genuine therapeutic conversations), we expect to be able to provide a clearer description of how empathy is created. This forms part of an attempt to re-establish psychoanalysis as an observational science [30]. Psychoanalysis can look back on an "empiricism of conversation" without recourse to other methods and empiricisms that might be considered quite foreign.

The empiricism of conversation would be able to compare psychoanalysis with other therapies; such contrasts would then bring its own potential into sharper focus.

The key questions posed by our study are thus: how can we describe "preconditions of empathy", in which "sites of empathy" develop and how are "empathy achievements" generated in cooperation? What are the conversational practices realised in each fashion to create the preconditions, to recognise the sites and to acknowledge empathy achievements? Which conversation tools do the participants use to these ends and to signal to each other that the empathetic field is developing and deepening?

2. Method: conversation analysis

In order to get a grip on these questions, we decided to use conversation analysis (CA) as the most nuanced tools originating from the work of Goffman [31, 32] and Garfinkel [33]. About recent developments in CA readers are best informed in Ref. [34]. CA has a keen eye for the microanalytic subtleties of therapeutic discourse creating atmospheres—or not. This is best understood by some illustrative examples.

Conversation analysis (CA) has long been concerned with empathy, without using the term, however. In the early days of the discipline, Harvey Sacks (1992, Lecture I from the winter of 1970) [35] stressed that CA had to consider one aspect of conversation he termed "my mind is with you"; in other words, we always consider the cognitive + emotional information available to another person. When we speak of "my brother Peter", this is a common designation for a member of our family—for the benefit of someone who does not yet know Peter. We tailor the content and form of our utterances to the "knowledge" (epistemic state) of the other person; conversation analysis calls this "recipient design" (more on this later). If we were to use the same phrase when speaking to our sister, such a designation would seem strange. We implicitly provide the exact balance of contextual knowledge required to continue the conversation [36, 37]. It is not a matter of establishing consensus of world views, as "knowledge" would suggest, rather it is a question of the small particles of "knowing" necessary to allow the other person to be part of and make useful contributions to the "project" of a shared conversation. Collins [38] describes this weighing up of "epistemic states" as an example of the above process of "entrainment"—if such differences are not compensated for, strong feelings of aversion quickly develop. If on the other hand the correct balance is struck, warm and friendly feelings emerge. Although we speak of "knowledge", precisely these more affectively relevant consequences that are part of conversation analysis; it would be wrong to assume a focus solely on the "rational". Rather, it is a question of "situated knowledge practices". If this is achieved, knowledge is shared, combined with the feeling of being in a (small) world shared with a conversation partner. If situated knowledge can be shared, this sharing has emotional consequences.

Influenced by the empathy boom following the discovery of mirror neurons, some authors have begun to investigate empathy in conversations [39, 40]. Only recently, these studies have been extended to prosody and melody of the voice [29, 41, 42]. The obvious premise is that empathy on the human level must be studied not only in the neuroscientific context, but above

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all as an interactive social practice. All of these authors express their surprise, however, at how little empathy is valued and how little it is used during conversation.

CA has established a firm place in the social sciences by the assumption that social structures are not only "at hand", not "just a given", but social realities are constructed, better co-constructed by participants in local circumstances. Participants use "practices" to contribute from moment to moment to the course of interaction, thus generating a trajectory of conversation while drawing back to cultural and common knowledge of many kinds. The medium of such practices is to a large part talk-in-interaction; thus, CA does not reduce talking to "exchange-of-information". It includes all kinds of bodily movements participants display mutually to each other. Everything hearable and viewable can become part of conversation. CA has studied in microanalytic detail the formal practices of turn-taking, the production of "trouble" (when participants, e.g. interrupt each other) and the practices of repair, how a topic-shift is arranged, the organisation of laughter, how questions are posed and how they are responded (in court, police interrogation and in medical practice), how storytelling changes in dependence from the recipient (recipient design) and a lot of many other things occurring in human conversation; an overview is available [34]. Psychotherapy process research has attracted CA-authors because they are attentive to the "sweet little nothings" during conversation mostly overlooked by more generic "coding and counting" approaches [43–48]. The advantage of observing many highly relevant details of voice and prosody [42] or eye movement for coordination [49] is accompanied by the disadvantage that only small numbers of cases can become studied. Up to now, there is no generally accepted solution for this problem.

We want to present an exploratory design of a psychotherapy process research study. The type of process research described here entails language unfamiliar to clinicians. However, without expanding our terminology, we cannot do justice to our observations. We hope to find a language for the main therapeutic tools here: treatment through speaking (a "talking cure", in the words of "Anna O."). Our work is based on constructive collaboration at the International Psychoanalytic University (IPU) in Berlin and is a comparative, exploratory study of three therapeutic procedures (psychoanalysis = PA, depth psychology = DP and cognitive behavioural therapy = CBT). Treatment by five therapists in every procedure is examined at three stages: in an initial, a mid-term and a late session (from the final stage of treatment). We thus have, overall, a corpus of 45 transcribed sessions (3 therapeutic orientations $\times$ 5 therapies $\times$ 3 sessions). In this way, processes within the procedure can be monitored, opening or closing situations can be compared across therapeutic orientations and the influence of therapeutic personalities can be compared within one and the same orientation. All treatments involve patients diagnosed with depression. Almost all of the patients were judged to have had a positive "outcome" by independent assessors in the Munich study; adherence to specific procedures was checked: cases labelled PA (or DP or CBT) did indeed relate to PA (or DP or CBT) [50]. Differences can be ascribed to the therapeutic procedures. Here, the process is constructed with regard to empathy.

3. Pillars of empathy

In order to reduce the enormous complexity of empathy in therapeutic discourse, we found it useful to erect conceptual "pillars" that might help to present some of our data in an organised

fashion. We start with what CA-authors have observed as empathic practice in everyday conversations.

3.1. First pillar: empathy in everyday talk—the CA contribution by John Heritage

Heritage [37] calls verbalised participation in everyday conversations via common phrases such as "The same thing happened to me recently …" "parallel assessment" ("I'm-like-you experiences"). In professional contexts however, this type of empathetic participation hardly ever takes place. In an extensive set of records of conversations with general practitioners and homoeopathic therapists, Ruusuvuori [51] finds just one single example of such "parallel assessment". In professional context, the sentiment "I feel the same way as you" is hardly ever expressed. There are conversation practices that promote or prevent empathy on the everyday colloquial level. Hence therapeutic empathy clearly requires conversational preparation. CA has developed "tiered" list of practices through which people communicate empathy with each other in everyday life [39, 40, 52–55], that is, the way they realise the "silent" but continual communicative dimension of "my mind is with you". These practices can be listed as "everyday empathy" [37] as follows:

- "Response cries" [56]: exclamations such as "Aah", "Oh dear", "Oh no", used to convey emotional sympathy. For Goffmann, "response cries" are not signs of sympathy, but apparently involuntary expressions in reaction to unexpected events.
- "Pre-announcements" can announce a narrative: "A wonderful/crazy/funny thing happened to me yesterday". Listeners are informed in advance what sort of reaction is expected of them. More than just creating expectations, such "pre-announcements" provide the other person with a key to interpreting the ensuing utterances.
- "Ancillary questions": these everyday questions invite the listener to recreate the imagined scenery and to explore the necessary details.
- "Parallel assessments" denote the utterances one produces when a conversation partner relates stories, for instance about visiting the dentist, or attending a wedding or a funeral. The "parallel" moment is articulated in utterances such as "I feel the same way", "I've had that too" (e.g. an illness).
- "Subjunctive assessments": by way of illustration, Heritage [57] presents scenes in which two friends talk in the kitchen and imagine the ingredients they will use next time they cook something. And then make noises of enjoyment and pleasure to convey to each other how at this very moment they are imagining very similar sensations of taste on their tongues. Subjective assessments are tantamount to anticipation sensed together empathetically although they have yet to be experienced.
- "Observer responses": Heritage uses this term for those comments used to directly mention an external characteristic or a situation to someone, such as "You're speaking so quietly" or "You look exhausted". Such utterances are vulnerable to nonempathetic interpretations on the part of the recipient. In the therapeutic context, "observer responses" include phrases like "I've noticed that you …"

Heritage provides several illustrations for this list in the form of excerpts from transcripts. They are too extensive to consider here, but they are very persuasive. We could observe practices of everyday empathy in our material, but there is more of relevant empathic practices in therapeutic conversation.

3.2. Second pillar: motive constructions

In test runs, we sought to encode the "student's" transcripts with Heritage's list and found it to be insufficient. One initial and important (re-)discovery was that therapists construct motivation in various ways [58]; they suggest motivations to their patients using expressions such as "because …" [59]. An "in order to" construction is also frequently used: "Then they went there again, in order not to be alone". In everyday life, motive constructions are very rare when addressed to others; only in very exceptional circumstances, one can ascribe motivations to other people without them feeling violated in their personal autonomy and going on the defensive. Thus, a therapeutic situation opens up for different types of empathic practice that are more or less tabooed in everyday life. The permission to use practices that were not tolerated in everyday life can be viewed as a specialty of psychotherapy as a form of institutional talk, permitting other forms of conduct. Such a permission must be granted by the patient which is done by conversational preparations for the emergence of an empathic field. If this fails, patients will tend to hear motive constructions as attacks, accusations and so on. Empathic achievements by therapists need active preparation.

Another empathic achievement is not to make motive constructions until such active preparation is agreed by the patient in order to make the difference transparent between everyday situations and therapeutic contexts. Such conversation practices secretly convey "my mind is with you".

3.3. Third pillar: observing expectations

In order for this "silent" dimension of conversation to unfold, conversation partners must develop practices establishing "common ground". For "talk-in-interaction" to emerge, it is essential that people convey that they have something or other to do with one another; for instance, one of them takes on the role of the speaker (commander, narrator) and the other adopts the position of the recipient of a command or the listener—and does not permanently "butt in". Analysis of the beginnings of telephone conversations [60, 61] shows how tiny particles ("Hi!") articulate an expectation that the listener will perceive the speaker as someone with a certain identity. Such expectations are a relevant but silent dimension of patient's talk in therapy. To open one's ears for this hidden conversations is a relevant dimension of preconditions of empathy in therapeutic situations. To find answers that make expectations transparent and go over their restraints is a part of empathic achievement.

3.4. Fourth pillar: establishing "common ground"

When people meet each other for the first time, however, such an implicit suggestion of familiarity cannot be expected. They must first establish the cooperation that gives rise to reciprocal "commitments". Conversation analysis describes this as "adjacency pairs": a

greeting is followed by its return; a question is followed by an answer. This is "conditionally relevant". Violations of such rules require good reason, and under normal circumstances accounts are presented; or they result in severe social rejection.

The concept of "adjacency pairs" has also given rise to "projective pairs" [62]. This term has nothing to do with "projection" in a clinical sense; rather it is derived from the idea of a "project"; participants demonstrate to each other that they are engaged in a common project. Someone who is moving house and wants to put together a cupboard with someone can say, for example, "We have to screw it together here", and without speaking the other person passes the screws within his or her reach—the project requires cooperative actions and at the same time forms a semantic frame. Clark (p. 129) speaks of "collateral communication". How a common ground is enacted by both participants is analysed in detail in Ref. [43]. To have an open ear to how common ground is achieved is a precondition for empathy, the response will be assessed by the feeling of being understood—or not.

3.5. Fifth pillar: deontic authority

The founder of speech act theory, John Searle, proposes a most useful distinction [63, 64]. For the skill that arises "when the words fit the world" he coined the term "epistemic authority". Those in a position to aptly express the conditions of the world using words have epistemic authority. Distinct from this, we also have "deontic authority", "where the world fits the words". Those who can determine "what is going on (in the world)" through words possess the kind of authority Searle terms "deontic". This distinction has already been applied fruitfully in CA [65]. A priest, for instance, can suggest to the choirmaster which hymns might be sung on Sunday, but his deontic authority requires agreement, he cannot force the choirmaster to make any particular choices. Agreement can be withheld or rejection can be concealed.

3.6. Sixth pillar: Rupture-repair cycles

Some of the early literature on conversation analysis is concerned with "repairs" [66]. This focus extends to a variety of phenomena [67]. In psychotherapy research, detailed studies of transcribed therapy material [68] in particular have demonstrated where therapeutic working relationships fail to develop and how they can be "repaired". These authors describe two possible developments: the patient either withdraws or becomes aggressive and accusatory. The decisive element is whether or not the therapist notices or blithely carries on. If a "rupture" is noticed, "repair activities" can be employed. However, it is not precisely clear, what "rupture" means: rupture of what? Of the conversational tissue? In clinical language, rupture can be used metaphorically in some helpful ways; however, if you want to study conversation, a metaphoric use is insufficient. Here CA has developed a rich register of rupture and repair activities.

Repair activities are also used in everyday conversations [69], for instance, when someone restarts a sentence [70] or is corrected on a statement regarding time or place [71]. Repair activities are employed very frequently and are regarded by many authors [72–74] as the basis of survival from infancy onwards. Thus, the detection of a rupture is a precondition of empathy, to find a helpful answer is a therapeutic achievement.

3.7. Seventh pillar: typical problematic situations (TPSs)

Some clinicians assume that a given treatment's chances of success depend on how "problematic situations" are handled. Such situations are accusations made by patients, postponed appointments, cancellation fees, late arrival, applications to extend health insurance claims and expert reviews and other "performance defects" [75].

But there are also difficult situations that can only be detected by microanalysis: a patient after having told a dream asks the therapist "Did my dream help me?" and the therapist responds with some confusion [76]. A patient does not finish a story, but breaks off mid-sentence with rising intonation—such a "border tone" gives the therapist a clear signal that the patient wants to continue speaking but has paused for thought. But if this pause lasts more than 3 s and stretches to 27 s [77], it becomes difficult. In an example published elsewhere [43], the therapist felt the need to finish the patient's sentence for him. In this case, the intention to help the patient get over a "stumbling block" resulted in the escalation of a fight for the right to speak.

More complex TPSs arise when patients seem to communicate "I urgently need your help, but nobody can help me, not even you" or "I urgently need your help, but on *my* conditions". Details of such TPS are presented elsewhere [43].

To detect a TPS is a precondition for empathy, and to find a suitable answer is an empathic achievement.

4. Findings

Let us begin with an initial interview in which the "student", who has already undergone various examinations, is in conversation with the therapist but whose description of his symptoms makes it particularly difficult for the latter to form even the slightest impression of what he is talking about.

First example (brief psychoanalytic therapy):

P: [(Well you know)] =behaviour you know like control obsession (..) and when like (.) for example (.) I step out of the front door (.) >not then< but when I enter [then I have a look=
P: *[(ja so)] =verhalten also so Kontrollzwang (..) und wenn i ja so (.) zum Beispiel (.) aus der Haustür rausgeh (.) >dann net< aber wenn ich reingeh [dann guck i nach=*

T: [hm:
T: *[hm:*

P: at the back=
P: *nach hinten=*

T: =yes
T: *=ja*

P: and I check if I haven't forgotten anything or what have you
P: *und kontrolliere ob i auch nichts vergesse hab oder so*

Transcription symbols

Reading transcripts requires some practice, just like reading statistical tables or diagrams. Here is a key to the symbols used:

- Words in *square brackets* are spoken at the same time.
- *Colons*: pronunciation of a letter is stretched out.
- *Commas*: slightly rising intonation.
- *Question mark*: markedly rising intonation.
- *Semicolon*: slightly falling intonation.
- *Full stop*: falling intonation.
- *Underlined* words or letters: spoken with emphasis.
- Words in *UPPER CASE* with ! are spoken loudly.
- *Angle brackets*: <drawn-out slower> speech.
- *Inverse angle brackets*: >fast speech<.
- °*Quiet words*° or sentences are indicated by °.
- *Numbers in brackets* indicate pauses in minutes:
- (.) under 0.25 s
- (-) 0.25–50 s
- (–) 0.50–75 s and
- (—) 0.75–0.99 s pause.

It would seem quite clear that he is explaining how when he goes into his house he feels a compulsion to turn around and look for something on the floor [78]. When the transcript was used as the basis for various methodological evaluation strategies at the Second Berlin Workshop on Qualitative Research in 2013, this passage was the cause of some confusion. About half of the participants had understood the opposite: that the patient developed the symptoms when leaving his house. The ideas about what was being discussed, the attentive comprehension of the listeners, as it were, was not homogenous across the group. The therapist clearly had the same problem, as demonstrated by the same passage when shown in the fuller context of the conversation:

→ **P:** [(Well you know)] =behaviour you know like control obsession (..) and when like (.) for example (.) I step out of the front door (.) >not then< but when I enter [then I have a look
P: *[(ja so)] =verhalten also so Kontrollzwang (..) und wenn i ja so (.) zum Beispiel → (.) aus der Haustür rausgeh (.) >dann net< aber wenn ich reingeh [dann guck i nach=*

T: [hm:
T: *[hm:*

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P: at the back=
P: *nach hinten=*

T: =yes
T: *=ja*

P: and I check if I haven't forgotten anything or what have you ←
P: *und kontrolliere ob i auch nichts vergesse hab oder so* ←
T: when you enter through the front [door
T: *wenn Sie reingehen in die Haustü[re*

P: [Yes when I go out no=
P: *[Ja wenn ich rausgeh net=*

T: =then: you check something;
T: *=dann: kontrolliern Sie was;*

(1.2)

P: yes something, well.hh
P: *ja was, also.hh*

T: and where do you look there? When you?
T: *und wohin gucken Sie da? Wenn Sie?*

P: On the floor, (.) as a rule
P: *Aufn Bode, (.) in der Regel*

T: from outside so it's from outside [you look? ←
T: *von draußen also draußen gucken [Sie?* ←

P: [no from inside >> I mean I do go in the door or whatever<< [or (.) outside the door like
P: *[nee von dri >>also igehschoindieTürhineioderso<< [oder (.) vor der Tür eben*

T: [hm hm
T: *[hm hm*

P: this would be a very specific thing
P: *dis wär jetzaganzkonkrete Sach*

T: ↑ hm hm
T: ↑ *hm hm*

The precise transcript provides a helpful explanation of what happens here. The arrows show the sections to which our commentary refers. Before the patient reacts with a quickly spoken ">dann net<" (">not then<"), he pauses ever so slightly. The effect of this micropause is that it is impossible to distinguish whether "dann net" is a negation of the content or whether the "net" is a small Swabian tag. A "tag" is a signal often added to the end of sentences to seek agreement, commonly encountered as German "ne", Hessian "gell?" or English "isn't it?". Initially, the localisation of the compulsion is obvious, but then we recognise that the therapist is having difficulties coming to a clear interpretation. He checks (second arrows) and receives another answer that makes it unclear whether the patient's answer is to be understood as agreement or whether the "yes" is merely a particle used to introduce the next statement. A further difficulty is encountered in the negation in the patient's reply. The utterance "When you go in the door of your house", seeking clarification, is ignored not directly, but indirectly (via a description of what he does not do). The therapist senses this irritation too when he asks the patient again (third arrow) if he checks (from outside). Now he receives the answer "no

from inside". Here an asynchronic dance develops in which it is not clear who is supposed to take the lead. A further difficulty is added by the patient's delayed explanation of his direction of movement. Despite this imprecision, they continue with the conversation and thus mix up the new question regarding the patient's location when the compulsion occurs with the previous question regarding his direction of movement, a clear answer to which has yet to be provided.

One of the practices attempted by the therapist in this example is known as "ancillary questions" [53]. Such questions are designed to form a picture of when and where the patient's compulsion arises—but in this case this is precisely what they do not do. It is not empathy that fails here, but one of its precursors. Actively but unconsciously, the patient paralyses the therapist's hermeneutic abilities—we speak of "communicative stun grenades" [79]. Of course, there are much more severe examples. Clinicians might be reminded here of Bion's descriptions such as "attacks on linking"; unfortunately, to our knowledge, transcripts have yet to be made available. We hold that this brief example gives rise to a number of issues: the idea that patients want to be understood does not do justice to the whole picture. Nor is the complementary idea that therapists can understand empathetically without the active contribution by the patient is the whole story—yet this is exactly the description we repeatedly find in theories of empathy.

By way of illustration, let us further differentiate the concept of the interactive field using a small diagram (see **Figure 1**).

There are preconditions of empathy (E-P). The minimum requirement is seeing or hearing (e.g. on the telephone), that is, the co-presence of the parties involved. Here it becomes clear that there is a productive and a receptive aspect; one person speaks, the other hears that person's voice. "Talking to each other" is another prerequisite, but this alone does not constitute empathy. It is possible for two people to talk to each other and understand each other only on the linguistic level; there are also many situations (with waiters, at counters, etc.) in which people talk to each other and empathy is practically neglected. The therapeutic situation, on

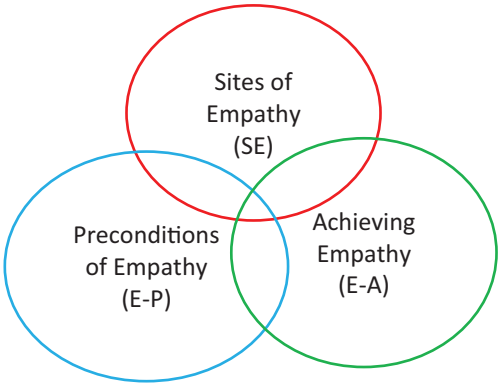

Figure 1. The interactive field of empathy.

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the other hand, specialises in coproducing "sites of empathy" (SE) in order to observe them. In particular, this includes irritations in everyday communication and physical and other sensations that arise. As the process itself develops, these aspects are in turn produced by speech; the act of talking to each other becomes increasingly self-reflexive and produces new irritations and ruptures and difficult situations. The findings described allow us to categorise our expansion of conversation practices in the diagram above.

5. An example for common ground and nonresponding to expectations

We can now apply the above considerations to the beginning of a depth-psychological (DP) therapy. The patient has received prior instruction that her treatment will be recorded; at once, this part of the project becomes an opportunity to create "common ground" with which to begin a conversation:

Second example: DP, initial session

---

1 **T:** I'm making another (.) test tape recording, (1).h a::n:d (---) now I'm rewinding, (--) >today is the twenty-third of the fourth two thousand and one.<
T: *Ich mache erneut eine (.) Bandaufnahmenprobe, (1).h u::n:d (---) spule jetzt zurück, (--) >heute ist der Dreiundzwanzigste Vierte Zweitausendeins.<*

2 ((Recording is ended and starts again))

3 (2.9) ((Rustling))

4 **P:** [°Oh I see you have already (.) got the microphone set up;°]
P: *[°Na ichsehschonSie ham (.) das Mikrofonschonaufgebaut;°]*

5 [loud rustling]

6 **T:** YES:,! >H H<
T: *JA:,! >H H<*

7 (---) ((loud rustling))

8 **P:** I had forgotten again.=
P: *hatt' ich schonwiedervergessen.=*

9 **T:** =Yes.
T: *=Ja.*

10 (4.8) ((Rustling of paper))

11 **T:** ↑ Yes (1.3) ((Rustling stops))
T: ↑ *Ja (1.3) ((Rustling stops))*

The therapist states the date of the session for the tape; the recording is turned off (we do not know for how long), and the patient makes a first °quietly° spoken comment about something "visible": "°Oh I see you have already (.) got the microphone set up;°".

Opening in this fashion with "joined attention", discussing a little thing that is present and perceptible to both people, is a common tool with which "common ground" in sensory

perception to the zone of conversation can be transformed. P sees something, sees that the other person sees something, and addresses it, an example of "silently" communicating that "my mind is with you". This is part of the patient's empathy for the therapist, delivered as searching for opportunities for common affective regulation, for instance overcoming initial awkwardness. The patient displays a memory of what was agreed (audio-recording the session) and displays an expectation a) that her pointing to the sensual object (microphone) is confirmed by the therapist and b) that the therapist remembers the agreement, too. Answers to both expectations would share the experience of a common ground. The therapist reacts with a loud "YES!" and loudly breathes in and out.

This minimalist utterance acts as a context marker. In an everyday situation, one would expect a complementary reply, commenting on the preparatory setting up of the microphone. The brief, loud and accentuated "YES!" marks a different, professional, or, to be even more precise, procedure-specific context. A note on communicative markers:

While doctors communicate directly and consistently via a white coat and a stethoscope, for instance, that they are doctors, a therapist has no such material context markers. She has to accentuate the project known as "therapy" using *communicative* markers and to distinguish it from similar types of conversation—such as gossip [80, 81], conversations with friends or colleagues, or an interrogation. The psychoanalytical concept of "neutrality" must be realised communicatively. Such realisations fulfil multiple functions.

The therapist's "YES!" is recognisably short and hence can be interpreted in many different ways by the patient. It contains the briefest possible confirmation of her first comment; "YES!" could mean that she has been "heard", but it might also mean more and it might convey acknowledgement of and agreement with the content, that is, the comment about the microphone. Since both interpretations are left open, her response communicates that a particular kind of conversation is going to develop it points forward. The common project of "therapy" has been opened.

The patient now reacts by talking to herself; she expresses that she has "forgotten again". The rhetorical figure of ellipsis[1] in line 8 can be employed because it is clear what she has forgotten: that there would be a microphone. She knows that the therapist knows what the unspoken part of her utterance refers to: "My mind is with you" is the therapist's tight response. But the patient offers to pay a price for the "common ground": she diagnoses a momentary failure of her memory. In her first utterance, however, she had recognised the microphone as something that reminded her of the agreement for being audiotaped.

A small sliver of "common ground" is beginning to develop, although it is still quite fragile. It is not yet clear to the patient whether the converse is true or not: "Is your mind with me?" As in her opening remark in line 8 her attributing to herself some little weaknesses—forgetting—

[1]Ellipsis [82] is a rhetorical figure enabling economy of expression. If one goes into a bar and says "a beer please", it is clear from the context that one means "I would like a beer". A certain part is omitted because it is clear from the context what is meant. Hence, it is sufficient for the patient to express herself in this abbreviated form. She can make use of the "common ground" that has been established and builds on it.

brings something to the communication that is already visible to both parties. At the same time, it communicates something new, more than just having forgotten something: the patient positions herself [83] as nondominant in relation to the previous sharp and markedly loud "YES!" The therapist quickly concludes with "Yes"; she acknowledges what the patient has said about her forgetfulness.

To conclude: the "common ground" is sufficiently established for ellipsis to be used, but the question of who is in charge or how the relationship will otherwise be defined has yet to be answered. The patient falls in pauses. By raising her voice slightly, the therapist tries to restart the "interaction engine" [84] and says her "Yes" (line 11), which, when one listens to the tape, is reminiscent of many utterances therapists use to prompt their patients to speak. Now, the patient says:

Third example: DP, initial session, continuation:

12	**T:** ↑ Yes (1.3) ((rustling stops)) ***T:*** *↑ Ja (1.3) ((rustling stops))*
13	**P:**.h Did you speak to Doctor INNerst again? ***P:****.h Ham Sie mit der FrauDoktorINNerst nochmal gesprochen?*
14	**T:** No, ***T:*** *Nein,*
15	**P:** Gar [nich; ***P:*** *Not at [all;*
16	**T:** [n::] ***P:*** *Gar [nich;*
17	**P:** But you know (.) about the project ***P:*** *Aber Sie wissen (.) um das Projektund=*
18	**T:** =Yes yes; t=sure;= ***T:*** *=Ja ja; t=klar;=*
19	**P** =mhmh= ***P:*** *=mhmh=*
20	**T:** =of course. hmhm?= ***T:*** *=natürlich. hmhm?=*
21	**P:** =Okay:. ***P:*** *=Oke:.*
22	(1.8)
23	**T:** Perhaps you could simply talk about >what is most important to you<, what now brings you (---) to me? ***T:*** *Vielleicht erzählen Sie einfach >das, was Ihnen am wichtigsten ist<, was Sie jetzt (---) zu mir führt?*

Again, the first remark takes up something that has already been spoken about. Again the therapist responds in the minimalistic way possible. The patient now takes the initiative (line 13), makes sure that the therapist knows what she is talking about and concludes this clear series of articulations of "my mind is with you" with a final "=Okay:.", drawn out and with falling intonation.

In clinical terms, one would speak of "clarifying the referral context". However, something else occurs here to allow empathy to be established. Besides the referral context, the question of whether and to what extent the therapist knows why a recording is being made is negotiated. Once this has been established, the patient knows that the therapist knows, but again she does not yet know whether the therapist will also realise an attitude of "my mind is with *you*". The fact that the patient, despite her many attempts to initiate a conversation, cannot know if this is the case could be perceived to be a difficulty arising from a rigid approach to the concept of neutrality. This concept demands a therapeutic attitude that shows the patient nothing more than the patient has shown herself—as Freud puts it with his metaphor of the mirror. The therapist marks the professional difference from everyday communicative practices, and at the same time she makes it difficult to establish "common ground"; the patient cannot know anything about the relevant dimension of the question "is your mind with me?"

At this point, we do not wish to present any more material from this conversation; it suffices to establish that here we have a special realisation of the therapeutic concept of neutrality—in contrast to a "silent" response to the question "is your mind with me?" We can recognise some problems pertaining to this particular realisation, but also to the concept *per se*.

By way of comparison, we will now turn to an opening scene from a second CBT session. We are not privy to the first session. We have a male patient and a female therapist:

Fourth example, CBT, second session

1	((Recording begins, silence, someone can be heard slowly turning pages))
2	**T:** °exactly.° ***T:*** *°genau.°*
3	(-)
4	**P:** °shall we start now?° ***P:*** *°fang wa jetzt mal an?°*
5	(7)
6	**T:** Today is the fifteenth. ***T:*** *Heute ist der Fünfzehnte.*
7	(2.6)
8	**T:** (?written it down.?) I'll evaluate it right away, I'll show you it next [time. **T:** *(?des aufgeschrieben.?) Des wert ich dann aus, des zeig ich Ihnen dann das nächste [Mal.*
9	**P:** [Yes **P:** [Ja
10	(--)
11	**T:**.h and (.) here is another questionnaire, I'd like you to take it with you= ***T:****.h und (.) des is noch 'n Fragebogen, den will ich Ihnen mitgeben.=*
12	**P:** =ok= ***P:*** *=ok=*
13	**T:** =that that just saves us a lot of time.= ***T:*** *=des der spart uns einfach ne Menge Zeit.=*

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14 **P:** =mhmh,=
P: *=mhmh,=*

15 **T:** =If you (--) fill it [in at home, it's also about your
T: *=Wenn Sie den (--) zu Hause aus[füllen, da geht's halt auch um Ihre*

16 **P:** [mhmh,
P: *[mhmh,*

17 **T:** <Life story>=
T: *<Lebensgeschichte>=*

18 **P:** =Yes=
P: *=Ja=*

19 **T:** =and (-)
T: *=und (-)*

20 **P:** yes,
P: *ja,*

21 **T:** because then we have it condensed; and don't have to (-)
T: *weil dann haben wir das so geballt; und müssen nich (-)*

22 **P:** mhmh,
P: *mhmh,*

23 (--)

24 **T:** >I mean we will certainly come back to this, but then<=
T: *>Also wir kommen sicher hier auch immer wieder drauf, aber dann<=*

25 **P:** =Yes
P: *=Ja*

26 **T:** one can simply [get into it much quicker. Yes?=
T: *kann man einfach [viel schneller einsteigen. Ja?=*

27 **P:** [Yes quite (-) it's ok =yes
P:*[Ja gnau (-) is ok =ja*

28 (1.2)

29 **P:** Yes=
P: *Ja=*

30 **T:** °°=good.°°
T: *°°=schön.°°*

31 (1.4)

32 (-)

33 **T:** Right now those were (h) the orga (h)nisatio (h)national matters?
.hhh yes now [ho:w] have you been this week.
T: *Also das waren jetzt so (h) die orga (h)nisato (h)rischen Geschichten?*
.hhh ja jetzt [wi:e] erging's Ihnen denn in dieser Woche.

34 **P:** [(Loudly clears throat)

35 (1.9)

36 **P:** This morning I=heard on the radio; (.) a great line.
P: *Heute Morgen hab=ich im Radio; (.) 'n tollen Spruch gehabt.*

37 (-)

We can immediately recognise an entirely different structure to the conversation. The speakers shift rapidly (shown by =). It is the patient who makes the first pressing remark (line 4). It is the therapist who speaks much more than the patient; the subject is the completion of a questionnaire which "saves us a lot of time" (line 13)—here too the focus is on being pressed for time. In quick succession, the patient gives off signals that he is listening, which seems to spur on the therapists' fast talking. The therapist plays down the questionnaire on his life story in two ways: they will then have a "condensed" version and can "get into it much quicker"—into the project of common therapeutic work.

6. Deontic authority

"Deontic" is derived from the Greek "deon" and means the cohesive force, the binding effect of utterances, and is thus an apt term for the topic of "commitment". This effect must be expressed, employed and articulated via conversation, and then, in a second stage, it must be answered by the listener, with either agreement or resistance or disagreement. The archetypical deontic modal verbs come into play here: "must", "should", "may". Deontic authority can look backwards, if it is a question of what one should have done, but it has greater significance when it comes to decisions concerning shared future activities. Then, the implicit question arises as to who has the right to announce or suggest decisions and ultimately to make them. The second speaker's answers become significant in steering further interaction. This second turn can entail agreement or disagreement and can conceal it or delay it.

We have already seen an example of this in the first DP session we examined, when the therapist (line 12) expressed her loud "YES!" with its emphasis and the patient did not follow, but asked another question (line 13). In response to the next attempt to begin with the project (line 23), when the patient receives the invitation to "simply talk about" what "is most important" to her, she reacts by saying that Doctor Innerst recommended the therapist to her.

A similar constellation illustrating the significance of deontic authority can be observed in the opening sequence of the "student" case:

Fifth example: opening of the "The Student", initial interview

---

1 **T:** So (-) sit here
T: *So (-) hier Platz nehmen*

2 (4)

3 ?: °hhhhh..°
?: °hhhhh..°

4 (5)

5 (Footsteps are heard)

6 **T:** SO!
T: SO!

7 (2.4)

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8 **T:** I don't know::w much >about you< (..) >individual details< °yes:° (..) Dr. Thanner briefly (.) spoke about you and said that you were looking for a::n (.) >>appointment for therapy << =
T: *Ich weis::s >über Sie< nicht vie:l (..) >Einzelheiten< °ja:° (..) Thanner hat kurz (.) über Sie gesprochen un gesagt dass Sie ei::n (.) >>Behandlungs-*
platz suchen<< =

9 **P:** °°hmhm°°
P: *°°hmhm°°*

10 **T:** =and (-) perhaps (2) >>let's talk about what=brings<< (1.2)you=here?
T: *=und (-) vielleicht (2) >>sprechen wir da darüber was=Sie<< (1.2)*
hierher=führt?

11 **P:** yes and did-d you get the QUEstionnaire=that=I=filled in? nd filled in one= of those FOrms about WHAT my problems are
P: *ja un habb=n Sie den BOgen kriegt=den=i=ausg'füllt hab? nd da so=n BOgen ausgefüllt grad WAS eben meine Probleme sin*

12 **T:** They're Obsesss::: some sort of obsess::= [behav=
T: *Sind ZWANgsss::: irgendwelche Zwangsss::= [verhal=*

13 **P:** [=I mean sort of °control obsession°
P: *[=also so °Kontrollzwang°*

The German "so" with which the therapist begins here is a somewhat prototypical particle of deontic authority [85]. It performs a variety of social functions. One of them is ending one sequence and opening the next—in this case the act of both people entering, which we clearly recognise from the footsteps on the tape, comes to an end and something else begins. The therapist is entitled to use "so"; this marker of completion/opening requires agreement however. A patient could respond entirely differently. The therapist's second, louder "SO!" firmly reinforces the impulse to begin the therapeutic conversation; he then makes a suggestion, the introductory "perhaps", which suggests implicit knowledge that this form of authority is dependent on the listener; he can suggest something, but will it be accepted?

With the words "perhaps (2) >>let's talk about what=brings<< (1.2) you=here?" the therapist initiates the project of therapy, and given our discussion of conditional relevance, the patient would now have to obey the friendly command. But he reacts with a question that forces the therapist into the complementary role of the respondent: he cannot avoid answering. Deontic authority's potential to make decisions relating to the (social) world is dependent on cooperation, confirmation and collaboration and is thus constantly attempting to negotiate. In clinical terms, we can speak of the first signs of a power struggle.

We can observe similar patterns in the CBT session, since here the patient takes the initiative through his first remark (line 4) "*°shall we start now?°*". Before they can start, the therapist is still focussed on a "different project", the questionnaire, and pushes this project through hurriedly while attempting to justify it. From line 33 onwards he begins the "project of therapy" with an expression that seems more appropriate for the friendly private context than the professional: ".hhh yes now [ho:w] have you been this week". Her deontic authority receives no more ratification than elsewhere, however: the patient does not answer the question, but tells her about what he heard on the radio. At this point, we can observe how cooperation does not materialise, how the creation of local role pairs fails. Social roles are institutionally stabilised and enduring, for example the pairing of therapist and patient, speaker and listener and so on. Local roles are in constant flux. The act of not answering a

question then becomes a relevant element of the interaction. It is not about the missing content, but about who is allowed to speak. There is usually something that we would label "compromise" in clinical terms: the person asking the question repeats it and deals with the lack of an answer by reacting as if the other person had not understood the question properly. Inevitably, that impacts on deontic authority and its balance throughout the interaction.

7. Rupture-repair

Just as mothers cannot always respond with complete empathy to the demands of their children, but make a number of adaptations, therapists too adapt when they notice that they have got things wrong. Repair activity is explicitly oriented around something that has already occurred between the participants and has been perceived by both of them; it is an attempt to develop a level of conversation about these events. If repair is successful, the patient can have a multi-dimensional experience that goes a long way to promoting empathy: he notices

a. *that* another person notices his retreat;

b. that this person shows he is prepared to reset himself and his contributions;

c. further, *how* the other person responds; and finally

d. whether that person's activities are helpful and clear something up.

This is of great importance for the development of cooperative trust. Often, the patient cannot know whether or not the therapist is actually trustworthy; at the same time, everything hinges on this question. However, if the patient can recognise that the therapist has not missed something that was bothering him, and that the therapist has introduced repair activities, then he can begin to form a positive impression of the therapist's "mindfulness" [86].

The term "rupture" describes a situation in which the cooperation described above fails, in which the participants cannot anticipate which local role functions their counterpart will adopt, which "pair" they will become. Of course, "ruptures" can also occur at later stages of therapy, for instance, if a patient recognises disloyalty or similar violations on the part of the therapist. "Ruptures" are not connected to opening situations. If therapy starts with difficulties that does not mean that the entire treatment is doomed to failure. Rather, repaired ruptures can often lead to a better relationship between the patient and the therapist.

Let us examine an example of depth-psychological treatment from the same initial session. The patient had somewhat hesitantly embraced her therapist's attempts to start the session and had told her something about her life. She concludes this narration with a brief coda:

Sixth example: the same DP as in the third example, initial session

---

146 **P:** ((some words omitted)) And then I also realised that I:
yes (1,7) that has come to mean quite a lot to me professionally how
I am feeling: (-) that I (---) °h° (through the nose) (--).hhh (1.5)
P: *((einige Worte ausgelassen)) Und ich hab dann auch festgestellt, dass ich:*

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eben (1,7) dass es mir mittlerweile beruflich ziemlich viel ausmacht wie ich drauf bin also: (-) das mir (—) °h° (durch die Nase) (–).hhh (1.5)

147 **T:** >>°°mhm:;°°<<
T: *>>°°mhm:;°°<<*

148 (1.6) (noises)

149 **P:** °that I lack self-confidence a(h)nd° ((in a trembling weak voice))
P: *°dass mir Selbstvertrau'n fehlt u(h)nd° ((mit bebender schwacher Stimme))*

150 **T:** m: (1) I get the impression that you have (.) recently, (.) really really <pulled‹ yourself together.> here; ((crackling sound begins)) is that right, or (-) have I just imaged it now;
T: *m: (1) ich hab so den Eindruck, dass Sie sich auch jetzt (.) die erste Zeit, (.) sehr sehr <zusamm‹gerissen haben.> hier; ((Knistergeräusch beginnt)) is des richtig, oder (-) hab ich mir das jetzt nur eingebildet;*

151 (—)

152 **P:** Yes well I mean as you take it.
P: *Naja wie man's nimmt also.*

153 (1.3) ((Crackling))

154 **T:** I mean that you trie[d] to be ve:ry controlled (.) and (.) eh:er (1.4) ((Sound like something being pushed back and forth on the table))
T: *also dass Sie versucht[en] se:hr kontrolliert zu sein (.) und (.) ä:er (1.4) ((*Sound like something being pushed back and forth on the table*))*

155 **P:** [Su::re]
P: *[Kla::r]*

156 **P:** [I
P: *[Ich*

157 **T:** [So did you immediately have a bad fee:ling er (.) m towards (.) me now or ((sound of a packet of tissues being opened)) in this initial situation (–) ((rustling noise dies down))
T: *[Haben Sie denn 'n ungutes Gefü:hl er (.)m jetzt (.) mir gegenüber ((sound of a packet of tissues being opened)) in dieser Anfangssituation gleich gehabt, (–) ((Rascheln verschwindet))*

158 **P:** towards YOU!;
P: *IHN!en gegenüber;*

159 **T:** Yeah: or at the beginning of the conversation (---)
T: *Joa: oder in der Anfangssituation des Gesprächs (---)*

160 ((Sound of clapping and crackling stops))

161 **P:** No actually [not at all. It's only ever just a [bit
P: *Nee eigentlich überhaupt [nicht. Es ist nur immer so ein [bisschen*

162 **T:** [no? [hmhm,
T: *[nee? [hmhm,*

163 **P:**.hh difficult s I also said in the last conversation if you [well (--).h already had a fe:w (--) points of contact, then it's basically
P:*.hh schwierig s hab ich auch schon im letzten Gespräch gesagt wenn ma [halt (--).h schon 'n paa:r (--) Anlaufstellen hatte, dann ist das im Prinzip*

164 **T:** [mhm
T: *[mhm*

165 **P:** always a case; of you always (.)starting to <re:late> everything °a::°gain,> and;.h
P: *immer so; dass man immer (.) °w::°ieder neu anfängt zu <erzä:hln,> und;.h*

To use Heritage's terminology, the therapist makes several "observer responses" ("that you really pulled yourself together", "that you tried to be very controlled"). In both form and content, these responses are much more extensive than they would be in the everyday setting. The specificity of the professional conversation is being constructed. It is introduced by softening expressions such as "I get the impression" (line 150), which are used in "portioned" fashion. The therapist waits for the patient's ratification, sometimes expressed hesitantly as "yes well" (line 152), sometimes as a decisive "su::re" (line 155). Ultimately, the therapist discovers another reason for her patient's reticence: the transfer mode, "always (.) starting to >re:late> everything °a::°gain,>" (line 165).

Here the important thing is not only the information about the reasons for this understandable discomfort, but the fact that something can be "cleared up" which the patient would otherwise have left unmentioned—and thus unheard—throughout the rest of the conversation.

8. TPS

Here too we can see the difference between the clinical description and what can be observed via microanalysis. For more details, see [43]. Let us examine an example from the middle stages of the above DP treatment. We hold that it is instructive to study such examples in this level of detail, since insights can be gained that can then be applied to similar situations. The example in question is a disagreement caused by a potential error regarding a cancellation fee.

Seventh example: same DP, 50th session, opening.

---

1 (5) ((Rustling, loud banging))

2 **P:** Erm: (.) I would just come back to the thing with the: invoice, the last time; (---)
P: *Äerm: (.) ich würd nur drauf zurück komm mit de:r Rechnung, des letzte Mal; (---)*

3 **T:** hmhm,
T: *hmhm,*

4 **P:** I think (-) that=that (-) >I mean< (--) >regarding the invoice no< but we got it right: (--) overall we got it right:, m I think it was just because, we (---) erm that week, I think (--) With the cancellation; say: it was: (.) we would have to count either Thursday or Mondays, or such things, for example the holiday (---) simply both at once (.) o- once.
P: *Ich glaub (-) schon dass=das (-) >also< (--) >von der Rechnung her nich< aber das das mir richtig das: (--) wir insgesamt richtig gerechnet habn:, m ich glaub es lag einfach daran, das wir (---) äerm die Woche, glaub ich (--) Mit dem Ausfalln; so: definieren: (.) müssten also entweder Donnerstag oder montags, oder so solche Sachen, wie zum Beispiel den Feiertag (---) einfach beide gleich (.) g- gleich rechnen.*

5 (-)

6 **T:** Yes well that was just a mistake on my part. Especially as you had drawn my attention to it as well. (---) in the previous session.
T: *Nja des war einfach n Versehen meinerseits. Zumal Sie mich auch noch drauf aufmerksam gemacht hatten. (---) in der Stunde vorher.*

7 (1.2)

8 **P:** YES! H! ((laughs))
P: *JA! H! ((laughs))*

9 (---)

10 **P:** Yes well I [I was I was a bit
P: *Ja also ich [ich war ich war 'n bisschen*

11 **T:** [?
T: *[?*

12 **T:** And because of that er erm (-) I went through it in my diary, and looked at your cancell[ations and then (-) it was well the fifth.
T: *Und dadurch ähr ährm (-) hab ich das einfach in meinem Kalender durchgezählt, und hab Ihre Ausfallter[mine angeschaut und dann (-) war's halt der Fünfte.*

13 **P:** [mhm,
P: *[mhm,*

14 (---)

15 **T:** BUT! It is: (--) so to speak (.) I hope that you (-) aren't angry now. h ((laughing))
T: *ABER! Es is: (--) sozusagen (.) ich hoffe, dass Sie (-) des nicht jetz übelnehmen. h ((laughing))*

16 (-)

17 **P:** NO::! E::v [(?) ((59)) You can of course quite right I have to tell you this
P: *NEE::! E::w [(?) ((59)) Sie könn ja ganz genau ich muss Ihnen des ja erzählen*

18 **T:** [yes?
T: [ja?

19 **P:** that's a kind of. (--) Erm: (1.9) typical thing. (-) what's going on up there [that's like me ((laughs))
P: *das is sone Art. (--) Äerm: (1.9) typischer Ablauf. (-) was da oben vorgeht [des passt ma ((laughs))*

20 **T:** [Yes? WELL? TELL ME! Because (-)
T: *[Ja? NUN? MAL ERZÄHLN! Weil (-)*

21 **P:** I mean the e:r
P: *Also des äe:r*

22 **T:** FOR! ME IT IS NOT A PROBLEM! I! AM! SORRY!.=
T: *FÜR! MICH! IS! DES! KEIN! PROBLEM! MIR! TUT! DES! LEID!.=*

23 **P:** =y[es
P: *=j[a*

24 **T:** [Ä:ERM:! (-)
T: *[Ä:ERM:! (-)*

25 **P:** I [was so happy?
P: *Ich [hab mich so gefreut?*

We have what appears to be a trivial difference. The invoice was for a session, but the therapist had made a mistake and readily admits to it. The patient for her part wants to inform her that she has made a kind of discovery. If we take a close look at this opening to the 50th session, we can observe various small relevance markers. The patient "just" (line 2) wants to come back to it, she plays down the matter and wants to talk about her discovery; the therapist makes it highly relevant (line 6), culminating in self-flagellation: "Especially as you had drawn my attention to it as well. (---) in the previous session". She then says she hopes that the patient is not angry and finally stresses in a much louder voice with strong emphasis that she is sorry and that it is "not a problem!" Only once she has been "absolved" by the patient the latter can proceed with what she has to say.

Eighth example: continuation of the above

25 **P:** I [was so happy?
P: *Ich [hab mich so gefreut?*

26 **T:** [I NEVER! find that pleasant. Whenever I er er [have to do (.) something like that?or I do it (.)
T: *[mir is des NIE! angenehm. Wenn ich äer äer sowas (.) machen, [muss? oder ich mach des*

27 **P:** [N:o: it's=a (.) that's cle:ar it was just about well (.) [because then I just
P: [N:ee: is=a (.) is ja kla:ar es ging nur drum also (.) [weil ich dann halt

28 **T:** [mhm,
T: *[mhm,*

29 **P:** however just er in inverted [commas regardless,
P: *auch immer gleich äer in Anführungs[zeichen unabhängig,*

30 **T:** [>hmhm?<
T: *[>hmhm?<*

31 **P:** I mean regardless of what happens=
P: *also vom vom Ablauf her=*

32 **T:** =mHHm,=
T: *=mHHm,=*

33 **P:** =it's completely typical of course in= such a situation li:ke (--) i=if something like that arises, I mean; (---) >°that I can I think< see quite well what is going on inside me.° It was very interesting for me too, because (.) in the session of course (-) I actually I'd say (--) er ca=came, (---) that I (--) was happy. And=
P: *=is des natürlich völlig typisch in=ner Situation wi::e (--) w=wenn sowas entsteht, also: (---) >°dass ich des so:: glaub ich< da dran ganz gut sehn kann was so in mir vorgeht.° Ich fands auch selber ganz interessant, weil (.) ich bin in der Stunde ja (-) eigentlich sag ich mal (--) äer so; ge=gekommen, (---) dass ich (--) mich gefreut hab. Und=*

34 **T:** =hmhm,=
T: *=hmhm,=*

35 **P:** =found a kind of trust, that we hadn't seen each other for a relatively long time, >I mean almost four weeks [or something:, < (--) and then it worked without
P: *=wie son eine Art Vertrauen gefunden hab,* dass wir uns ja relativ, lang nicht gesehn ham, >also fast vier Wochen [oder so:,< (--) und dann hat des geklappt ohne

36 **T:** [mHHm,
T: *[mHHm,*

37 **P:** ringing, and without arranging (.) something or whatever=
P: *zu telefonieren, und ohne irgendwas (.) auszumachen oder so=*

38 **T:** =mhmh,
T: *=mhmh,*

39 **P:** but (--) simply because I just ahem
P: *sondern (--) einfach weil's halt äem*

40 **T:** because it [was just certain, no?
T: *weil's halt sicher [war, ne?*

41 **P:** [was [sa (h)ved so to speak
P: *[gespei (h)chert [war sozusagen*

42 **T:** [>m=Yes (h)a?< mhm,
T: *[>m=Ja (h)a?< mhm,*

43 **P:** <an:d erm:> (1.1) then >°it° shocked me all the more? because I thought° whoops, (--) wha- is= >something< not right again now. (?and=well?)

P: *<un:d äerm:> (1.1) umso mehr hats mich dann >°hats mich dann° schockiert? >weil ich gedacht hab° hups, (--) wa- is=jetzt >wieder irgendwas< net in Ordnung. gewesen. (?und=halt?)=*

44 **T:** =mHHm.!
T: *=mHHm.!*

45 (---)

46 **P:** E:erm actually I rather had the feeling that I reacted quite strongly? Or that I well (.) objected. (1.1) to it beause somehow I [was right. And so and, (--)
P: *Ä:erm hatte ich eigentlich eher das Gefühl, dass ich relativ heftig? reagiert hab? Oder dass ich also m:ich ja auch (.) also. (1.1) gewe:hrt hab dagegen weil ich irgend[wie mich im Recht gefunden [hab. Und so und, (--)*

47 **T:** [mhmh, [mhmh,
T: *[mhmh, [mhmh,*

48 **T:** hmhm,
T: *hmhm,*

49 (1.1)

50 **P:** Then I went <out>? To the underground and then I also thought somehow (2.3) I was disappoin:tedt? And and annoyed that something or other was not quite:: >I mean that< (-) that the trust, somehow > I almost (saw) it as< trust? I mean (--) the trust was not there:. so to speak. [Now something has happened somehow that w (--) [but this
P: *Bin dann <raus>? Zur U-Bahn gegangen und hab dann auch gedacht irgendwie (2.3) Es hat mich enttäu:scht? Und und geärgert dass irgendwas nich so:: >also dass< (-) dass des Vertraun, irgendwie > ich hab des als schon fast als< Vertra:u? Also (--) des Vertraun war doch nich da:. sozusagen. [Jetzt ist irgendwie was passiert, was w (--) [doch dieses*

51 **T:** [mhmh, [↓mHHm,!
T: *[mhmh, [↓mHHm,!*

52 **P:** destroyed what I (.) had built up as it were. And then (.) [>I< sort of thou:ght about it and (---)
P: *was ich aufgebaut hab (.) >wieder< zerstört hat sozusagen. Und dann (.)[>hab ich< so drüber na:chgedacht und (---)*

53 **T:** [°mhmh,°
T: *[°mhmh,°*

54 **P:** then I also thought (--) that has just annoyed me too, >because I thought I had counted right? And so [on
P: *hab dann auch gedacht (--) des hat mich jetzt einfach auch geärgert, >weil ich gedacht hab ich hätte richtige gerechnet? Und so [weiter*

55 **T:** [m:hm:;
T: *[m:hm:;*

56 **P:** And then the process began slowly and surely however that I keep justifying myself? <or feel I'm on the right (--) side?> (--) rather then I start‹ to go through your sheet. Whether it might not be the case tha:t (–) and (.) for instance also the fact (1.6) >and I wanted to talk about (.) that with [you?< (---)
P: *Und dann hat aber langsam und sicher so der Prozess angesetzt dass ich nich mich dauernd selber rechtfertige? <oder mich auf der richtigen (–) Seite fühle?>(–) sondern das ich dann angefang‹ hab auch Ihre Seite durchzurechnen. Obs <nicht doch> sein könnte da:s, (–) und (.) zum Beispiel auch die Tatsache (1.6) >und des (.) wollt ich auch mit [Ihn‹n besprechen?< (—)*

We can clearly recognise how the patient speaks of finding "a kind of trust", but this trust is then badly damaged; it further shows how she associated that with an earlier experience ("destroyed what I had built up as it were") and how she noticed that she does not have to constantly justify herself. This piece of productive therapeutic work shows that even a TPS that appears to have set in early on in the treatment can be dealt with in such a fashion that the patient is able to experience self-enlightenment. This example can be understood as a meeting of two "troubles tellers", each of whom find the complementary position unoccupied. The

therapist is seeking exoneration, the patient is seeking an "ear" for her discovery. However, two "troubles tellers" cannot form a conversational pair—but it was possible to "re-pair" this local irritation.

9. Discussion

There are moments of profound reciprocal merging which give voice to physical processes of "limbic resonances" [87, 88] and in which people's knowledge about each other becomes transparent—although usually described as "unspoken"—and which would not have been considered possible without this experience. Most people, be they therapists or not, would describe such moments using the word "empathy". In fact, however, clinical experience tells us that the path to such "sites of empathy" is stony and full of obstacles. Does empathy not occur via these routes?

Here, we could show how sites of empathy can be recognised and responded to. We could describe preconditions of empathy, e.g. repairing activities, not to early motive construction and how empathic achievements are generated in cooperation of therapist and patient. A TPS seems to be a most relevant precondition for empathy, therapists should be trained in recognising and responding to them.

There are situations in conversations in which empathy is clearly strived for, while at other times it is directly impeded—but people continue or begin to talk with each other nevertheless. As long as one is "in conversation", empathy has a chance. Conversation consolidates empathy, which can only be created "in conversation"—the coproduction of empathy. Accordingly, one can distinguish the conversational preconditions of empathy from its actual realisation. Further, there are certain "sites" in which empathy must prevail in a particular fashion. Ultimately, the conversation partners must work together if their conversation is to be deepened and their relationship is to develop.

Let us now represent and in doing so summarise our project of an "architecture of empathy" by use of a diagram (see **Figure 2**).

Empathy needs preconditions (E-P), as simple as, e.g. being in a conversation in contextual circumstances as therapeutic or mother–infant situations. Such preconditions can result in an empathetic "path" or, on the other hand, in its termination. We posit further "sites of empathy" (SE), in particular TPSs and RRCs (rupture-repair cycles). Such "sites" outline a special opportunity where empathy can be performed. This is bidirectional.

Finally, we have "empathy achievements" (E-As) that are by no means the work of the therapist alone. They are based on sites, on preconditions arranged by the institutional rules of conduct and by the patient's offers. Insufficient research has been conducted on patients' achievements of empathy for their therapists and their mistakes [89]. Sites, preconditions and empathetic achievements constitute the "empathic field" that is communicated to the participants via the growing security of significant "common ground". Common ground goes beyond the empathic field into the domains of language, culture and societal discourse. This field is represented as an oval surrounding the above diagram. The empathetic achievements

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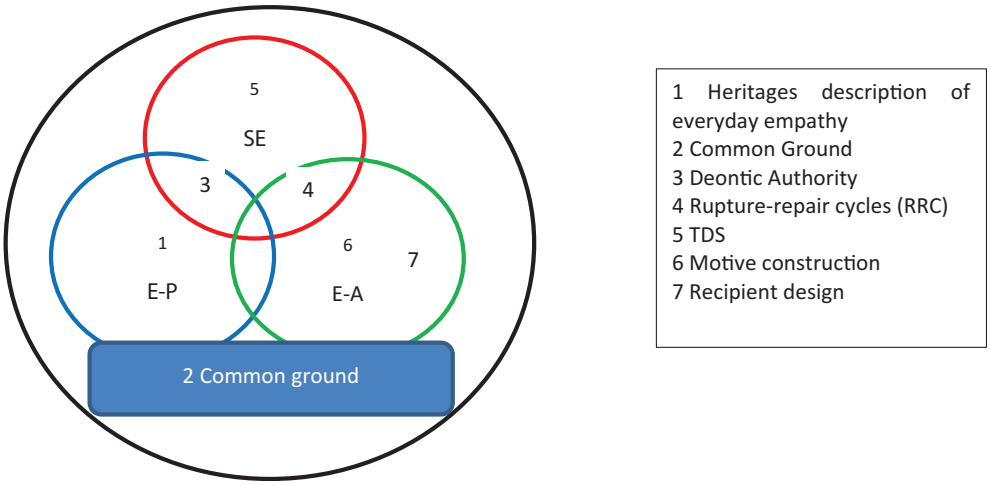

Figure 2. Empathy, its conceptual "pillars", its assumptions, its sites and its performances.

are communicated in the form of motivation constructions, individualised recipient design and RRCs. We must emphasise once again that this is by no means a one-way affair communicated by the therapist to the patient, but a reciprocal process.

We hope to have made it clear that this research into the psychotherapeutic process has the capacity to examine empathy as an aspect of therapy consisting of many different parts. The whole we term the architecture of empathy as it is realised via conversation.

Many authors quite rightly stress that in inquiries into empathy it is the tone that makes the music, and thus, prosody must also be examined. To date, our own studies have proven unusually complex [42]. Our methodological objective will be to use the CA approach described here to identify some striking passages in which something seems to be "happening". Those passages will later be examined through the prism of prosody in order to explore whether something is indeed happening and what that might be.

We hold that this type of process research is of benefit to clinicians. While we have used unusual terminology, it is necessary if the study is to be useful. Clinical readers may consider this use of terminology to be unreasonable—the benefit is that one day we will have a better understanding of our main therapeutic tool, treatment via talk-in-interaction. Clinicians should merely recognise that there is a supplementary set of conceptual tools which, we hope, can help provide comprehensive analysis of the complex conversations that take place in everyday clinical practice.

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References

[1] Baron-Cohen S. The Science of Evil: On Empathy and the Origins of Cruelty. New York: Basic Books; 2011

[2] Golan O, Baron-Cohen S, Hill J. The Cambridge Mindreading (CAM) Face-Voice Battery: Testing complex emotion recognition in adults with and without Asperger syndrome. Journal of Autism and Developmental Disorders. 2006;**36**:169–183

[3] Collins R. Interaction ritual chains, power and property: The micro-macro connection as an empirically based theoretical problem. In: Alexander JC, Giesen B, Münch R, Smelser NJ, editors. The Micro-Macro Link. Berkeley: University of California Press; 1987. pp. 193–206

[4] Collins R. Violence—A Micro-Sociological Theory. Princeton, Oxford: Princeton University Press; 2008

[5] Collins R. The micro-sociology of violence. The British Journal of Sociology. 2009;**60**:566–576

[6] Collins R. Entering and leaving the tunnel of violence: Micro-sociological dynamics of emotional entrainment in violent interactions. Current Sociology. 2013;**61**:132–151. DOI: 10.1177/0011392112456500

[7] Mazur A. A hormonal interpretation of Collin's micro-sociological theory of violence. Journal for the Theory of Social Behavior. 2009;39(4):434–447

[8] Bergmann JR. The triviality of catastrophy - situations of border-objects. In: Hörster R, Köngeter S, Müller B, editors. Grenzobjekte. Jenseits der Differenz—Entwicklungsformen in der Sozialwelt. 1st ed. Wiesbaden: VS Verlag für Sozialwissenschaften; 2013. pp. 285–301

[9] Aragno A. The language of empathy: An analysis of its constitution, development, and role in psychoanalytic listening. Journal of the American Psychoanalytic Association. 2008;**56**:713–740

[10] Tronick E. The Neurobehavioral and Social-Emotional Development of Infants and Children. New York/London: W.W. Norton; 2007

[11] Tomasello M, Carpenter M, Liszkowski U. A new look at infant pointing. Child Development. 2007;**78**:705–722

[12] Wilde Astington J. The developmental interdependence of theory of mind and language. In: Levinson SC, Enfield NJ, editors. Roots of Human Sociality. Culture, Cognition and Interaction. Oxford: Berg Publishers; 2006. pp. 179–206

[13] Pyers JE. Constructing the social mind: Language and false-belief understanding. In: Levinson SC, Enfield NJ, editors. Roots of Human Sociality. Culture, Cognition and Interaction. Oxford: Berg Publishers; 2006. pp. 207–228

[14] Gallese V, Goldman AI. Mirror neurons and the simulation theory of mindreading. Trends in Cognitive Sciences. 1998;**2**:493–501

[15] Gallese V, Eagle M, Migone P. Intentional attunement: Mirror neurons and the neural underpinnings of interpersonal relations. Journal of the American Psychoanalytic Association. 2007;**55**:131–176

[16] Gallese V, Bertram W, Buccino G. Mirror neurons, embodied simulation, intersubjectivity and language. In: Schiepek G, Aichhorn W, editors. Neurobiologie der Psychotherapie: Mit 32 Tabellen. 2nd ed. Stuttgart: Schattauer; 2011. pp. 323–338

[17] Schlicht T. Right in the middle or just aside: How does cognition work? In: Breyer T, editor. Grenzen der Empathie. Philosophische, psychologische und anthropologische Perspektiven. München: Wilhelm Fink Verlag; 2013. pp. 45–92

[18] Bergmann JR. Reenactments in everday interaction. In: Streeck U, editor. Erinnern, Agieren und Inszenieren—Enactments und szenische Darstellungen im therapeutischen Prozeß. Göttingen: Vandenhoeck & Ruprecht; 2000 pp. 93–112

[19] Denis P. Commentary on Samuel Zysman's clinical case. In: Canestri J, editor. Putting Theory to Work. How are Theories Actually Used in Practice? London: Karnac Books; 2011. pp. 71–78

[20] Spillius EB, editor. Melanie Klein—Heute. Beiträge zur Theorie (Band 1). München/Wien: Verlag Internationale Psychoanalyse; 1991

[21] Bergmann JR, Dausendschön-Gay U, Oberzaucher F, editors. The Case - Studies in epistemic practice of professional acting. Bielefeld: Transcript-Verlag; 2014

[22] Bergmann-Mausfeld G. Empathy and resonance - psychoanalysis and infant research. Forum der Psychoanalyse. 2000;**16**:204–213

[23] Bischof-Köhler D. Mirror image and Empathy. Bern: Huber; 1989

[24] Breithaupt F. Kulturen der Empathie. Frankfurt: Suhrkamp; 2009

[25] Breyer, T. (ed)., Frontiers of Empathy. Philosophical, psychological and anthropological perspectives. München: Wilhelm Fink Verlag; 2013

[26] Petersen Y, Köhler L. Attachment theory as base of psychotherapeutic interventions in der Terminal phase. Forum der Psychoanalyse. 2005;**21**:277–293

[27] Stueber KR. Rediscovering Empathy. Agency, Folk Psychology, and the Human Sciences. Cambridge/London: MIT Press; 2006

[28] Buchholz MB. Patterns of empathy as embodied practice in clinical conversation—A musical dimension. Frontiers in Psychology. DOI: 10.3389/fpsyg.2014.00349

[29] Weiste E, Peräkylä A. Prosody and empathic communication in psychotherapy interaction. Psychotherapy Research. 2014;**24**:687–701. DOI: 10.1080/10503307.2013.879619

[30] Lepper G. The pragmatics of therapeutic interaction: An empirical study. The International Journal of Psychoanalysis. 2009;**90**:1075–1094

[31] Goffman E. Interaction Ritual: Essays on Face-to-Face Behavior. 1st ed. Garden City, NY: Doubleday; 1967

[32] Goffman E. Frame Analysis: An Essay on the Organization of Experience. New York: Harper & Row; 1974/1986

[33] Garfinkel H. Studies in Ethnomethodology. Cambridge: Polity Press; 1967/1984

[34] Sidnell J, Stivers T, editors. The Handbook of Conversation Analysis. Chichester, West Sussex, UK: Wiley-Blackwell; 2013

[35] Sacks H, Jefferson G. Lectures on Conversation. Edited by Gail Jefferson, with an Introduction by Emanuel A. Schegloff. Oxford: Basil Blackwell; 1992/1995

[36] Heritage J. Asymmetries of knowledge in patient-provider encounters: Three studies adopting conversation analysis. Patient Education and Counseling. 2013;**92**:1–2

[37] Heritage J. Epistemics in conversation. In: Sidnell J, Stivers T, editors. The Handbook of Conversation Analysis. Chichester, West Sussex, UK: Wiley-Blackwell; 2013. pp. 370–395

[38] Collins R. Interaction Ritual Chains. Princeton, NJ: Princeton University Press; 2004

[39] Kupetz M. Empathy displays as interactional achievements—Multimodal and sequential aspects. Journal of Pragmatics. 2014;**61**:4–34. DOI: 10.1016/j.pragma.2013.11.006

[40] Pfänder S, Gülich E. The interactive constitution of empathy during conversation. Ein Beitrag aus der Sicht der linguistischen Gesprächsforschung. In: Breyer T, editor. Grenzen der Empathie. Philosophische, psychologische und anthropologische Perspektiven. München: Wilhelm Fink Verlag; 2013. pp. 433–458

[41] Weiste E, Peräkylä A. A comparative conversation analytic study of formulations in psychoanalysis and cognitive psychotherapy. Research on Language & Social Interaction. 2013;**46**:299–321. DOI: 10.1080/08351813.2013.839093

[42] Buchholz MB, Reich U. Dancing insight. How a psychotherapist uses change of positioning in order to complement split-off areas of experience. Chaos and Complexity Letters. 2015;**8**:121–146

[43] Buchholz MB. Conversational errors and common ground activities in psychotherapy—insights from conversation analysis. International Journal of Psychological Studies. 2016;**8**:134–153. DOI: 10.5539/ijps.v8n3p134

[44] Buchholz MB, Kächele H. Conversation analysis—A powerful tool for psychoanalytic practice and psychotherapy research. Language and Psychoanalysis. 2013;**2**:4–30

[45] Couper-Kuhlen E, Selting M, editors. Prosody in Conversation—Interactional Studies. Cambridge, England/New York: Cambridge University Press; 1996

[46] Forrester M, Reason D. Conversational analysis and psychoanalytic psychotherapy research: Questions, issues, problems and challenges. Psychoanalytic Psychotherapy. 2006;**20**:40–64

[47] Kondratyuk N, Peräkylä A. Therapeutic work with the present moment: A comparative conversation analysis of existential and cognitive therapies. Psychotherapy Research. 2011;**21**:316–330

[48] Peräkylä A, Antaki C, Vehviläinen S, Leudar I, editors. Conversation Analysis and Psychotherapy. Cambridge, New York: Cambridge University Press; 2008

[49] Richardson DC, Dale R, Kirkham NZ. The art of conversation is coordination: Common ground and the coupling of eye movements during dialogue. Psychological Science. 2007;**18**:407–413

[50] Huber D, Klug G. The Munich Psychotherapy Study. Psychotherapeut. 2016:1–6. DOI: 10.1007/s00278-016-0139-7

[51] Ruusuvuori J. Managing affect: Integration of empathy and problem-solving in healthcare encounters. Discourse Studies. 2007;**9**:597–622

[52] Heritage J. The interaction order and clinical practice: Some observations on dysfunctions and action steps. Patient Education and Counseling. 2011;**84**:338–343. DOI: 10.1016/j.pec.2011.05.022

[53] Heritage J, Lindström A. Knowledge, empathy, and emotion in a medical encounter. In: Peräkylä A, Sorjonen M-L, editors. Emotion in Interaction. New York: Oxford University Press; 2012. pp. 256–273

[54] Koenig CJ, Wingard LM, Sabee C, Olsher D, Vandergriff I. Managing patient-centered communication across the type 2 diabetes illness trajectory: A grounded practical theory

of interactional sensitivity. Journal of Applied Communication Research. 2014,**42**:1–24. DOI: 10.1080/00909882.2014.911943

[55] Ruusuvuori J. "Empathy" and "Sympathy" in action: Attending to patients' troubles in Finnish homeopathic and general practice consultations. Social Psychological Quarterly. 2005;**68**:204–222

[56] Goffman E. Response cries. Language. 1978;**54**:787–815

[57] Heritage J. Territories of knowledge, territories of experience: Empathic moments in interaction. In: Stivers T, Mondada L, Steensig J, editors. The Morality of Knowledge in Conversation. Cambridge/New York: Cambridge University Press; 2011. pp. 159–183

[58] Schütz A. The meaningful architecture of the Social World. Eine Einleitung in die Verstehende Soziologie. Vienna: Springer; 1932

[59] Alder M-L, Brakemeier E-L, Dittmann M, Dreyer F, Buchholz MB. Parapraxes as empathy-chances - if the projects of patient and therapist run counter each other 2016 DOI: 10.1007/s00729-015-0056-1

[60] Luke KK, Pavlidou T-S, editors. Telephone Calls: Unity and Diversity in Conversational Structure across Languages and Cultures. Philadelphia, PA: John Benjamins Publishing; 2002

[61] Schegloff EA. Sequence Organization in Interaction. A Primer in Conversation Analysis. Vol. I. Cambridge: Cambridge University Press; 2007

[62] Clark HH. Social actions, social commitments. In: Levinson SC, Enfield NJ, editors. Roots of Human Sociality. Culture, Cognition and Interaction. Oxford: Berg Publishers; 2006. pp. 126–152

[63] Searle J. The construction of societal reality. The Ontology of social facts. Reinbek: Rowohlt; 1997

[64] Searle JR. Collective intentions and actions. In: Schmid HB, Schweikard DP, editors. Kollektive Intentionalität: Eine Debatte über die Grundlagen des Sozialen. 1st ed. Frankfurt am Main: Suhrkamp; 2009 pp. 9–34

[65] Stevanovic M, Peräkylä A. Deontic authority in interaction: The right to announce, propose, and decide. Research on Language & Social Interaction. 2012;**45**:297–321

[66] Schegloff EA, Jefferson G, Sacks H. The preference for self-correction in the organization of repair in conversation. Language. 1977;**53**:361–382

[67] Hayashi M, Raymond G, Sidnell J, editors. Conversational Repair and Human Understanding. Cambridge, UK/New York: Cambridge University Press; 2013

[68] Safran JD, Muran JC. Negotiating the Therapeutic Alliance—A Relational Treatment Guide. New York: The Guilford Press; 2000

[69] Kitzinger C. Repair. In: Sidnell J, Stivers T, editors. The Handbook of Conversation Analysis. Chichester, West Sussex, UK: Wiley-Blackwell; 2013. pp. 229–257

[70] Forrester MA. The emergence of self-repair: A case study of one child during the early preschool years. Research on Language & Social Interaction. 2008;**41**:99–128. DOI: 10.1080/08351810701691206

[71] Egbert MM, Golato A, Robinson JD. Repairing reference. In: Sidnell J, editor. Conversation Analysis—Comparative Perspectives. Cambridge: Cambridge University Press; 2009. pp. 104–132

[72] Braten S, Trevarthen C. Prologue: From infant intersubjectivity and participant movements to simulation and conversation in cultural common sense. In: Braten S, editor. On Being Moved. From Mirror Neurons to Empathy. Amsterdam/Philadelphia: John Benjamins Publishing; 2007. pp. 21–35

[73] Meltzoff AN, Brooks R. Intersubjectivity before language: Three windows on preverbal sharing. In: Braten S, editor. On Being Moved. From Mirror Neurons to Empathy. Amsterdam/Philadelphia: John Benjamins Publishing; 2007. pp. 149–175

[74] Meltzoff AN, Prinz W, editors. The Imitative Mind. Development, Evolution and Brain Bases. Cambridge/New York: Cambridge University Press; 2002

[75] Schneider G. There isn't the True in False, but the right in wrong. About failures and problems, they cause and about parapraxes in psychoanalysis. Jahrbuch der Psychoanalyse. 2014;**69**:15–48

[76] Buchholz MB, Spiekermann J, Kächele H. Rhythm and Blues—Amalie's 152nd session. From psychoanalysis to conversation and metaphor analysis—and back again. International Journal of Psychoanalysis. 2015;**96**:877–910

[77] Buchholz MB. From anxiety to compulsion - which energies are helpful in "serious" disorders. Psychotherapeutenjournal. 2012;**11**:308–318

[78] Buchholz MB. The subtleties of therapeutic talk. Conversation analysis of a psychoanalytic first interview. In: Bozetti I, Focke I, Hahn I, editors. Unerhört—Vom Hören und Verstehen: Die Wiederentdeckung der grundlegenden Methoden der Psychoanalyse. Stuttgart: Klett-Cotta; 2014. pp. 219–240

[79] Buchholz MB, Alder M-L. Communicative violence in psychotherapy. Language and Psychoanalysis. 2015;**4**:4–33

[80] Bergmann JR. Gossip - The social form of discrete indiscretion. Berlin/New York: Walter de Gruyter; 1987

[81] Schneider WL. Gossip as parasite of interaction and the moral of honor. In: Ayaß R, Meyer C, editors. Sozialität in Slow Motion: Theoretische und empirische Perspektiven; Festschrift für Jörg Bergmann. Wiesbaden: Springer VS; 2012. pp. 595–614

[82] Bergmann JR. Interaction and exploration: a conversation analytic study for the opening phase of psychiatric intake interviews: Unveröff. Diss.; 1980

[83] Korobov N, Bamberg M. “Strip poker! They don’t show nothing!”. Positioning identities in adolescent male talk about a television game show. In: Bamberg MGW, de Fina A, Schiffrin D, editors. Selves and Identities in Narrative and Discourse. Amsterdam/Philadelphia: John Benjamins Publishing; 2007. pp. 253–272

[84] Levinson SC. On the human “Interaction Engine”. In: Levinson SC, Enfield NJ, editors. Roots of Human Sociality. Culture, Cognition and Interaction. Oxford: Berg Publishers; 2006. pp. 39–69

[85] Barske T, Golato A. German “so”: Managing sequence and action. Text & Talk. 2010;**30**: 245–266

[86] Ryan A, Safran JD, Doran JM, Muran JC. Therapist mindfulness, alliance and treatment outcome. Psychotherapy Research. 2012;**22**:289–297. DOI: 10.1080/10503307.2011.650653

[87] Hofer MA. Early social relationships: A psychobiologic perspective on bereavement. Psychosomatic Medicine. 1987;**46**:183–197

[88] Hofer MA. On the nature and consequences of early loss. Psychosomatic Medicine. 1996;**58**:570–581

[89] Kächele H, Grundmann EM. A Culture of mistakes. Psychotherapie und Sozialwissenschaft. 2011;**13**:5–9

[90] Huber D, Henrich G, Gastner J, Klug G. Must all have prizes? The Munich psychotherapy study. In: Levy RA, Ablon SJ, Kächele H, editors. Psychodynamic Psychotherapy Research. Evidence-based Practice and Practice-based Evidence. 350th ed. Totowa, NJ: Humana Press Inc.; 2011. pp. 51–71

Chapter 7

The Role of Empathy in Dealing with the Complexity and Uncertainty within the Educational Field: Meaningful Learning at the "Museum Adventure" Course

Yehudith Weinberger

Additional information is available at the end of the chapter

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Abstract

Empathic practices highlight teachers' emotional, social, and cognitive competence and play an important role in taking beneficial action in the classroom. The current manuscript explains the need and the significance of empathic proficiencies in meeting the present needs of promoting meaningful learning processes and dealing with the uncertainty and complexity of the educational field. The approaches, patterns of activity, and methods of qualitative researchers are proposed as a way to enrich the practices of educators in the context-based reality in which they live and work. The implementation of these ideas is presented through the description of a "Museum Adventure" course in an undergraduate education program for pre-service preschool teachers. The course aims to promote students' social understanding, sensitivity, and involvement.

Keywords: complexity, empathic listening, empathic proficiencies, empathic understanding, empathy, teacher education, uncertainty, meaningful learning

1. Introduction

Teachers' empathic practices emphasize their emotional, social, and cognitive competence and play a vital role in taking constructive action in the classroom. The aim of the current paper is to explain the need for and the significance of the empathic culture in meeting the present needs of promoting meaningful learning processes and dealing with the uncertainty and complexity of the educational field. I first present the characteristics of meaningful learning and then explain why it necessitates students to undergo a profound experience

of change. Following this, I describe how a variety of emotions are involved in this change and the challenges that these experiences reveal. Then, I propose empathetic pedagogies for understanding students' internal state and taking responsible action that benefits students' well-being and fosters their development. Finally, I demonstrate the implementation of these ideas in an art course in an education program for preschool teachers, which aims to promote students' social understanding, sensitivity, and involvement.

2. Meaningful learning

A deep educational experience is a complicated personal phenomenon, involving social, personal, and cultural aspects, and is based on dynamic and unpredictable processes [1]. As educators, one of our central aspirations is to bring meaningful learning experiences to our students that are relevant to their own realities, and which will make a difference in their overall cognition, emotions, and behaviors.

From the cognitive perspective, learning is a process of gaining new understandings of the world or exposure to new points of view, relating to one's existing knowledge. Understanding a new idea or term is "elusive to define," in the words of Anna Sfard [2] and involves internal processes and interpersonal interactions that the learner experiences. According to constructivist learning approaches, knowledge is actively constructed through a process of dialogue with others [3] and based on the learner's previous knowledge and experience [4]. Building subjective knowledge and creating meaningful new understandings involves intellectual activity and the activation of cognitive functioning. At times, this requires low-level thinking skills such as identifying the main idea in a text or organizing knowledge in a coherent fashion. At other times, this requires higher order thinking skills such as drawing conclusions from facts or creatively solving a problem. As such, learning is always a self-regulation process, which can often be a struggle, such as when there are gaps between previous beliefs and conceptions and new ones that may be different or may contradict those already known [5]. This learning takes place in ways that facilitates socio-cultural interactions between learners and their environment, including peers and teachers, in a range of experiential processes [6]. High levels of involvement are crucial for meaningful interactions during learning, since meaningful cognitive activity alters the physiology of the nervous system, raising our awareness and guiding us to act in line with the goals we have set for ourselves [7]. It follows that the process of deep learning, which creates new meaning for the learner, rests on two central aspects: the *change* that is inevitably initiated within the learner's consciousness and the active *involvement* of the learner in the process.

Following meaningful learning, change is expressed by one's construction of a new representation of reality, which sometimes incorporates previous perceptions. For instance, following an introduction to chlorophyll and the process of photosynthesis, the green foliage not only has an esthetic meaning as unique scenery but also gains a physiological meaning as a chemical material with unique properties that transforms the sun's chemical energy, which sustains the whole universe. Involvement in the learning may require more than just cognitive activity and can

include behavioral expression among learners in their actions, habits, and tendencies. For example, environmental values education raises the expectation of adapting environmental behaviors; scientific education in anatomy and physiology of the human body lends itself to a desire for a long, healthy life in terms of nutrition and physical activity; and exposure to the significance of empathy strengthens the hope for more humane and more interpersonal interactions.

These two characteristics, *change* and *involvement*, sharpen the distinction between meaningful learning and other educational experiences that learners experience in the classroom. Meaningful learning, by necessity, involves the creation of authentic explanations in the construction of new perspectives and their practical implementation. It is important to note that in the educational realm, there is room for and value to activities that do not create long-term cognitive and behavior changes among learners. Experiences of this sort can help expand students' human and personal horizons and serve as an important foundation for the accumulation of one's "life experience." At the same time, for the purpose of the remainder of this chapter, it is important to distinguish between these learning experiences and meaningful learning experiences—those that create new insights, which generate a change that alters the learners' consciousness and inner world and that recruits them to active involvement.

3. Learning and emotions

Meaningful learning, by definition, obligates the learner to go through a process of change. Every change, whether conceptual, emotional, or behavioral, invites the learner to leave their comfort zone and embark on an adventure. Nussbaim [8] terms this "leaving the cave," that is, leaving the egocentric perception of the things and experiences with which the learner is acquainted. Thus, for example, Shur and Galili [9] demonstrate a teaching practice called the "Thinking Journey," that is based on teacher-mediated discourse with the students. The aim is to connect what is being learned with the students' world and alter their understanding of the topic and to describe the emotional twists and turns that the students go through in its process [10].

Despite the traditional separation between cognition and emotions in learning, neuroscience studies demonstrate that cognitive and emotional processes are intertwined such that emotions influence our understanding during the learning process [11, 12] and the learning processes influence the emotional state of the learner. Expressions such as "cognitive emotions" [13] and "academic emotions" [14] highlight these close ties. Studies from the field of neuroscience provide evidence for the mutual support that emotions and cognition provide to each other in neurological processes. These studies show that the act of learning becomes a multisensory experience that leads to feelings in the learner's mind, is mapped on the brain as an emotional memory, and helps create a renewed sense of self [7]. Profound interaction stimulates both body and mind, cognition, as well as emotion. This facilitates deeper levels of understanding and consciousness, which are critical for meaningful learning [15]. Deep learning in academic subjects that traditionally are not thought of as emotional—such as math, physics, and engineering—has been empirically related to the creation of emotional

connections between concepts. For example, when mathematicians judge an elegant proof, the same parts of the brain are stimulated as when they experience an esthetic art experience such as amazement in front of a painting [16]. For this reason, fear can impede learners' functioning and interest can create long-term commitment to a particular topic.

Our intelligent and flexible brain can develop a variety of emotions that color and direct our intellectual and social efforts. Curiosity, for example, propels us to investigate and motivates us toward new discoveries. Adoration can lead us to emulate the best qualities of others, while anger regarding an injustice directs us to help those in need. One of the insights of neuropsychology is that emotions direct our intellectual and social lives by way of neurological systems that are responsible for our survival [17]. Some of the emotions are positive and are the types that uplift and inspire such as the enjoyment in validation, the pleasure of an elegant proof, the thrill of something surprising, or the astonishment from a beautiful image. Alongside these growth-inducing emotions, learning that enacts change in the learner's world floods the learner with negative emotions. These can include: fear in a testing situation, confusion from lack of knowledge, frustration from a lack of success, contending with surprising or disappointing results, or the difficulty in the practical implementation of new understandings that were learned. When the gaps are large and learners have to contend with dissonance between what is known and what is new, or between the ideal versus reality, and have to contain this dissonance, they can experience perceptual and emotional confusion. Piaget [18] termed this the equilibration of cognitive structures to emphasize the emotional upheaval that accompanies the lack of agreement between the existing approaches with the new ones that are being learned. This occurs when learners experience dissatisfaction from their existing approaches and the alternative seems logical and appropriate to a variety of situations that they experience. They then feel a need for a conceptual change and adopt the new concepts they are learning. Meaningful learning contains hidden potential to enrich the learner and facilitate growth. At the same time, contending with the cognitive changes and the emotional involvement that meaningful learning necessitates, upsets one's mental balance, invites uncertainty, and demands significant energy resources.

My main contention is that this is the nature and essence of deep learning that creates new meaning which is central in education. Students' optimal development as a whole person, in the various aspects of their existence, requires a learning process with built-in uncertainty. This approach highlights the pivotal role of teachers to accommodate students' upheaval, to be prepared to contend with the uncertainty that follows in its wake, and to mediate the situation in a way that can enable them to grow [19].

It can be said that teachers' ethical commitment to the development and growth of their students obligates them to relate pedagogically to the emotional, cognitive, and behavioral aspects that meaningful learning invites in the complex learning environment of their classes. From this perspective, teacher qualifications relate to the ability to deeply understand the learner's perspective, motivation, and difficulties, with the intention of mediating in the best possible way the uncertainty processes that accompany the change that transpires during meaningful learning. This implies that teacher education programs need to include an additional important ingredient—the topic of uncertainty as a characteristic of educational interactions, and

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the cultivation of tools to contend with it in class [20]. This approach can promote positive attitudes toward uncertainty in education among future teachers, who can see it as an integral part of learning processes that are dynamic, experiential, and unexpected, as opposed to a threat to their professional competence. In addition, the experience of preservice teachers in understanding unfamiliar educational situations, and contending with them productively, can promote the realization that despite the complicated and nonlinear process of education, educational practices are also characterized by a certain degree of regularity [21].

4. Complexity and uncertainty in education

As with most dynamic and varied activities that occur in human and cultural contexts and are based on interactions, education is an endeavor that, at its root, is complex [1, 22]. Consequently, it raises a feeling of uncertainty among its participants. Uncertainty is defined as a person's subjective cognitive experience, where the person is aware of a lack of knowledge or understanding in specific situations, a contradiction between thoughts and comprehension and behavior [23] or an inability to predict what will happen in the future. Uncertainty in the field of education is not only the providence of learners, as described previously; pre-service teachers and new teachers, as well as experienced teachers, report feelings of uncertainty that they experience in their classes. They report stresses, challenges, and gaps that contending with the field of education raises for them in their work. The most common stress is between the theoretical and the practical in education—between the humanistic philosophy that is taught during training [24] and the hierarchical and authoritative reality that teachers encounter in schools [25]. On the practical level, implementing empathic approaches in teacher-student interactions is a challenge when facing the reality of classrooms packed with students and educational policies that emphasize student achievements [26].

The scope of activity of an educator varies from one meeting to the next and is characterized by unavoidable uncertainty [27]. The definition of educational professionalism in this kind of environment is the ability to make informed judgments, quick decisions between alternatives, and to learn from one's personal experience [28]. Likewise, suspending judgment and freedom from preconceptions and prejudices alongside empathic competence has a decisive impact on teachers' abilities to understand the educational context in which they work. Ambiguity and uncertainty are built into the educational reality based on the assumption that every educational act involves a human interaction to which the participants bring their own experiences and motives. This is the dynamic nature of the interaction that develops between them. Consequently, the aspiration to advance educational processes and meaningful learning obligates us, the teacher educators, to reconsider teachers' training. One way of accomplishing this is to adopt complexity as an educational discourse dealing with complicated educational phenomena, characterized by a lack of consistency and predictability [29].

The advantage of a discourse of complexity lies in the concept of order in the field of education, not as a necessary ingredient, but as a possible ingredient, together with relating positively to the complexity and to nonlinear characteristics of educational activity [21]. Complex discourse

highlights the centrality of relationships and connects between people in educational interactions, in cognitive aspects, and the effectiveness of each one [1]. This is what makes it appropriate for the characterization of educational phenomena and for educational practices, which teachers need to conceive and implement in order to promote proper education [30]. Since my underlying assumption is that education and effective teaching are founded on productive human interactions and the establishment of good relations between the participants, teacher education programs should relate to the knowledge and relevant skills to contend with the complex challenges and uncertainty in the educational field. Not only is the ingredient of complexity not dealt with openly and thoroughly enough in traditional teacher training programs but also gaps, ambiguity, and uncertainty are almost never presented as an integral part of the teacher's activity. The traditional approach does not invest enough in the internal examination of patterns of activity, beliefs, and value systems of future teachers. Consequently, I suggest adding a pillar to training in both the theoretical approach—familiarity with empathic approaches and practices in education, as well as in the practical approach—experience with varied qualitative methods. The approaches, patterns of activity, and methods of qualitative researchers embody great potential to enrich the practices of educators. Qualitative research utilizes an applicable language that enables the expression of people's subjective experience, and thus actualizes the multifaceted and context-based reality in which they live and work. The experiences of student teachers with practices of this sort can advance their training in the spirit of empathic practices and foster discourse that emphasizes the complexity of the field of education and their future work with students.

5. Empathic proficiency and qualitative methods

Despite various meanings and uses of the term empathy [31], there seems to be a consensus that empathy involves seeing the world from another's perspective [32] as well as identifying and understanding another's state and emotions [33]. That is, empathy is a way of being with another person in order to enter his/her world without prejudice [34]. Empathy is a multidimensional concept that encompasses both affective and cognitive elements [31], together with awareness and behavioral dispositions. The affective dimension stresses the emotional response of the individuals when they identify an emotional experience in the other person, while the cognitive dimension focuses on their understanding of the other person's, affective, cognitive, or behavioral internal state [35–37]. Another important element of the empathic act is awareness; in this case, the ability to experience another's reality while maintaining one's own without losing sight of the boundaries between them [38]. Finally, behavioral disposition refers to a set of manners and habits such as active listening, suspending judgment, and, if needed, readiness to take actions compatible with the other person's state. These four dimensions (affective, cognitive, awareness, and behavioral dispositions) point to the complexity of the empathic act in terms of the vast array of skills required, while explaining empathy's potential to empower both the person who expresses it toward another as well as the person receiving it. Reflecting this, Nussbaum [39] refers to empathy as an expansion of the empathic person's humanity. That is, by employing empathic imagination, one can

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feel and understand the thoughts and actions of others—not by using one's own "internal grammar," but by trying to perceive and experience what the other person experiences in the context of their culture.

Based on these understandings of the great potential of empathy in the field of education, together with my colleague Iris Bakshy, I developed an educational conceptual framework—"Complete Empathic Act" (CEA)—which supports teachers in the development of empathic proficiencies (for further details, see [40]). The CEA begins with ethical intention based on the teacher's concern for the students, continues with the teacher's aim to understand the student's internal state, simultaneously maintains the duality between the two points of view (teacher and student), and concludes with taking a responsible action. The CEA is based on the proficiency of the empathic teacher to be with another person [34] in order to enter his world without prejudice to be sensitive to meanings felt by him and gain an understanding of his state. As such, empathic teachers function as skilled human instruments that carefully and attentively collect verbal and nonverbal information about the student, using the skills of open and careful observation with an intention to understand the student's state. In this way, they act as qualitative researchers, according to the phenomenological approach.

The information that empathic teachers gather is rich and extensive. It can be divided into two types: verbal information—the content that is passed from the student to the teacher through a verbal interaction, and nonverbal information—the nonverbal ways in which the content is conveyed during this interaction (volume and tone of voice, body language, and facial expression). The teacher receives the information through a discerning eye and an attentive ear, while holding an open and deep observation of herself and the student. Additionally, the teacher engages in active listening and an open conversation with the clear aim of understanding the situation. Eye contact, physical closeness, and awareness of the teacher's and students' nonverbal language are also needed at this stage of information gathering. The teacher serves as a researcher in phenomenological study, while employing active listening, sensitive observation, and comprehension. The process of information gathering is interwoven in the explanatory process that attempts to understand the gathered information in a nonjudgmental fashion, with the teacher suspending expectations, knowledge, previous opinions, and at times stereotypes. Phenomenological researchers emphasize that one who tries to understand a phenomenon from the perspective of the person experiencing it needs to "put oneself in parentheses." As the information, explanation, and evaluation accumulate, the teacher's understanding of the student's situation in a particular area of an interaction (as the student experiences and understands it) becomes more integrated. The student's perspective can be a means of thinking and understanding in any particular area, as can the students' emotions, motives, needs, opinions, and the like. The more mutual understanding that exists—when the teacher understands the student's perspective and the student recognizes the teacher's understanding—the more the system of meaningful relationships and good communication between the two is strengthened. This can increase the chance that student will see the teacher's action or response toward him as beneficial, reinforcing his self-esteem or constructive criticism, even if it is not consistent with the student's opinion regarding the desired action of the teacher toward him. This understanding is the basis for

activity that the teacher will take after comprehending the student's internal situation, after "being in his shoes."

Another important message, which is anchored in the use of qualitative methods in teaching, is that professional teachers are not satisfied with the use of existing knowledge, but rather create new and unique knowledge for the context in which they operate. Familiarity with qualitative tools during training can help teachers develop insights, accept decisions, and cultivate educational practices in line with their values, motives, and educational purposes. Fostering empathic skills along with flexible thinking will help teachers contend with complex and uncertain realities and even promote a mindset that is useful for contending with complexity [22].

As previously discussed, the uncertainty that is built into meaningful learning processes necessitates the empathic teacher to engage in balancing acts and foster good relations in the class. Empathic practices can serve as a safety net that promotes a feeling of security and belonging in all who come to the class. Teachers weave and spread this net through the formal and informal meetings that they conduct, and it can support and carry the feelings of uncertainty and upheaval that meaningful learning can elicit in the teacher and the students.

6. Empathic practices

Empathic practices serve an important role not only in the implementation of a beneficial activity with the students that will help them grow and advance their learning practices in the class but also in the establishment of the teacher's feelings of social and emotional competence in handling the uncertainty that accompanies meaningful learning experiences in the class. Empathic understanding allows the teacher to "be in the student's shoes," to understand the cognitive processes that they experience, to identify the mistakes in their thinking, their naïve, or misguided perceptions, or other barriers to applying their learning and translating it to a way of life. An empathic teacher is aware of the students' emotions and understands how these emotions relate to their cognitive conceptions and how these might influence their motivation for learning and behavior. Therefore, it would also be beneficial for the teacher to understand the upheaval and uncertainty in which the students find themselves when engaging in meaningful learning, which involves change.

Based on the ideas that have been presented in this chapter, it is possible to explain the balancing role that empathy plays in advancing meaningful learning in the complex reality in the field of education in which we live and educate our children. It is possible to visualize the expertise of an empathic teacher as the art of holding a stick at both ends simultaneously—one end is unbalanced while the other balances. On the one hand, the teacher exposes the students to educational experiences that promote a paradigm shift with the purpose of advancing meaningful learning, and on the other hand, the teacher helps the students contain the upheaval and uncertainty, mediates the gaps and difficulties, and thereby supports the learning process. In a previous publication, I illustrated how empathic practices can aid in advancing meaningful learning and handling controversial and emotionally charged issues in class [19]. In this chapter, I illustrate activity within a course that operates within the framework of the Center for

Empathy in Education and Society, which I founded at the Seminar Hakibbutzim College. The Center considers good relations between people as the educational and social core and sees in their nurturing a value and a condition for learning and growth. The Center's aims are to promote meaningful relationships based on listening, granting value to the other person's perspective, and building trust, which then forms the basis of living together, both at the school and in public spaces. The activities at the Center aim to develop new empathic practices, pool knowledge, and promote research in the field of empathy.

7. "Museum Adventure"

The purpose of the "Museum Adventure" course is to experience the "museum" as a space that invites learning and discovery and as a place for an adventure for personal and collective creation. The course is a part of the preschool teacher education program (B.Ed.) and led by a lecturer on the faculty of education at the College. The description here is based on written documentation (e.g., syllabus, correspondence, and reflective work), an in-depth interview, and observations of the course.

During the course, students are exposed to cultures, international social-artistic initiatives, and new worlds through the diversity and experience suggested by the term "museum." Participation in the course motivates a social enterprise through collaborative art. At the end of each year, the students erect a "Pop-Up Museum" at the College, in which they display exhibits and conduct interactive workshops and performances. The students thus include those at the college and the broader community in their artistic, social, and educational ideas and manifestations. Earnings from these initiatives are donated toward the production of illustrated children's books for the blind.

The course encourages students to "break down barriers," by engaging in a variety of interpersonal meetings, which are accompanied by learning processes and in-depth research that occur in a variety of time and places: in class, at the college, at public and virtual museums, in galleries, and in individual spaces. During these meetings, students attempt to express their personal ideas and lessons using a variety of artistic tools. The students practice their empathic skills by listening closely to themselves and to the stories of the public. They are partners in the production of insights from these experiences, which serve as a basis for the integration of their educational perceptions and formulation of their ethical ideas as humans and teachers.

In 2016, the "Empathy Museum[1]" was inaugurated and serves as a dynamic space that creates opportunities to "wear someone else's shoes," by encountering that person's story. The museum now serves as the home for the Pop-Up Museum, and the first project that was presented was "Toms' Shoes[2]." This project was planned and implemented based on the inspiration of a similar initiative that took place in Dubai and Jordan. It begins as a meeting between

[1]Located at the Center for Empathy in Education and Society at the College.
[2]Following our online exposure to the impressive social action by Tom's shoe company (www.Toms.com), we contacted their distributor in Israel, presented our social-artistic cooperation project, and suggested cooperating on a project that invites unique interpersonal meetings at the College. The company identified the connection between their social agenda and that of the College and agreed to our request and donated their canvas shoes.

two mothers, one Palestinian and one Jewish, who experience how much motherhood brings them closer to each other. The students in the course selected 21 participants from a variety of communities within the college for the project—administrative workers, lecturers, students, and maintenance workers. Two students tutored each participant, who designed one shoe in a personal way, relating to three authentic ideas from his/her life: happiness, pain, and a dream. The students' guidance began with in-depth research in relation to these three ideas, followed by further discussion, and concluded with the expression of these ideas in the design of the shoe. The students experienced each phase of the process for themselves in their classroom learning. The project culminated with a festive meeting between all the participants and the pairs of shoes, which were incorporated into a permanent exhibition space at the "Center for Empathy in Education and Society" (see **Figures 1–3**).

The pictures from the creations were sent to the artist who initiated the original project in Dubai and Jordan and the dream to form social and artistic connections in areas near and far came to fruition. The course instructor received an email from the Palestinian artist, under whose inspiration Project Thomas' Shoes was born:

> *Dear,*
>
> *It brings me great hope that, at times so brutal for our two people, that you and I can reach out and communicate…. But THIS, here, and my connection to my Israeli friends, no matter how we may or may*

Figure 1. To dance life.

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Figure 2. If music be the food of love, sing on.

Figure 3. The hope for peace.

> *not disagree on policy, brings me hope only because it is REAL…. As real as the violence that is so predominant everywhere…Thank you for taking the Soles & Stories initiative on, and with such beauty…. my dream is to bring these initiatives to Israel/Palestine, one day. The fact that you started one initiative inspired by us, already tells me that the universe is collaborating on making this happen one day….*

In the words of the course instructor, "the connection that was created brings with it the hope and craving for honest and close cooperation. We will continue to dream, to dare, to realize, and to influence."

8. Uncertainty, meaningful learning, and empathy during the course

The "Museum Adventure" course is revised each year. According to the lecturer, it is designed "in line with the desire, curiosity, and ideas that are stimulated by unexpected meetings between the students and social art phenomena." Uncertainty is built into the processes of

the course. The instructor notes, "The students start down the long road in unfamiliar spaces. This is the same journey that I went through myself. While I am there for them, I insist on suspending the uncertainty until they find the road themselves. They know that they power it anew." As to how the students experience the uncertainty, the lecturer notes, "The students explain uncertainty incorrectly. They wonder why they need it? How is it important and helpful?" It seems that these feelings run counter to their earlier expectations from the process of teacher preparation. The instructor also relates to the sense of discovery that is experienced by the students on their uncertain journey in the course. For example, one of the students wrote, "I never in my life felt like this when I found something, I felt that I was solving a huge riddle. Even the enormous effort and large number of hours until I got to this point." In relating to this, the instructor mentions, "I recognize the joy of discovery, how could I take that from the students?" One important purpose that she considers for herself is, "teaching them not to be afraid of uncertainty, to learn to deal with it."

At the same time, the lecturer also reveals her own challenges in containing the uncertainty in the class and the feelings that accompany it: "I don't always have the strength for these journeys and to carry the students' uncertainty and their need to get answers from me. Some of the students need tremendous support in these kinds of situations. It's a burden. As teachers, we may unconsciously avoid this." It seems that contending with uncertainty is complex and may raise controversial attitudes from the lecturer's perspective as well. Regarding the course's rationale, the instructor defends *uncertainty* using pedagogical arguments of promoting meaningful learning based on ethical and moral grounds: "If I want to really teach them, the only way to do so is to raise uncertainty … to allow them to experience an actual process of research and discovery and all that entails, difficulties, problems. If I reveal what I know, the answers, I'm not really teaching them—this is cheating. They won't learn this way. Honesty and ethics in teaching go hand in hand with uncertainty." An additional benefit to the uncertainty in the instructor's eyes is that, "with uncertainty, there is also freedom to move with the art, freedom that is related to learning and creation. I want the students to recognize this feeling of freedom. It comes from within, you are on a journey, and when this happens, everyone feels great happiness. I'm happy and the students are happy." These comments by the instructor highlight the inherent connection between the meaningful learning processes that take place during the course and experiencing a variety of emotions: feelings of freedom, happiness, and deep meaning.

The instructor's position on the topic is very clear. She is convinced that uncertainty is needed for authentic, deep, and meaningful learning, despite the difficulties that go along with it, and she is not giving up this ingredient from her teaching. She demonstrates that she has the necessary self-confidence to operate in the environment of uncertainty that goes hand in hand with trying to contain the students' experience of uncertainty. Regarding the resources that she draws upon to promote teaching and learning that are involved in uncertainty, she relates to the parallel processes of support and backing from the College: "From my perspective, it is possible since I know that I work in a framework that lets me, that backs me." According to the instructor, the administration's policy of supporting the advancement of complex processes in the students' training and varying learning experiences allows her to enter into the complex and uncertain journey in the classroom. The lecturer even notes that she has reached new heights in her professional development as an instructor: "Once you experience the taste

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and strength of teaching in the context of uncertainty, there is no going back. I also want to 'rest' from time to time, and teach from the safe and certain spaces that are based on expertise in the knowledge area and multiple years of teaching experience, yet each time I choose the 'non-automatic' way anew and with love. I think that the choice stems primarily from a feeling that the students trust me and I have to address this honestly." From the instructor's perspective, it is not simply a professional choice but also a way of life: "I want to motivate social processes that will do good. I am teaching my life." These statements demonstrate the emotional perspectives that elicit inspiration and reward alongside the painful that the processes of change and uncertainty invite deep learning that creates meaning. This is also a source of her strength: "The course steals a lot of energy, but I wouldn't give it up."

In relating to the empathic atmosphere that emerges during the course, the instructor notes: "The students' individual work process on the topics relevant to their lives, to their choice, to the meticulous listening process that accompanies the production of insight, over the course of the year creates a sense of security in the class that allows them to develop, and at times even to be exposed to the feeling that their friends and the instructor are there for them."

9. Summary

The "Museum Adventure" course is one example of how empathic skills and phenomenological approach can be practiced within the framework of teacher training, in a course whose aim was to promote sensitivity and social engagement through an artistic journey. The teaching process and learning in the course, as presented from the lecturer's perspective, reveal the instructor's ambivalence to the experience of ambiguity and uncertainty in the course. Despite the many challenges and resources required to execute such a course, the instructor helps spread a coherent educational values worldview, which she is able to practically implement in her teaching. Her belief in her ideas, the strengths that she draws upon from her feelings of competence, and the support of the institution's administration for her path are the sources of her ability to persevere with these kinds of practices. The empathic competencies that are practiced in this course, beyond the contribution to processes of deep and meaningful learning for the students training to be teachers, serve as a model for their future role as teachers.

In conclusion, my main recommendation for teacher education programs is to assert the idea of complexity and uncertainty as inevitable components of the educational endeavor and stress the importance of these emotions to meaningful learning and educational interactions. Recognizing the importance of the variety of emotions expressed when relating to the learning process is crucial to teachers' ability to mediate properly what is being learned. This has a decisive impact on the cognitive functioning of the students [41] and their ability to achieve deep meanings [10]. It is thus very important to equip both current and future teachers with tools and proficiencies to contend with these challenges in their classes. Involving future teachers in qualitative educational research can not only lay the foundations for shaping their professional identities as reflective practitioners but also cultivate their empathic practices and pedagogies. This can better prepare them to cope with the complexity and the uncertainty of the educational field in their future work with students.

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References

[1] Morrison K. Educational philosophy and the challenge of complexity theory. Educational Philosophy and Theory. 2008;**40**(1):19-34

[2] Sfard A. Thinking as Communicating. New York: Cambridge University Press; 2010

[3] Libman Z. Learner Performance in Statistics: A Comparison of Three Instructional Constructivist-Based Approaches. In: AERA Meeting; 3-7 April; Philadelphia; 2014.

[4] Ausubel DP. Educational Psychology: A Cognitive View. New York: Holt, Rinehart & Winston; 1968.

[5] Levy-Feldman I, Libman Z. Student assessment and good teaching: The gap between ideology and practice. In: Aloni N, Weintrob L, editors. Beyond Bystanders: Educational Leadership for a Humane Culture in a Globalizing Reality. Rotterdam: Sense Publishers; 2017.

[6] Vygotsky LS. Mind in Society: The Development of Higher Psychological Processes. Cambridge: Harvard University Press; 1980

[7] Immordino-Yang MH, Sylvan L. Admiration for virtue: Neuroscientific perspectives on a motivating emotion. Educational Psychology. 2010;**35**(2):110-115

[8] Nusseboum Y. Earth as a cosmic body. In: Nusseboum Y, Echiely T, editors. Misconceptions and Conceptual Change in Science [In Hebrew]. Tel Aviv: Mofet Institute; 1999

[9] Schur Y, Galili I. Thinking journey: A new mode of teaching science. International Journal of Science and Mathematics. 2009;**7**(3):627-646

[10] Shur Y, Nevo E. Processes uncertainty in meaningful learning. Dapim. 2017; (in press)

[11] Pekrun R, Linnenbrink-Garcia L. Academic emotions and students' engagement. In: Christenson SL, Reschly AL, Wylie C, editors. The Handbook of Research on Student Engagement. New York: Springer; 2012. p. 259-282

[12] Picard RW, Papert S, Bender W, Blumberg B, Breazeal C, Cavallo D, Machover T, Resnick M, Roy D, Strohecker C. Affective learning: A manifesto. BT Technical Journal. 2004;**22**(4):253-269

[13] Scheffler I. In Praise of the Cognitive Emotions (Routledge Revivals): And Other Essays in the Philosophy of Education. New York: Routledge; 2010

[14] Pekrun R, Goetz T, Titz W, Perry R. Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. Educational Psychologist. 2002;**37**(2):91-105

[15] Damasio A. The Feeling of What Happens: Body, Emotion and the Making of Consciousness. London: Vintage; 1999

[16] Immordino-Yang MH. Emotions, Learning, and the Brain: Exploring the Educational Implications of Affective Neuroscience. New York: W. W. Norton; 2016

[17] Damasio A, Carvalho GB. The nature of feelings: Evolutionary and neurobiological origins. Nature Reviews Neuroscience. 2013;**14**(2):143-152

[18] Piaget J. The Equilibration of Cognitive Structures: The Central Problem of Intellectual Development. Chicago: University of Chicago Press; 1985

[19] Weinberger Y. Empathy in a Virtuous Pedagogy. In: Aloni N, Weintrob L, editors. Beyond Bystanders: Educational Leadership for a Humane Culture in a Globalizing Reality. Rotterdam: Sense Publishers; 2017

[20] Weinberger Y. Introduction. In: Weinberger Y, editor. Education in an Era of Uncertainty [In Hebrew]. Tel Aviv: Resling; 2016

[21] Osberg D, Biesta G. The End/s of Education: Complexity and the Conundrum of the Inclusive Educational Curriculum. International Journal of Inclusive Education. 2010;**14**(6):593-607

[22] Kuhn L. Complexity and educational research: A critical reflection. Educational Philosophy and Theory. 2008;**40**(1):177-189

[23] Han PK, Klein WM, Arora NK. Varieties of uncertainty in health care: A conceptual taxonomy. Medical Decision Making. 2011;**31**(5):828-838

[24] Aloni N. Empowering dialogues in humanistic education. Educational Philosophy and Theory. 2013;**45**(10):1067-1081

[25] Higgins KM, Moule J. 'No More Mr. Nice Guy&: Preservice teachers' conflict with classroom management in a predominantly African-American urban elementary school. Multicultural Perspectives. 2009;**11**(3):132-138

[26] Warren, M. Communities and schools: A new view of urban education reform. Harvard Educational Review. 2005;**75**(2):133-173

[27] Shulman LS. Pedagogies of uncertainty. Liberal Education.2005;**91**(2):18-25

[28] Schon DA. Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions. San Francisco: Josesey-Bass; 1987

[29] Davis B. Complexity and education: Vital simultaneities. Educational Philosophy and Theory. 20008;**40**(1):50-65

[30] Cilliers P. Difference, identity and complexity. In: Cilliers P, editor. Complexity, Difference and Identity. Netherlands: Springer; 2010. p. 3-18

[31] Devoldre I, Davis MH, Verhofstadt LL, Buysse A. Empathy and social support provision in couples: Social support and the need to study the underlying processes. Journal of Psychology. 2010;**144**:259-284

[32] Tolmacz R. Concern and empathy: Two concepts or one? American Journal of Psychoanalysis. 2008;**68**:257-275. DOI: 10.1057/ajp.2008.22

[33] Miller F, Wallis J. Social interaction and the role of empathy information and knowledge management: A literature review. Journal of Education for Library and Information Science. 2011;**52**:122-132

[34] Rogers CR. Empathic: An unappreciated way of being. Counselling Psychologist. 1975;**5**:2-10

[35] Erera PI. Empathy training for helping professionals: Model and evaluation. Social Work Education. 1997;**33**:245-260

[36] Hoffman ML. Empathy and moral development: Implications for caring and justice. New York: Cambridge University Press; 2000

[37] Kerem E, Fishman N. The experience of empathy in everyday relationships: Cognitive and affective elements. Journal of Social and Personal Relationships. 2001;**18**:709-772

[38] Katz RL. Empathy: Its Nature and Uses. New York: Free Press of Glencoe; 1963

[39] Nussbaum MC. Cultivating Humanity: A Classical Defence of Reform in Liberal Education. Cambridge: Harvard University Press; 1997

[40] Weinberger Y, Bakshy I. The complete empathic act. Scholar-Practitioner Quarterly. 2015;**9**(1):109-122

[41] Feuerstein R. Instrumental enrichment: An intervention program for cognitive modifiability. Baltimore: University Park Press; 1980

Chapter 8

Empathy Levels in Medical Students: Do They Really Change Over Time?

Iman Hegazi, Annemarie Hennessy and Ian Wilson

Additional information is available at the end of the chapter

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Abstract

There is conceptual ambiguity in defining empathy, which is further amplified when trying to define clinical empathy. The construct of empathy has been an ongoing debate: sometimes being interpreted as a cognitive attribute, other times as an emotional state of mind. Our preferred definition is moral, emotive, cognitive and behavioural dimensions working in harmony to benefit the patient. Understanding the feelings, attitudes and experiences of a patient is the first step towards a potent and effective interview and, thereby, therapeutic agreement. Thus, clinical empathy may be the most powerful tool for a successful collaboration between the patient and the doctor. This chapter discusses the history of clinical empathy starting with Sir William Osler's definition of 'neutral empathy' where he argues that physicians need to neutralise their emotions so that they can 'see into' and, thereby, be able to 'study' the patient's 'inner life', to Halpern's insightful observations about the power of empathy, which 'lies in its ability to help us cross the divide between clinicians and patients created by their very different circumstances'. This is followed by a summary of the literature deliberating the increasing concern among medical educators and medical professionals regarding the decline in medical students' empathy during medical school, which brings us to our research question: are there significant changes in empathy levels over time in undergraduate medical education? This body of work reports on a cross-sectional study of all medical students enrolled at an Australian medical school, known for its cultural, social and religious diversity, in 2011. The research instrument used consisted of a survey encompassing questions on demographics in addition to the Jefferson Scale of Physician Empathy, Student version (JSPE-S). Empathy levels were compared while controlling for effects of age, gender, marital status, religious belief, ethnicity/cultural background, year of medical training, previous education and level of completion of programmes promoting altruism in an attempt to identify their effect on the levels of empathy. A total of 404 students participated in the study. The scores of the JSPE-S ranged from 34 to 135 with a mean score of 109.07 ± 14.937. This is considered moderate to high when compared to reported scores in previous studies on medical students. Female medical students had significantly higher empathy scores compared to their male counterparts in total and

in individual years. Contrary to the literature, there were no significant differences in empathy scores in relation to the stage of medical training. Findings suggest that there is a gender difference in the levels of empathy, favouring female medical students, and that empathy levels may be preserved in medical school despite prior evidence that a decline is pervasive.

Keywords: empathy, medical students, undergraduate, medical training, medical education

1. Introduction

In medicine, emotional responses to patients are seen as threats to objectivity and doctors strive for detachment to be able to care, reliably, for all patients regardless of their personal feelings. Blumgart [1] recalls Sir William Osler's 'Aequanimitas' in his definition of 'neutral empathy' which states that a physician will do what needs to be done without feeling grief, regret or other difficult emotions. Sir William Osler argues that by neutralising their emotions to the point that they feel nothing in response to patient suffering, physicians can 'see into' and, thereby, be able to 'study' the patient's 'inner life' [2].

Empathy is sometimes confused with 'sympathy'. Sympathy is defined as *experiencing* another's emotions, whereas empathy is *appreciating or imagining* those emotions. Some authors indicate that doctors who sympathise with their patients share their suffering which could lead to emotional fatigue and lack of objectivity [3]. Others imply that the emotional component of empathy is nothing other than sympathy in context [4]. Yet, patients want genuine empathy and most doctors want to provide it.

In order to deal with this conceived conflict between emotions and objectivity, 'professional empathy' was defined on a purely 'cognitive' basis. It was defined as 'the act of correctly acknowledging the emotional state of another without experiencing that state oneself' [5]. This model of 'detached concern' assumes that knowing how the patient feels is no different from knowing that the patient is in a certain emotional state. However, the function of empathy is to recognise what it feels like to experience something, not merely to label emotional states [3].

In the clinical context, Stepien and Baernstein [6] combined the different definitions within the literature to put forward an expanded definition of empathy. This proposed definition includes moral, emotive, cognitive and behavioural dimensions. All four dimensions should work in harmony to benefit the patient. These dimensions were described as follows:

1. Moral: the physician's internal motivation to empathise
2. Emotive: the ability to imagine the patient's emotions and perspectives
3. Cognitive: the intellectual ability to identify and understand patients' emotions and perspectives
4. Behavioural: the ability to convey understanding of those emotions and perspectives back to the patient

1.1. The power of empathy

Empathy skills may be the clinician's most powerful tool. A successful medical interview involves successful collaboration between the patient and the doctor. Thus, understanding the feelings, attitudes and experiences of the patient is a very important step towards a potent and effective interview and, thereby, therapeutic agreement and compliance. Empathy can, therefore, positively affect communication and lead to improved therapeutic outcomes. There is growing evidence that emotionally engaged physicians communicate more effectively with patients, thereby, decreasing patient anxiety and improving patient coping leading to greater therapeutic efficacy and an overall better outcome [7, 8]. On the other hand, lack of empathy increases patient dissatisfaction and the risk of malpractice suits [9].

Halpern [10] sheds light on the importance of empathy in difficult circumstances. She gives two examples of situations going horribly wrong due to lack of empathy and hence lack of communication between the doctor and the patient or the patient's family. In managing difficult patients and in situations where there is a patient-physician conflict, it is recommended taking a conflict resolution approach. To do so, physicians have to first empathise with patients and family members [11–14]. As stated by Egener [15], empathy helps us bridge the divide between clinicians and patients:

'The power of empathy lies in its ability to help us cross, if only for a moment, the divide between clinicians and patients created by their very different circumstances' (*page 10*).

By imagining what the patient is experiencing, and by communicating this insight, empathy can also help us put aside our negative judgement or disagreement with patients and enhances the effectiveness of care and patient satisfaction [15]. However, many patients may not have the skill or ability to reveal their feelings to their providers (**Table 1**). Patients need to be made aware that feelings are a legitimate topic for discussion in a medical interview. They also need to realise that their doctor values their feelings and is interested in the emotions they are experiencing [15].

Halpern [3] illustrates four ways by which physicians can capitalise on their emotional responses to enhance medical care:

1. Empathy involves associative reasoning; empathic listening helps physicians appreciate the personal meanings of patients' words resulting in logical thinking and better diagnoses. 'Patients' words communicate meanings that cannot be summarised on a preformed checklist'.

2. Emotions help in grasping the attention on what is humanly significant. 'Emotional attunement' spontaneously guides and directs the attention to some aspects of the patients' histories over others.

3. Empathy facilitates trust and disclosure, and can be directly therapeutic. Empathy and engaged communication have been linked to decreased patient anxiety and improved outcomes [8, 16].

4. Empathy makes being a physician more meaningful and satisfying. Physicians who respond to their emotions enrich their own experience of doctoring. A study shows that physicians with a communication style that is engaging and psychologically oriented burn out less frequently than others [17].

Doctor	Patient
• Time consuming	• Cultural taboo
• Too draining	• Preference to interpret distress in a biomedical model
• Will lose control of the interview	• Somatisation disorder
• Unable to fix patient's distress	• Desire to meet doctor's expectations
• Not my job	• Worry about being emotionally overwhelmed
• Perceived conflict of interest	• Lack of language for emotions

From: Egener [15].

Table 1. Barriers to discussing emotions.

Despite all this, many physicians still do not see patient's emotional needs as a core aspect of illness and care. The concept that the physician does not need to understand the affective dimension of the patient, and hence does not need to have empathy, stems from the 'overarching norm of detachment' within medicine [18]. The 'sceptic' may even ask if physicians can 'just behave empathically' without the emotional response. Halpern answers this question by emphasising that patients sense whether physicians are 'emotionally attuned' and that patients trust 'emotionally attuned' physicians and adhere better to their treatment. She also highlights that 'empathic attunement' guides physicians about when to ask questions and when to stay silent, which leads to better communication and results in patient's disclosing important information [3].

1.2. The role of medical education

Empathy is an indispensable skill in medicine and is an integral part of 'professionalism'. It is fundamental for medical schools to educate students on the importance of empathy. The Australian Medical Council (AMC) emphasises that medical course outcomes should be consistent with the AMC's goals for medical education and that it should incorporate knowledge, skills and professional attitudes. The AMC highlights that professional attitudes are at least as important as knowledge and skills:

'The combination of knowledge, skills and attitudes that is considered an essential foundation for further prevocational and vocational training for medical doctors is very complex. These attributes cannot be defined simply as lists of factual knowledge, practical skills or competencies, as many are related to abstract qualities. Knowledge and practical skills are important, but understanding, problem-solving ability and appropriate attitudes relevant to caring for individuals who are suffering are at least of equal importance' [19].

Despite rigorous research, there is still increasing concern among medical educators and medical professionals regarding the decline in medical students' empathy during medical education [20–24]. Some studies suggest that the decline is mostly pronounced in the later years while others suggest that it occurs in the early years of medical education [25, 26]. Varying designs, employing varying instruments, have been used. Cross-sectional and longitudinal studies were applied. Instruments utilised included the Student Version of the Jefferson Scale of Physician Empathy (JSPE-S) [26], Hogan's Empathy Scale (HES) [27], the Balanced Emotional Empathy Scale (BEES) [23] and the Interpersonal Reactivity Index (IRI) developed by Davis [28]. The general consensus was that empathy declines during medical education. Only recently have studies started questioning whether such a decline is of significant magnitude or 'greatly exaggerated' [29].

While many studies have shown decreasing empathic behaviour of medical students, few have considered the impact of the curriculum and very few have offered solutions, particularly feasible solutions [30–34].

In response, we were determined to further explore this alleged phenomenon by inspecting empathy levels across the entirety of students enrolled at an undergraduate medical school. We controlled for effects of age, gender, marital status, religious belief, cultural background, cohort, previous education and specific personal and professional development programmes (PDP), in an attempt to identify their effect on the levels of empathy.

2. Aim of study

The aim of this study was to compare levels of empathy in undergraduate medical students across the different years of the medical programme at University of Western Sydney (UWS), taking into consideration that all medical students experienced the same rigorous professionalism-centred selection process and, thereby, should have comparable behavioural attributes. Also, to examine differences in empathy in relation to gender, year of study, cultural and religious backgrounds, previous education and certain programmes within the curriculum, the following questions were addressed:

- Are there significant changes over time in undergraduate medical education?
- Does the exposure to clinical practice affect the level of empathy in undergraduate medical students?
- Is there a difference between the levels of empathy in male and female medical students?
- Do cultural and religious backgrounds influence levels of empathy in medical students?
- Does previous education impact levels of empathy in medical students?
- Is there a difference between the levels of empathy in students who have completed Ethics and community-based programmes and those who have not?

3. Methods

The study described is a cross-sectional study involving medical students enrolled at an undergraduate, 5-year Australian medical programme. The study was approved by the University's Human Research Ethics Committee (HREC) and the Local Health District (LHD) HREC.

Participation in the study was voluntary and anonymous. All students enrolled in the first through the fifth year medical school, during the academic year of 2011, were eligible to participate in the study. The curriculum at the UWS School of Medicine consists of a 5-year undergraduate programme entailing 2 years of pre-clinical study, with limited patient contact, followed by 3 years of clinical rotations. The instrument used was distributed to medical students in paper format. Students were asked to return the completed surveys to the principle investigator.

The research instrument consisted of a survey encompassing an empathy scale in conjunction with questions on demographics, stage of medical education, previous degree(s) and level of completion of particular programmes within the curriculum that aim at promoting altruism (namely Community Medicine and Ethics). The empathy scale employed was the Jefferson Scale of Physician Empathy, Student version. The JSPE-S is a 20-item psychometrically validated instrument where respondents are required to indicate their level of agreement to each item on a seven-point Likert Scale (i.e. 1 = strongly disagree, 7 = strongly agree). The JSPE-S total score ranges from 20 to 140 with higher values indicating a higher degree of empathy.

Students who failed to return the survey were considered as non-responders. Also, surveys with more than two missing responses to the items of the scale were discarded. For those with one or two missing responses, the mean score to their existing responses was used to replace the missing ones.

A few tools exist for measuring empathy and some of them have been used in medical education research. One example is the Interpersonal Reactivity Index developed by Davis [28]. It is based on four components representing the cognitive and emotional domains of empathy. These components are perspective taking, empathic concern, fantasy and personal distress. Another research tool is the Empathy Scale developed by Hogan [35] and adopted from the California Psychological Inventory (CPI), the Minnesota Multiphasic Personality Inventory (MMPI) and test forms used at the Institute of Personality Assessment and Research (IPAR). Other empathy measuring tools, such as the Empathy Construct Rating Scale [36], the empathy subtest of the Relationship Inventory [37] and the Empathy Test, [38] also exist but were mostly used in nursing research.

The JSPE-S was chosen because it was designed specifically to investigate the development of physician empathy, as well as its variation and its correlates in different stages of medical education and among different groups of medical students and physicians [39]. It has been tested for validity (face, content, predictive, concurrent and construct) and reliability and has been modified to improve clarity. Another advantage to the JSPE-S is the balance between positively and negatively worded items (10 each). The use of positively and negatively worded items is a method usually used in psychology tests to decrease the confounding 'acquiescent response style', for example, a tendency to constantly agree or disagree with statements [39, 40].

Socio-demographic characteristics included age, gender, marital status, religion, cultural background and year of education. Missing values were common in this section, especially in relation to age, religion and culture and could not be recorded. We predicted missing values for religion and culture for which we made it explicit that this section was completely voluntary, yet it was surprising to have numerous missing values in relation to age. Reasons may be being the first item in the survey, following a paragraph of instructions and the location of the item on the page.

As a result of the unavailability of complete data, the number of observations varied for the different variables (**Table 2**).

3.1. Statistical analyses

All computations were carried out using the IBM SPSS Statistical Software. Non-parametric tests were used in all analyses due to the absence of normality in the distribution of empathy levels amongst medical students participating in the study. Tests included the Kruskal-Wallis and Mann-Whitney tests.

Age	Gender	Marital	Ethnicity	Cohort	CM*	Ethics	Prior degree	Religion	
Valid	193	407	406	277	407	215	106	34	323
Missing	214	0	1	130	0	192	301	373	84

*Community Medicine

Table 2. Valid and missing numbers in demographics and characteristics of UWS medical school students.

4. Results

The overall response rate comprised 69.78% of the total number of students (n = 579) at the UWS School of Medicine, at the time the research was undertaken. The response rates for years 1–5 were 74.38, 73.19, 82.3, 30.77 and 86.0%, respectively. The response rate for year 4 students was comparatively lower because the mode of delivery of the test was different to the other cohorts. In years 1–3 and 5, students had been allocated a session to complete and return the surveys, whereas one could not be allocated for fourth year students. Naturally, the response rate was considerably smaller. This may indicate that the results of this group may not be an accurate representation of their entire cohort.

4.1. Socio-demographic characteristics

4.1.1. Age, gender and marital status

A total number of 407 students participated in this study (**Table 3**). Three students had left out more than two items and, hence, their surveys were discarded. Of the remaining 404 respondents, there were 229 (56.7%) women and 175 (43.3%) men. The age of the students ranged from 17 to 44 years with a mean of 20.87 ± 3.08 years. Student distribution included

Age	**Range:** 17–44 years
	Mean ± SD: 20.87 ± 3.08 years
Gender	**Females:** 229 (56.7%)
	Males: 175 (43.3%)
Year of study	**Year 1:** 90 (22.1%)
	Year 2: 101 (25.1%)
	Year 3: 107 (26.8%)
	Year 4: 32 (7.9%)
	Year 5: 74 (18.2%)
Marital status	**Unmarried:** 365 (90.3%)
	Has partner: 22 (5.4%)
	Married: 9 (2.2%)
	Married parent: 5 (1.2%)
	Single parent: 2 (0.5%)
Ethnicity and culture	**South-East Asian:** 83 (20.5%)
	Indian: 79 (19.6%)
	Northern European: 55 (13.6%)
	Sub-continental European: 31 (7.7%)
	Middle-Eastern: 18 (4.5%)
	Indigenous Australian: 5 (1.2%)
	Mixed: 4 (1.0%)
	African: 1 (0.2%)
Religious belief	**Christian/Muslim/Jewish:** 167 (41.3%)
	Atheist/Agnostic: 85 (21.0%)
	Hindu/Buddhist: 69 (17.1%)

Table 3. Demographics of student population showing mean and range of age, and distribution of gender, year of medical training, marital status, ethnicity and religious belief.

90 (22.1%), 101 (25.1%), 107 (26.8%), 32 (7.9%) and 74 (18.2%) students for first, second, third, fourth and fifth years, respectively. Most of the students (90.3%) were unmarried, 22 (5.4%) had a partner, while 9 students were married and 7 had children.

4.1.2. Ethnicity/culture and religion

The nature of the student population at the UWS is fairly diverse. This diversity was reflected in the distribution of ethnicity of participating students. Students with a South-East Asian and Sub-continental Asian (Indian) backgrounds had the highest frequencies and constituted almost half of the population (20.% and 19.6%, respectively); this was followed by students from a European background (13.6%). The diversity of religious belief was also a prominent feature of this student population. For simplicity, this entity was split into three groups [41]. The highest percentage was that of the 'Abrahamic religions' (41.3%) followed by the Atheist/Agnostic (21%), then Hinduism/Buddhism (17.1%) (**Table 3**).

4.1.3. Past education and completion of Community Medicine and Ethics programmes

Of the total population, only 32 students had completed a tertiary degree prior to starting their medical degree. Twenty-one students had completed a science degree while 11

had completed a degree other than science (Arts, Business, Commerce, Education, Law and Design).

Not all responded to items related to Community Medicine and Ethics. Numbers of response rates were 213 and 106, respectively. One hundred and thirty-nine (34.4%) had completed Community Medicine, while ninety-three (23%) had completed Ethics.

4.2. Descriptive characteristics of the scale

Reliability testing showed a Cronbach's Alpha of .88 for the JSPE-S, indicating internal consistency of the scale items. The minimum, maximum, mean, standard deviation, skewness and kurtosis of the JSPE are reported in **Table 4**. The scores for the entire sample ranged from 34 to 135 with a mean score of 109.07 ± 14.937.

The skewness and kurtosis were −1.964 and 5.926, respectively. The score distribution for the entire sample showed non-parametric distribution with a skewness towards the upper end of the scale (**Figure 1**).

4.3. Group comparisons of the Jefferson Scale of Physician Empathy Scores

There were no significant differences in the empathy scores when comparing the student populations with regard to age, marital status, ethnicity/culture, religious belief, year of study and prior education/degree. Also, there were no associations recorded between the empathy scores and level of completion of Community Medicine and Ethics courses (**Table 5**).

When investigating at the differences by gender, female medical students were found to have significantly higher empathy scores than male medical students in total (111 vs. 106, $p < 0.001$) and in all 5 years of medical training (**Figure 2**). Female students not only scored higher in the total JSPE-S score but also scored in 11 out of the 20 individual items of the scale ($p < 0.05$) (**Table 6**).

Items in which female students scored significantly higher were as follows:

- 'I do not enjoy reading non-medical literature or the art' (reverse scoring)
- 'I believe that emotion has no place in the treatment of medical illness' (reverse scoring)

	N	Minimum	Maximum	Mean	Std. deviation	Skewness		Kurtosis	
							Std. error		Std. error
JSPE score	404	34	135	109.07	14.937	−1.964	0.121	5.926	0.242

Table 4. Descriptive statistics of Jefferson Scale of Physician Empathy scores, Student version (JSPE-S).

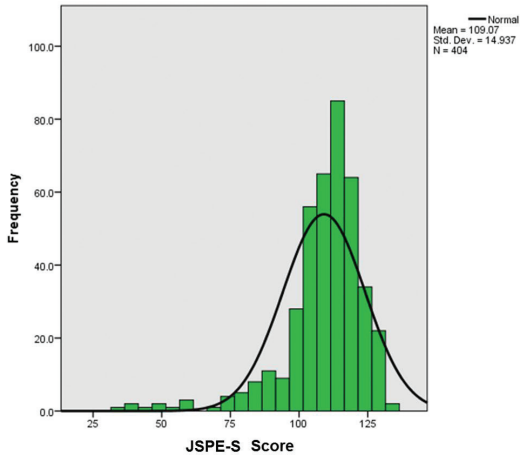

Figure 1. Histogram showing a non-parametric distribution of the Jefferson Scale of Physician Empathy scores among the student population.

	Age	Marital status	Culture/ Ethnicity	Religion	Year	Previous degree	CM*	Ethics
Chi-Square	57.381	75.368	62.615	50.751	76.371	1.7153	56.229	34.816
Asymp. Sig.	.387	0.157	0.253	0.739	0.138	0.424	0.391	0.741

Kruskal-Wallis test.
Grouping variable: JSPE-S score.
Significance at $p < 0.05$.
*Community Medicine

Table 5. Empathy scores in relation to age, marital status, ethnicity, religion, year, prior degree and level of completion of Ethics and Community Medicine.

- 'Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members' (reverse scoring)
- 'I believe that empathy is an important therapeutic factor in medical treatment'
- 'Empathy is therapeutic skill without which the physician's success is limited'

There were no associations noted between the levels of empathy and marital status, previous tertiary education, ethnicity/cultural background or religious belief.

Although insignificant, it was interesting to find that single parents (2 students), students with a prior tertiary degree other than science (11 students), Indigenous Australians (5 students) and Atheists/Agnostics scored the highest means in the JSPE-S. Females outscored their male counterparts in all variables except for culture where male indigenous students scored higher means than female indigenous students (130 vs. 120).

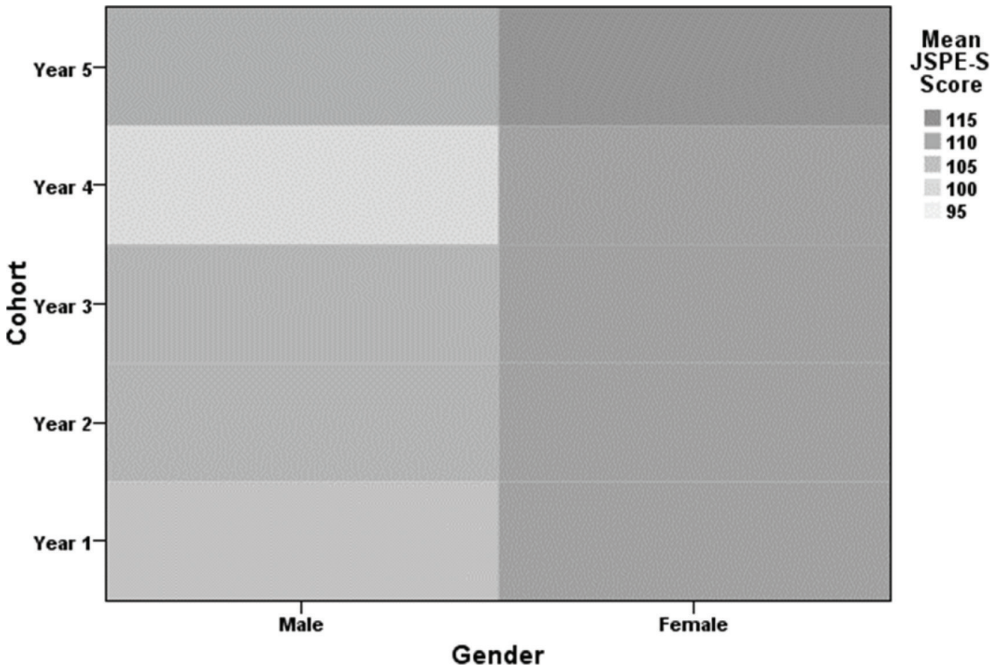

Figure 2. Heat map showing the differences between means of the Jefferson Scale of Physician Empathy in relation to gender and year of undergraduate medical training.

4.3.1. Year, Community Medicine and Ethics

Surprisingly, there were no significant differences in the total empathy scores in relation to the year of medical training, nor were there significant differences between students who had completed Community Medicine and Ethics, and those who had not. Although there were no significant differences recorded, it is worthwhile mentioning that the highest means were scored by year 5 students and those who had completed Community Medicine and Ethics (see **Figure 3**).

When investigating at the different items of the scale in relation to the year of medical training, only four items showed a significant difference across cohorts. In order of significance, these were the following items:

- 'Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members' ($p = 0.005$) (reverse scoring)
- 'Because people are different, it is difficult to see things from patients' perspectives' ($p = 0.027$) (reverse scoring)
- 'Physicians should try to think like their patients in order to render better care' ($p = 0.03$)
- 'Attention to patients' emotions is not important in history taking' ($p = 0.039$) (reverse scoring)

Item	Mean JSPE score in medical students		Asymp. Sig. (two-tailed)
	Male students	Female students	
Physicians' understanding of their patients' feelings and the feelings of their patients' families does not influence medical or surgical treatment	5.41	5.61	0.026*
It is difficult for a physician to view things from patients' perspectives	4.61	4.65	0.85
Because people are different, it is difficult to see things from patients' perspectives	4.30	4.75	0.004**
Attention to patients' emotions is not important in history taking	6.05	6.16	0.048*
Attentiveness to patients' personal experiences does not influence treatment outcomes	5.47	5.92	0.001**
Patients' illnesses can be cured only by medical or surgical treatment; therefore, physicians' emotional ties with their patients do not have a significant influence in medical or surgical treatment	5.75	5.97	0.14
Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints	5.69	5.94	0.014*
I believe that emotion has no place in the treatment of medical illness	5.99	6.37	0.000**
Physicians should try to think like their patients in order to render better care	2.99	3.03	0.767
Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members	3.09	3.70	0.000**
I do not enjoy reading non-medical literature or the arts	5.58	6.23	0.000**

Item	Mean JSPE score in medical students		Asymp. Sig. (two-tailed)
	Male students	Female students	
Patients feel better when their physicians understand their feelings	6.22	6.39	0.138
Understanding body language is as important as verbal communication in doctor–patient relationships	5.90	6.11	0.065
A physician's sense of humour contributes to a better clinical outcome	5.07	4.84	0.055
Physicians should try to stand in their patients' shoes when providing care to them	5.59	5.81	0.052
Patients value a physician's understanding of their feelings which is therapeutic in its own right	5.71	5.87	0.437
Physicians should try to understand what is going on in their patients' minds by paying attention to their non-verbal cues and body language	5.79	5.93	0.184
Empathy is a therapeutic skill without which the physician's success is limited	5.29	5.78	0.000**
Physicians' understanding of the emotional status of their patients, as well as that of their families is one important component of the physician-patient relationship	5.84	6.10	0.025*
I believe that empathy is an important therapeutic factor in medical treatment	5.83	6.20	0.000**
JSE total Score	106.15	111.30	0.000**

Mann-Whitney test.
Grouping variable: gender.
*Significant at $p < 0.05$.
**Significant at $p < 0.01$.

Table 6. Comparison of the different components of the Jefferson Scale of Physician Empathy, Student version (JSPE-S) in relation to gender.

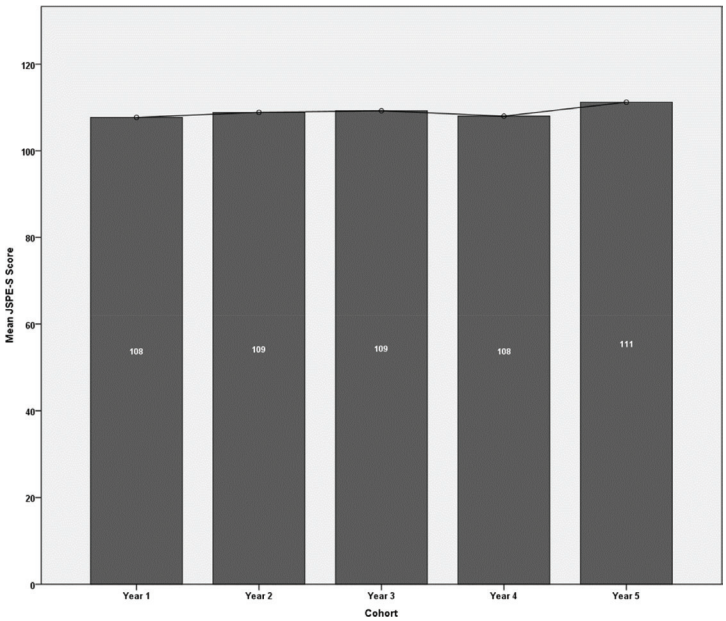

Figure 3. Bar graph showing the mean scores of the Jefferson Scale of Physician Empathy in relation to year of undergraduate medical training.

Despite having lower means, the scores of the above items seemed to significantly increase with an increase in the stage of medical training.

Furthermore, female students showed an increase in the score of items measuring *emotional empathy* as they progressed in their medical training:

- 'Attention to patients' emotions is not important in history taking' (reverse scoring)
- 'Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members' (reverse scoring)

5. Discussion

The capacity to understand what a patient may be feeling or experiencing is a major component of consulting skills that are required of medical students and practitioners. Acquisition of a body of knowledge and the ability to apply this knowledge in the diagnosis and treatment of patients is important, but an equally important skill is the ability to relate effectively to patients. This is essential to ensure the attainment of a full history and subsequent compliance. Students' ability to successfully communicate in interviews with patients requires another set of skills. This includes the ability to understand patients' feelings and experiences (i.e. empathy), and the ability to introspect or to understand one's own feelings and emotional responses in reaction to patients' feelings and behaviours (i.e. self-reflection) [42]. The general

view is that empathy declines during medical education [20–24]. To investigate this alleged phenomenon in further detail, we resorted to the current study [43].

5.1. The JSPE scale

Although the JSPE is a self-report measure, it has been shown to correlate with observer ratings of clinical competence as well as with patients' perceptions of physician empathy [44, 45]. The reliability coefficient (Cronbach's Alpha) for the JSPE-S, an indicator for the internal consistency aspect of reliability, was found to be 0.88 among UWS medical students. This is similar to the findings by Hojat et al. [46], in which Cronbach's Alpha was 0.87 for residents and 0.89 for medical students, but is higher than that found in an Italian and a Korean study (r = 0.85 and 0.84, respectively) [47, 48].

The overall mean score for our sample (109.07 ± 14.937) is moderate to high when compared to reported scores in previous studies on medical students. It is lower than that recorded in the USA and Mexico but higher than that reported by Iran and Japan (118.0 ± 9.2, 110.4 ± 14.1, 105 ± 12.9, 104.3 ± 13.1, respectively) [44, 49–51]. This may be attributed to interpretation issues, cultural differences, students' selection, differences in pedagogical methods and role modelling. However, this area requires further investigation.

The highest score was observed for the item: 'Patients feel better when their physicians understand their feelings'. This is similar to the findings in the Brazilian study by Paro et al., which was conducted on 299 fifth and sixth year medical students [52]. It is a good indication of how students perceive the importance of patients' feelings—a marker for compassionate care [53].

5.2. Empathy and age

No significant associations were found between age and scores of the JSPE-S, although the highest scores were achieved by students above the age of 25. While there was a wide age range in the sample (from 17 to 44), there were only 6 students above the age of 25. This small number of older students in the group makes these results not particularly informative. Nevertheless, the lack of significant association between age and empathy is in concordance with the findings of Austin et al. (2007) [25].

5.3. Empathy and gender

According to our findings, female medical students scored significantly higher on the JSPE-S than male medical students. These gender differences occurred at all stages of the undergraduate medical programme (i.e. years 1–5). Differences in mean scores between female and male students ranged from 4 points (in years 2 and 3) to 12 (in year 4). While a few studies failed to demonstrate higher empathy scores among female students, reportedly due to sampling bias [47, 48, 51, 52], our findings are consistent with the results of a number of studies which suggest that gender differences, in favour of women, exist in relation to empathy [25, 39, 46, 50, 53–57].

Significant differences were found not only in the total JSPE score but also in 11 out of the 20 individual components of the scale. The largest gender difference was observed on the item

related to reading interest: 'I do not enjoy reading non-medical literature or the arts' (where, $Z = -4.871$, $p = 0.000$). This coincides with the findings of Kataoka et al. [50].

Empathy encompasses cognitive and affective/emotional dimensions. The cognitive dimension refers to 'the ability to *understand* the patient's inner experiences and perspective, and a capability to communicate this understanding' [39], whereas the affective dimension refers to the ability to *imagine* the patient's emotions and perspectives [6]. Significant gender differences, in favour of women, were particularly observed in JSPE items which measured the affective component of empathy (7 out of 11). On the other hand, items which showed no significant differences between genders were predominantly cognitive in nature, that is, items which measured the cognitive component of empathy (6 out of 9).

Several explanations have been offered for gender differences in empathy, yet, none have been conclusive. It has been suggested that women are more receptive to emotional signals than men, which can lead to better understanding and, therefore, a better empathic relationship [54]. Recent research by Rueckert and Naybar [58] showed a correlation between right hemisphere activation on the face task and empathy in women only ($p = 0.037$), suggesting a possible neural basis for gender differences in empathy. Mestre et al. [59] followed the empathy levels in male and female adolescents, aged 13–16 years, in a longitudinal study. They concluded that females had a greater empathic response than males of the same age and that the differences grow with age. Significant differences existed in terms of emotional empathy as well as their cognitive capacity to understand experiences and emotions (cognitive empathy).

Current research also focuses on identifying interactions between personal and contextual factors, in particular parenting styles [60, 61]. Parenting styles characterised by affection and emotional support seem to enhance pro-social development and empathy. On the other hand, rigid and hostile parenting facilitates aggression. Carlo et al. [62] analysed parenting styles in relation to gender and reported that girls seem more receptive to affection and support in family relationships.

5.4. Empathy and year of medical training

The results of this study showed no significant difference in empathy scores in relation to the stage of medical training. This finding is contrary to many previous studies which observed a decline in the mean empathy scores, during education, in a variety of health disciplines [21, 26, 63, 64]. Although insignificant, it seems that students may have even developed *more* empathy as they progressed in their training. A cross-sectional study, by Kataoka et al. [65], showed similar findings in Japanese medical students. It showed that the mean empathy scores significantly increased from 98.5 in the first year to 107.8 in the final year of medical school. In our research, the mean empathy scores did increase from 108 to 111, but this increase was insignificant. Another study reported that affective empathy declined in male students, while cognitive empathy was unchanged during medical education [66]. Our research shows that empathy, both affective and cognitive, did not change among male students in relation to medical education, whereas affective empathy increased in female students. It is not clear whether this is an effect of the medical education process or merely a natural development with age.

An interesting observation is that although the score for item 7, that is, 'Attention to patients' emotions is not important in history taking' significantly increases in female students with medical education, the mean score seems to drop after year 3, that is, during the clinical component of the course. Quince et al. [66], using the Interpersonal Reactivity Index, showed a similar finding but in male students.

5.5. Empathy and personal and professional development programmes

The number of students who responded to the items of *Community Medicine* and *Ethics* was too small to be reflective of the total population. Also, there were no significant differences between the scores of those who completed Community Medicine and Ethics and those who had not. Nevertheless, the highest means were recorded by students who had completed Community Medicine and Ethics. These findings indicate that we cannot disregard the effect of personal and professional development programmes on the levels of students' empathy and that further studies, representing the total population and compared to a control group, need to be implemented. Many studies have reported a quantitative increase in student empathy following PPD interventions such as communication skill and interpersonal skill workshops, literature and medicine, patient shadowing and spirituality and wellness courses [42, 67–70]. Such studies suggest that focused educational interventions may be successful at nurturing undergraduate medical students' empathy.

5.6. Empathy and religious beliefs

Despite the absence of a significant difference in empathy scores across different religious beliefs, female atheist/agnostic students seemed to score the highest means. It is not clear whether this difference is related to gender or religiosity. Unfortunately, there is not much on the topic in the literature. Psychologists typically ignore religion, and cognitive scientists have mostly found topics like religion to be an 'embarrassment' [71]. As most people characterise themselves as belonging to a religion—typically Christianity and Islam—about half of the 6.9 billion people on Earth see themselves as falling into one of these two faiths; there has been a recent change in this trend and the topic of religion is deliberated in the literature [71].

A recent study by Saslow et al. [72] reported that compassion, which is an important component of empathy, was related to religious identity. A greater tendency to feel compassion, defined by Goetz et al. [73] as the 'feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help', was observed in the more religious individuals. Yet, greater compassion was related to higher levels of pro-social behaviour among participants who were less religious. Bloom [71] concludes that although there is little evidence of a moral effect of specifically religious beliefs, religion has powerfully good moral effects and powerfully bad moral effects, but these are due to aspects of religion that are shared by other human practices.

5.7. Empathy and ethnicity/culture

Empathy scores did not significantly differ in relation to cultural background of medical students. The highest scores were recorded by the Indigenous Australian students but the

sample size, being only five students, was too small to be statistically valid. There seems to be a general agreement, in the literature, regarding the universality of compassion. However, research shows that the way it is portrayed almost certainly varies across cultures. It is suggested that the capacity to feel compassion may function like a language acquisition tendency similar to how languages differ across cultures, and how they vary according to culturally specific concepts, values, norms and practices [74].

Tsai [75] also reports that cultures vary in their outward display of emotions and that specific lexicon and vocabulary on displaying emotion will depend on the values of that culture.

5.8. Empathy and marital status

The differences between empathy scores in relation to marital status were, again, insignificant. Yet, single mothers showed the highest levels of empathy. Although the sample is too small to be statistically considered, this finding could be potentially explained by integrating Carter's theory with the study of Hodges et al. [76, 77]. Carter [76] suggested that the hormone 'oxytocin' is important for intimate attachments such as marital relationships and interactions with offspring. This theory was backed up by Tops et al. [78] who found plasma oxytocin levels to be strongly associated with attachment defined as the tendency to express and share emotions and feelings with partners or close friends. Hodges et al. [77] examined how having had a similar experience affected three facets of empathy: empathic concern, empathic accuracy and perceived empathy. They concluded that experienced mothers expressed greater empathic concern towards their newborn compared to new mothers. This does not, however, explain why empathy was found to be higher in *single* mothers.

5.9. Empathy and previous education

Although the sample was very much biased, in favour of students without a tertiary degree, students who had a previous arts-related or non-science tertiary degrees showed higher levels of empathy (especially females). This agrees with all previous research suggesting that art, literature, poetry and narrative-based medicine enhance empathy [79–82]. An interesting article by Pauranik [83] titled 'Medical humanities: a resident doctor's perspective' explains how overwork, sleep deprivation and the bombardment of competitive examinations with the pressure of expectations all combine to destroy the dreams that doctors have when they start medical school. She suggests that by integrating medical humanities into the curriculum and sensitising young minds, using the arts, literature, history and lessons on social issues, we may bring about a paradigm shift in that trend.

Possible limitations to this study include the following:

- Findings are based on a cross-sectional design. The possibility of cohort effects cannot be dismissed.
- The survey was conducted at a single medical school. This limits the generalisation of our findings, even though the aim was to identify effective strategies to enhance empathy in undergraduate medical education.

- We utilised a self-reporting scale of empathy. Although the scale was described to be well correlated with observer ratings, there is a possibility that self-reports may have been subjected to biases and discrepancies between self-report and actual behaviour may exist.
- Sampling bias regarding age, Community Medicine and Ethics. The low rate of respondents reporting their age and level of completion of Community Medicine and Ethics programmes may have limited our conclusion regarding the effect of age and personal and professional development programmes on the levels of empathy.
- Lack of clinical exposure of first and second year medical students may have impacted on how the JSPE was interpreted and completed.

6. Conclusion

Empathy is a key concept in the doctor-patient relationship. Empathic engagement is important for the doctor, in terms of patient trust and hence obtaining a thorough history, and for the physical, mental and social well-being of the patient. Our findings suggest that there is a gender difference in the levels of empathy, favouring female medical students. They also suggest that empathy may be preserved in medical school despite prior evidence that a decline is inevitable. Any changes observed in either affective or cognitive empathy, amongst UWS medical students, were small and of limited practical significance. This may be due to careful student selection and/or personal and professional development courses, within the programme, which may have attenuated the decline.

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References

[1] Blumgart HL. Caring for the patient. New England Journal of Medicine. 1964;**270**:449-456

[2] Osler W. Aequanimitas: With Other Addresses to Medical Students, Nurses and Practitioners of Medicine. Philadelphia: P. Blakiston's Son & Co.; 1920. p. 475

[3] Halpern J. What is clinical empathy? Journal of General Internal Medicine. 2003;**18**(8): 670-674

[4] Lancaster T, Hart R, Gardner S. Literature and medicine: evaluating a special study module using the nominal group technique. Medical Education. 2002;**36**(11):1071-1076

[5] Markakis K, et al. Teaching empathy: It can be done. In: Annual Meeting of the Society of General Internal Medicine. San Francisco, CA; 1999

[6] Stepien KA, Baernstein A. Educating for empathy. A review. Journal of General Internal Medicine. 2006;**21**(5):524-530

[7] Beck RS, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. Journal of the American Board of Family Practice. 2002;**15**(1):25-38

[8] Rietveld S, Prins PJ. The relationship between negative emotions and acute subjective and objective symptoms of childhood asthma. Psychology Medicine. 1998;**28**(2):407-415

[9] Beckman HB, Frankel RM. Training practitioners to communicate effectively in cancer care: it is the relationship that counts. Patient Education and Counseling. 2003;**50**(1):85-89

[10] Halpern J. Empathy and patient-physician conflicts. Journal of General Internal Medicine. 2007;**22**(5):696-700

[11] Back AL, Arnold RM. Dealing with conflict in caring for the seriously ill: "it was just out of the question". Journal of American Medical Association. 2005;**293**(11):1374-1381

[12] Elder N, Ricer R, Tobias B. How respected family physicians manage difficult patient encounters. Journal of the American Board of Family Medicine. 2006;**19**(6):533-541

[13] Fetters MD, Churchill L, Danis M. Conflict resolution at the end of life. Critical Care Medicine. 2001;**29**(5):921-925

[14] Stivers T. Parent resistance to physicians' treatment recommendations: One resource for initiating a negotiation of the treatment decision. Health and Community. 2005;**18**(1): 41-74

[15] Egener B. Empathy, in Behavioural Medicine in Primary Care: A Practical Guide. In: Feldman MD, Christensen JF, editors. San Francisco: McGraw-Hill Companies Inc.; 2003

[16] Butow PN, et al. The dynamics of change: Cancer patients' preferences for information, involvement and support. Annals of Oncology. 1997;**8**(9):857-863

[17] Roter DL, et al. Communication patterns of primary care physicians. Journal of American Medical Association. 1997;**277**(4):350-356

[18] Bouma HK. Is empathy necessary for the practice of "good" medicine. The Open Ethics Journal. 2008;**2**(1):1-12

[19] AMC. Assessment and Accreditation of Medical Schools: Standards and Procedures. Accreditation 2011 04/10/2011 [cited 2012 06/08]. Available from: http://www.medicalboard.gov.au/Accreditation.aspx

[20] Bellini LM, Baime M, Shea JA. Variation of mood and empathy during internship. Journal of American Medical Association. 2002;**287**(23):3143-3146

[21] Chen D, et al. A cross-sectional measurement of medical student empathy. Journal of General Internal Medicine. 2007;**22**(10):1434-1438

[22] Hojat M, et al. An empirical study of decline in empathy in medical school. Medical Education. 2004;**38**(9):934-941

[23] Newton BW, et al. Is there hardening of the heart during medical school? Academic Medicine. 2008;**83**(3):244-249. DOI: 10.1097/ACM.0b013e3181637837

[24] Sherman JJ, Cramer A. Measurement of changes in empathy during dental school. Journal of Dental Education. 2005;**69**(3):338-345

[25] Austin EJ, et al. A preliminary study of empathy, emotional intelligence and examination performance in MBChB students. Medical Education. 2007;**41**(7):684-689

[26] Hojat M, et al. The devil is in the third year: A longitudinal study of erosion of empathy in medical school. Academic Medicine. 2009;**84**(9):1182-1191

[27] Diseker RA, Michielutte R. An analysis of empathy in medical students before and following clinical experience. Academic Medicine. 1981;**56**(12):1004-1010

[28] Davis MH. Measuring individual differences in empathy: Evidence for a multidimensional approach. Journal of Personality and Social Psychology. 1983;**44**(1):113-126

[29] Colliver JA, et al. Reports of the decline of empathy during medical education are greatly exaggerated: A reexamination of the research. Academic Medicine. 2010;**85**(4):588-593

[30] Feudtner C, Christakis DA, Christakis NA. Do clinical clerks suffer ethical erosion? Students' perceptions of their ethical environment and personal development. Academic Medicine. 1994;**69**(8):670-679

[31] Krupat E, et al. Can changes in the principal clinical year prevent the erosion of students' patient-centered beliefs? Academic Medicine. 2009;**84**(5):582-586

[32] Phillips CB. Student portfolios and the hidden curriculum on gender: Mapping exclusion. Medical Education. 2009;**43**(9):847-853

[33] Wear D, Skillicorn J. Hidden in plain sight: The formal, informal, and hidden curricula of a psychiatry clerkship. Academic Medicine. 2009;**84**(4):451-458

[34] Wear S. Challenging the hidden curriculum. Journal of General Internal Medicine. 2008;**23**(5):652-653

[35] Hogan R. Development of an empathy scale. Journal of Consulting and Clinical Psychology. 1969;**33**(3):307-316

[36] La Monica EL. Construct validity of an empathy instrument. Research in Nursing & Health. 1981;**4**(4):389-400

[37] Barrett-Lennard GT. The phases and focus of empathy. British Journal of Medical Psychology. 1993;**66(Pt 1)**:3-14

[38] Layton JM. The use of modeling to teach empathy to nursing students. Research in Nursing & Health. 1979;**2**(4):163-176

[39] Hojat M, et al. Physician empathy in medical education and practice: Experience with the Jefferson Scale of Physician Empathy. Seminars in Integrative Medicine. 2003;**1**(1):25-41

[40] Ray JJ. Is the acquiescent response style problem not so mythical after all? Some results from a successful balanced F scale. Journal of Personality Assessment. 1979;**43**(6):638-43

[41] Philosophy of Religion. Encyclopaedia Britannica Online 2015 [cited 2015 02 February]; Available from: http://www.britannica.com/EBchecked/topic/497132/philosophy-of-religion

[42] Evans BJ, et al. Psychological tests to measure the effects of medical education on students' interpersonal skills. Medical Education. 1989;**23**(6):492-497

[43] Hegazi I, Wilson I. Maintaining empathy in medical school: It is possible. Medical Teaching. 2013;**35**(12):1002-1008

[44] Glaser KM, et al. Relationships between scores on the Jefferson Scale of Physician Empathy, patient perceptions of physician empathy, and humanistic approaches to patient care: A validity study. Medical Science Monitor. 2007;**13**(7):CR291–CR294

[45] Hojat M, et al. Empathy scores in medical school and ratings of empathic behavior in residency training 3 years later. Journal of Social Psychology. 2005;**145**(6):663-672

[46] Hojat M, et al. The Jefferson Scale of Physician Empathy: Development and preliminary psychometric data. Educational and Psychological Measurement. 2001;**61**(2):349-365

[47] Di Lillo M, et al. The Jefferson Scale of Physician Empathy: Preliminary psychometrics and group comparisons in Italian physicians. Academic Medicine. 2009;**84**(9):1198-1202

[48] Roh MS, et al. Evaluation of empathy among Korean medical students: A cross-sectional study using the Korean Version of the Jefferson Scale of Physician Empathy. Teaching and Learning in Medicine. **22**(3):167-171

[49] Alcorta-Garza A, et al. Validity and reliability of the Jefferson Scale of Physician Empathy in Mexican medial students. Validación de la Escala de Empatía Médica de Jefferson en estudiantes de medicina Mexicanos. 2005;**28**(5):57-63

[50] Kataoka HU, et al. Measurement of empathy among Japanese medical students: Psychometrics and score differences by gender and level of medical education. Academic Medicine. 2009;**84**(9):1192-1197

[51] Rahimi-Madiseh M, et al. Empathy in Iranian medical students: A preliminary psychometric analysis and differences by gender and year of medical school. Medical Teacher. 2010;**32**(11):e471–e478

[52] Paro HB, et al. Brazilian version of the Jefferson Scale of Empathy: Psychometric properties and factor analysis. BMC Medical Education. 2012;**12**(1):73

[53] Hojat M, et al. Physician empathy: Definition, components, measurement, and relationship to gender and specialty. American Journal of Psychiatry. 2002;**159**(9):1563-1569

[54] Hojat M, et al. Empathy in medical students as related to academic performance, clinical competence and gender. Medical Education. 2002;**36**(6):522-527

[55] Hojat M, et al. The Jefferson Scale of Physician Empathy: Further psychometric data and differences by gender and specialty at item level. Academic Medicine. 2002;**77**(10):S58–S60

[56] Rosenthal S, et al. Humanism at heart: Preserving empathy in third-year medical students. Academic Medicine. 2011;**86**(3):350-358. DOI: 10.1097/ACM.0b013e318209897f

[57] Quince TA, et al. Empathy among undergraduate medical students: A multi-centre cross-sectional comparison of students beginning and approaching the end of their course. BMC Medical Education. 2016;**16**

[58] Rueckert L, Naybar N. Gender differences in empathy: The role of the right hemisphere. Brain and Cognition. 2008;**67**(2):162-167

[59] Mestre MV, et al. Are women more empathetic than men? A longitudinal study in adolescence. The Spanish Journal of Psychology. 2009;**12**(1):76-83

[60] Christov-Moore L, et al. Empathy: Gender effects in brain and behavior. Neuroscience & Biobehavioral Reviews. 2014;**46**(Pt 4):604-627

[61] Kiff CJ, Lengua LJ, Zalewski M. Nature and nurturing: parenting in the context of child temperament. Clinical Child and Family Psychology Reviews. 2011;**14**(3):251-301

[62] Carlo G, et al. Why are girls less physically aggressive than boys? Personality and parenting mediators of physical aggression. Sex Roles. 1999;**40**(9-10):711-729

[63] Ward J, et al. The empathy enigma: An empirical study of decline in empathy among undergraduate nursing students. Journal of Professional Nursing. 2012;**28**(1):34-40

[64] Nunes P, et al. A study of empathy decline in students from five health disciplines during their first year of training. International Journal of Medical Education. 2011;**2**:12-17

[65] Kataoka HU, et al. Measurement and correlates of empathy among female Japanese physicians. BMC Medical Education. 2012;**12**(1):48

[66] Quince TA, et al. Stability of empathy among undergraduate medical students: A longitudinal study at one UK medical school. BMC Medical Education. 2011;**11**:90

[67] Henry-Tillman R, et al. The medical student as patient navigator as an approach to teaching empathy. American Journal of Surgery. 2002;**183**(6):659-662

[68] Shapiro J, Morrison E, Boker J. Teaching empathy to first year medical students: evaluation of an elective literature and medicine course. Education on Health (Abingdon). 2004;**17**(1):73-84

[69] Feighny KM, Monaco M, Arnold L. Empathy training to improve physician-patient communication skills. Academic Medicine. 1995;**70**(5):435-436

[70] Hull SK, DiLalla LF, Dorsey JK. Student attitudes toward wellness, empathy, and spirituality in the curriculum. Academic Medicine. 2001;**76**(5):520

[71] Bloom P. Religion, morality, evolution. Annual Reviews in Psychology. 2012;**63**:179-199

[72] Saslow LR, et al, editors. My brother's keeper? Compassion predicts generosity more among less religious individuals. Social Psychological and Personality Science. 2012;**4**(1):1-8

[73] Goetz JL, Keltner D, Simon-Thomas E. Compassion: An evolutionary analysis and empirical review. Psychological Bulletin. 2010;**136**(3):351-374

[74] Henrich J. Cultural group selection, coevolutionary processes and large-scale cooperation. Journal of Economic Behavior & Organization. 2004;**53**(1):3-35

[75] Tsai JL. Ideal affect: Cultural causes and behavioral consequences. Perspectives on Psychological Science. 2007;**2**(3):242-259

[76] Carter CS. Neuroendocrine perspectives on social attachment and love. Psychoneuroendocrinology. 1998;**23**(8):779-818

[77] Hodges SD, et al. Giving birth to empathy: The effects of similar experience on empathic accuracy, empathic concern, and perceived empathy. Personality and Social Psychology Bulletin. 2010;**36**(3):398-409

[78] Tops M, et al. Anxiety, cortisol, and attachment predict plasma oxytocin. Psychophysiology. 2007;**44**(3):444-449

[79] Shapiro J, Lie D. A comparison of medical students' written expressions of emotion and coping and standardized patients' ratings of student professionalism and communication skills. Medical Teaching. 2004;**26**(8):733-735

[80] Frei J, Alvarez SE, Alexander MB. Ways of seeing: Using the visual arts in nursing education. Journal of Nursing Education. 2010;**49**(12):672-676

[81] Roberts M. Emotional intelligence, empathy and the educative power of poetry: A Deleuzo-Guattarian perspective. Journal of Psychiatric and Mental Health Nursing. 2010;**17**(3):236-241

[82] Sierpina VS, et al. Regaining our humanity through story. Explore (NY). 2007;**3**(6):626-632

[83] Pauranik A. Medical humanities: A resident doctor's perspective. Indian Journal of Medical Ethics. 2012;**9**(3):162-164