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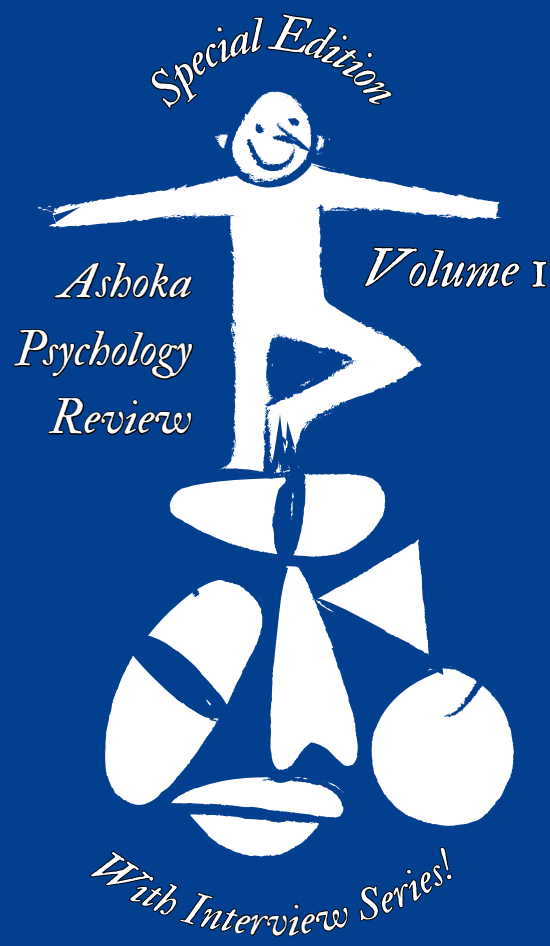
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A Note by the Editor-in-Chief

These papers come to us from Professor Mary's classroom. They have great insights about cross-cultural and organizational psychology.This is a special edition, a collaboration between an Ashokan classroom and Review. Also note that these papers have not been peer-reviewed by the team, but rather by the professor herself, and it was made certain they fall in line with the guidelines. Providing a platform for this sort of writing and research was always our goal to begin with, and we hope you enjoy reading these great academic writings.

This edition is also home to an interview series with PhD, Masters and lab students, with great insights into research. I would like to thank Rahul and Yoshita and *Anonymous* for taking the time to talk to us. I would also like to thank professor Mary for sending us these amazing papers, alongside everyone involved in the creation of this edition: the editors, designers, and authors.

This Special Edition also marks the end of my term as the Editor-in-Chief of the Review, but I am leaving this space with Pratyusha and Srishti, and I have no doubt that under their leadership, Review will continue to be a place of curiosity, answers and most importantly, questions.

Asmi Aggarwal
Editor-in-chief
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ASHOKA PSYCHOLOGY REVIEW

Can I Be Anything I Want? Occupational Identity in Bengalis and Marwaris

Mugdha Joshi [1]

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Social psychologist, Hofstede (2011) defines one of his dimensions to describe cultures, uncertainty avoidance (UA), as a society's acceptance of ambiguity. Cultures high in UA avoid risks and uncertainties, whereas those scoring low on UA are comfortable with ambiguity and uncertainty. Occupational identity is defined as a combined understanding of one's current identity and future aspirations, shaped by their past experiences in work and daily activities (Kielhofner, 2002, as cited in Phelan & Kinsella, 2009, p. 85). It involves identifying with a particular occupational group and adopting their values, skills, attitudes and goals over time.

Link Between Uncertainty Avoidance and Occupational Identity

UA could play a key role in shaping occupational identities of distinct cultural groups. A 21-country study demonstrated that whereas low UA cultures encourage business ownership, high UA countries discourage entrepreneurship (Wennekers et al. 2007). Another study found a significant negative relation between UA and entrepreneurial intention among Vietnamese students, which was attributed to Vietnam's cultural preference for stability (Sau, 2025). Similarly, Ge (2024) showed that high UA countries, such as Japan and Greece, value expertise and specialisation in the workforce as paths to job security. In medium-high UA countries like Germany, youth favour positions that offer a stable income and leisure time over uncertain occupations (Wüst & Šimić, 2017). These findings provide evidence that cultural backgrounds could moderate the relation between UA and occupational identity. This paper thus explores if UA might shape occupational identity in two culturally distinct Indian communities—Marwaris and Bengalis in Kolkata. I aim to understand why Marwaris predominantly engage in entrepreneurial and business ventures, while Bengalis gravitate toward academia, government jobs, or other liberal professions (Thampi et al., 2015).

Rationale

Studying this link between UA and occupational identity across states within India is important for several reasons. Kolkata's vast internal cultural diversity allows one to study within-nation differences. Exploring the link also reveals how cultural forces shape career-related decisions, which in India are deeply influenced by family expectations and community values (Ray et al., 2020). Additionally, Kolkata's colonial history and economic transitions have shaped occupational patterns across communities (Dugar, 2018). Examining UA is valuable as it provides insights into how individuals manage uncertainty in their occupations - a key factor in shaping occupational identity in a rapidly changing socio-economic landscape (Thakore, 2021). This makes the city, home to two prominent ethnic communities — the Marwaris and the Bengalis — an ideal setting to explore the relation between UA and occupational identity.

Marwaris and the Business of Uncertainty

The Marwaris, originating from the western state of Rajasthan have a reputation for business acumen (Roy, 2015). Their 19th-century migration from Rajasthan to Kolkata exposed them to new markets and opportunities, cementing their identity as entrepreneurs. Families like the Birlas shaped India's economic growth (Sekhsaria, 2022). Through strong family and community ties, previous arrivals supported new migrants (Agarwal, 2014) in setting up jute, cotton, steel and oil companies in Kolkata (Taknet, 2013). New arrivals also invested in the stock market. Marwaris' entrepreneurial success reflects low levels of UA, a value commonly seen in business communities (Thampi et al., 2015). Their willingness to engage in high-risk ventures such as stock trading suggests a comfort with uncertainty. Migration may have reinforced such risk-taking and adaptability, traits conducive to entrepreneurship. Vandor (2020) found that migrants are more likely to become entrepreneurs due

to their heightened need for success and willingness to take risks. Thampi et al. (2015) further suggested that people from economically disadvantaged regions, having little control over their circumstances, become more tolerant of uncertainties. For Marwaris, the harsh climates and limited resources in Rajasthan necessitated migration. In navigating a new landscape, they possibly had to embrace uncertainty and take financial risks. This adaptability may have solidified their business identity. However, Marwaris are not a homogeneous group; their identities and customs vary across regions of Kolkata, making it impossible to generalise their responses to uncertainty as entrepreneurial tendencies . Further research on regional differences among Marwaris is important to understand this link.

Bengalis and Their Shift to Politics

The Bengalis have had a different history and relation with UA. They are known for their focus on literature, education and politics (Britannica, 2025). Thakore (2021) discusses how Bengali business owners, particularly in the jute and textile industries, faced stiff competition from Marwari traders in the 19th century. Economic losses, particularly furthered by the Partition (of India and Pakistan into two separate nations), might have led middle-class Bengalis toward professions such as teaching or law, to avoid risks involved in industries during that time. British-era land revenue policies also contributed to the shift from business to politics as they offered Bengali merchants a fixed revenue, without the risks of a commercial enterprise. Considering these factors, it is possible that Bengalis developed a preference for stable careers in academia or public sector.

However, the assumption that Bengalis retreated from trade due to competition alone oversimplifies the complex socio-economic factors such as British policies and economic inequality at play. Given the limited literature on Bengali occupational identity, further research is needed to better understand historical factors and their relation to UA in shaping career preferences.

Conclusion

This paper discusses the relation between UA and occupational identity in two communities. For Marwaris, low UA would weaken the link with occupational identity, making entrepreneurship a more preferred choice. For Bengalis, high UA could mean greater preference for structured careers like academia and government jobs. However, this relation is not deterministic. To that end, future explorations can consider how variations in other cultural factors such as the effects of Partition might help to account for these occupational trends in both communities.

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ASHOKA PSYCHOLOGY REVIEW

Leadership Strategies for India

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The Global Leadership and Organisational Behavior Effectiveness (GLOBE) project is an influential project about global leadership. Researchers collected data from 17,000 managers across 62 countries. Based on past literature reviews, GLOBE project researchers conceptualised nine cultural dimensions or aspects of a country's culture that distinguish it from other cultures. The project researchers also proposed Culturally Endorsed Implicit Leadership Theory which explains that there are shared common beliefs about outstanding leadership attributes in cultural groups that influence expectations about leadership. Through a questionnaire consisting of behavioral and attribute descriptors hypothesized to either facilitate or impede outstanding leadership, GLOBE project researchers finalised six global leadership attributes which differentiate cultural profiles of desired leadership qualities (Javidan, 2006). They empirically verified 10 culture clusters from 62 countries based on similarities in countries' leadership expectations. India is a part of the South Asian cluster, best described by the cultural dimensions of in-group collectivism, the degree to which individuals feel loyalty, pride, and cohesiveness in their organizations and families, and humane orientation, the degree to which a collective appreciates and encourages individuals who are fair, altruistic, caring, and kind. The most desirable leadership attribute is charismatic/value-based leadership, which reflects the ability to inspire, motivate, and expect high performance on the basis of core beliefs. The cluster also scores high on team-oriented leadership, which emphasizes effective team building and implementation of a common goal among team members (Javidan, 2006).

India and In-Group Collectivism

From GLOBE's data on the South Asian cluster we can make behavioural suggestions for leaders in India. The high ranking on in-group collectivism suggests that leaders should focus on building personal ties and moving into employees' 'in-groups' (Javidan, 2006). Leaders in India are seen as paternal figures, who should treat teams and their families as extended family members (Gersem, 2019). Thus, leaders should try to build personal ties that resemble familial ties in order to gain respect and confidence from employees. For this, they could share meals with employees, ask about their families, hobbies and so on. Furthermore, to avoid group conflict leaders should not demean employees and ideas publicly and do that one-on-one instead. They can use the integration established to build their influence (Gersem, 2019). Collectivism finds its roots in India's diverse cultures and religions, observed through festivals and rites of passages. This coupled with India's joint family tradition, might result in stronger ties with family and community than individualistic cultures (Chadda & Deb, 2013). Consequently, when making decisions, leaders should take care not to possibly induce work-life conflict as this could adversely impact employees' productivity. According to the leader member exchange theory, which proposes that high quality leader-employee relations result in employees feeling more support, flexibility and lower work-family conflict, leaders in India should focus on relationship quality with employees (Major & Lazun, 2010). Excusing employees' attendance at work during religious rites of passages, family events, allowing flexibility during festivals, and supporting during crises would aid this.

India and Charismatic Leadership

Leaders should also focus on charismatic/value based leadership, the most desired type of leadership, within the South Asian cultural group. This means the employees will look to them for direction, motivation and inspiration. For this, leaders must present themselves confidently and give importance to values of integrity, vision, trust, respect for followers, clear thinking, inclusion and avoid situations that portray themselves (i.e., the leader) negatively (Bano et al., 2020). The concept of an affective hub, a person who is widely liked across groups in an organization and acts as a bridge between them, is especially useful for the leader . Leaders can either be the affective hub themselves or incorporate affective hubs in their teams (Casciaro & Lobo, 2005). Such individuals might not be the highest performers, but can foster relationships and facilitate communication, perhaps making them a match to GLOBE's

charismatic leader. India's strict organisational hierarchy makes teams fragmented (Christie et al., 2003); by being an affective hub themselves, leaders can help bridge gaps horizontally and vertically for more cohesiveness. They could create teams across departments and positions to promote familiarity and shared identity through their likeability amongst employees. Leaders could also leverage affective hubs within the organisation and strategically positioning them in key roles which necessitate collaboration and relationship building (Casciaro & Lobo, 2005).

Conclusion

Insights from the GLOBE project helped identify culturally-specific leadership attributes that could help a leader in India. However, the leader could enhance their leadership by intentionally reading about India's history, deep rooted reasons for its collectivistic culture, diverse cultural and religious traditions and case studies of successful leaders in India. Knowledge of these would improve a leader's effectiveness and strategy building. Finally, recommendations cannot be one size fits all; thus, leaders would learn more as they gain first-hand-experience in their organisations.

AI Contribution Statement

In writing this paper, I used ChatGPT, on May 1st, 2025 to help me define certain concepts from the readings like organisational apology and adequate explanations just so that I can tally whether I need to describe them explicitly or just write what they entail. For this, I uploaded the specific readings on ChatGPT and asked to do the following— "According to the attached file, please describe what an organisational apology is." The generated text was simply used for clarity in framing my arguments and was not copied verbatim or explicitly included in my paper rather it helped me decide whether it needs to be included. This was done much closer to the deadline when I had already written my paper since I did not have time to go over each reading again to find definitions and it helped me save time in making the final edits.

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ASHOKA PSYCHOLOGY REVIEW

A Cross-Cultural Comparison of Play Behaviours in India and the US

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Play is a universal and essential part of childhood, naturally emerging in all cultures. Although children engage in play spontaneously, research emphasises its crucial role in supporting various aspects of development (Jairam & Chopra, 2019). According to the American Academy of Pediatrics (2021), play supports brain development. Beyond cognitive growth, it also plays a crucial role in shaping a child's socioemotional landscape (i.e., their ability to form and sustain healthy relationships, and experience, manage, and express their emotions), enabling them to explore and make sense of their environment (UNICEF North Macedonia, 2019). Although universally present across societies, its nature is shaped by cultural force (Gosso, 2013). Power-distance, a cultural value proposed by the social psychologist Geert Hofstede is one such cultural force. Power-distance is the degree to which a society accepts and expects hierarchy or inequality. With a score of 40 out of 100, the United States (US) does not value hierarchy, consistent with its national values of egalitarianism. In contrast, India values inequality, evidenced by its higher power-distance score of 77 out of 100, implying an inclination towards maintaining established social order and control via hierarchy (The Culture Factor Group, 2023). This essay examines how power-distance shapes play behaviour of children across the US and India.

Foundations of Play Behaviours

Influenced by Piaget's cognitive development theory, the Western psychological framework of play behaviours, assumes scientific reasoning as the ultimate achievement of cognitive development. From this perspective, play develops problem-solving skills and abstract reasoning. However, research in child psychology has predominantly focused on white Western samples. In many non-Western cultures, cognitive development emphasises social cognition and relational development (Matsumoto & Juang, 2022). These cultural differences shape unique play practices, which are often misunderstood as developmental shortcomings rather than variations

(Farver & Howes, 1993). The Six Cultures Study by anthropologists Whiting and Whiting (1975) demonstrated that cultural environments like household structures shape child-rearing practices, which in turn influence children's play behaviors and personalities. For instance, women's work roles play a significant role in shaping children's socialisation. In communities where maternal workloads are lighter, such as among upper-caste North Indians and upper-class North Americans, mothers engage in more direct interactions aimed at controlling behavior, reactively reprimanding rather than proactively instructing behavior (Whiting & Edwards, 1994). Despite some similarities between Indian and US cultures, differences in power-distance lead to distinct approaches to play, reflecting the societies' social structures and expectations.

Play Behaviours in the US

In the US, child-rearing is supported by a comprehensive industry of experts (e.g., pediatricians, child psychologists, and parenting coaches) aimed at guiding parents in fostering children's development, reflecting their involvement (National Academies of Sciences, Engineering, and Medicine, 2016). Current literature in psychology defines child-rearing as: "shaping, forming, and educating the emerging self" (Hoffman, 2003). Play represents one of the most natural contexts in which this developmental process takes place. In the US, play is child-led, with parents, primary caregivers within the nuclear family, generally acting as facilitators. Cross-cultural research reveals that American caregivers act as playmates nearly half the time as compared to 24 percent in India (Roopnarine & Davidson, 2015). Play is often object-focused and conversational, with parents labeling toys and discussing their properties (e.g., "that's a ball"; Rochanavibhata & Marian, 2022). Mothers commonly use a question-and-answer format to facilitate play, promoting problem-solving skills (Farver & Howes, 1993). Childhood play behavior in the US reflects the 'American ideal' of "liberty and justice for all" (The Culture Factor Group, 2023). American children are so-

cialised to express opinions, challenge ideas, and take initiative: for example, studies show that older children in low power-distance countries like the US use direct commands and disagree with peers more frequently during play (Rochanavibhata & Marian, 2022). It is also found that North American caregivers often participate in rough activities like play-wrestling, which can be attributed to an egalitarian parenting style (Roopnarine & Davidson, 2015). Overall, play in the US fosters autonomy and development of the self.

Play Behaviours in India

Play has been deeply embedded in India's mythological, philosophical and religious history. Games or 'khel' inspired from Hindu epics such as Mahabharata and Ramayana (stories of war, righteousness, and moral victory) ranged from strategy games like 'chaturang' to sports. They involved competitive as well as cooperative elements like gambling and re-enactment of stories, where characters have predefined hierarchical roles (e.g., kings, warriors, servants). They centered around navigating social skills—like sharing and following rules (Rogers, 2010). Even in contemporary India, play in schools and daycares involves rules, drama, and cooperation, reflecting adherence to social roles and respect for authority (Jairam & Chopra, 2019). Pretend play, such as 'ghar-ghar' (house-house), mirrors the patriarchal family structure, reinforcing social hierarchies. A study observing free play among mothers and infants in Delhi found that Indian mothers expressed A study observing free play among mothers and infants in Delhi found that Indian mothers expressed relational socialisation goals, engaging in didactic play and reinforcing social bonds and structures (Keller et al., 2010). This suggests the perceived significance of social cognition in India, specifically, teaching hierarchical social order, navigating relationships, and learning implicit norms about power structures.

Conclusion

Play is a site for early socialisation, and can be understood as a microcosm of the larger social world—where children internalise cultural values like power-distance. Differences in Indian and American play behaviors are rooted in historical contexts and cultural values, reflecting hierarchical and egalitarian societal structures. Given the currently West-centric body of literature, further cross-cultural exploration can provide a more inclusive perspective on diverse childhood behaviours like play.

AI Contribution Statement

In writing this paper, I used ChatGPT, on March 15th, 2025 to help me with understanding the concept of 'power distance' by providing an example. I used the following prompt: "Hofsteade's cultural dimension power distance examples." On the same date, I also used it to help me understand and find academic sources for the origin of play behaviour in India, with the following prompt: "Explain historical and mythological origins of 'khel' (play) in India, cite academic sources". Lastly, I used ChatGPT to look for additional references with this prompt: "Sources about play among peers in India vs US?" I used other similar prompts to help me better understand these concepts. The generated text was not copied verbatim; it was used to find academic readings, which were paraphrased and used in the sections 'Play Behaviours in the US' and 'Play Behaviours in India'.

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Professor Mary Arneaud

ASHOKA PSYCHOLOGY REVIEW

Navigating India: An Executive's Guide to Culturally Contingent Leadership

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The Global Leadership and Organizational Behaviour Effectiveness (GLOBE) project is a large-scale research study that explores leadership differences across 62 societal cultures, categorized into 10 cultural groups. Based on a review of existing literature, and a reconceptualization of existing dimensions in the cultural values literature, the project researchers developed nine cultural dimensions, or facets of culture, that distinguish one society from another. The researchers also drew on existing leadership theory and empirical evidence to identify leadership attributes or qualities that may contribute to or impede outstanding leadership. By reducing a large number of attributes into a group of six global leadership dimensions, they analysed similarities and differences in leadership beliefs across cultural groups. Their investigation revealed similarity in leadership beliefs within groups, prompting them to develop a leadership profile of desirable attributes for each group (Javidan et al., 2006).

India: Cultural Dimensions and Leadership Attributes

India is part of GLOBE's Southern Asian group. Based on its scores on different cultural practices, this group can best be described by the cultural dimensions of humane orientation and in-group collectivism. Humane orientation refers to the extent to which a society endorses acts of kindness, care, generosity, altruism, fairness, and overall humanity towards others. In-group collectivism represents the degree of pride, cohesiveness and loyalty demonstrated by individuals towards the groups to which they belong, organizational or otherwise. In terms of leadership attributes, South Asia's leadership profile points towards charismatic/value-based and team-oriented dimensions as having the greatest perceived contribution to outstanding leadership. Charismatic/value-based abilities to inspire, motivate and expect high performance, rooted in one's core beliefs, show greatest desirability in this group. This is followed by team-oriented attributes, which emphasize the ability to effectively build teams and implement a common purpose or goal therein (Javidan et al., 2006).

Demonstrating In-Group Collectivism in Leadership Behaviour

An executive in India should be mindful of the in-group collectivism valued by the society. A good step for the executive to build cohesion, pride, and loyalty among employees could be to strike conversation and develop informal relationships with their team and other executives in the organisation. They should also involve subordinates while making important business decisions, such as by giving them space to share inputs during meetings. This can make employees feel responsible for business outcomes, thereby increasing their commitment to the organization (Javidan et al., 2006). Although applicable across situations, this is especially important for organizational transformation assignments, where contributing to the transformation's success can develop pride among employees (Kotter, 1995). Meetings should be followed up with adequate recognition, such as monetary rewards or praise, for employees' contributions. This can help reinforce, and in turn develop employee loyalty. In cultures with high in-group collectivism, leaders are often expected to treat employees' families as their extended family (Javidan et al., 2006). Moreover, support from supervisors on family matters has been linked to enhanced satisfaction among employees in India (Bhargava & Baral, 2009). Therefore, the executive should build relationships with employees' families by inviting them to company events and granting accommodations for familial commitments (Javidan et al., 2006).

Practicing Charismatic/Value-Based Leadership

To demonstrate charismatic/value-based leadership in India, an executive should articulate a clear vision with respect to their leadership role at the organisation, which aligns closely with their beliefs about the tasks to be accomplished. They could communicate this

to the team in an introductory meeting soon after taking on the leadership position. The vision should reflect how the executive's beliefs and core values can contribute to the organisation's strategic goals. It is advisable for the executive to use motivational and inspiring language with Indian employees (Madlock & Clubbs, 2019). The executive's decisions related to their assignments should align with the core values previously articulated (Shastri et al., 2010). For instance, executives who believe in prioritizing employee well-being might choose to reject tasks that maximise profit at the cost of employees' work-life balance. By thus demonstrating their beliefs, the executive can motivate followership. The executive should also identify which of their existing personal values aligns with those of the team and organization. Highlighting these in discussions and meetings can build perceptions of similarity, which, like in other social settings, is likely to increase the executive's likability. This would help them build influence while demonstrating a commitment to core beliefs (Casciaro & Lobo, 2005).

Conclusion

A guide to effective leadership in India is incomplete without references to cultural realities and desired leadership qualities of the society. India's high in-group collectivism and preference for charismatic/value-based leaders are important factors to be considered by an executive seeking to succeed as a leader in this context. Combined with lessons from practical experience, the foregoing advice serves as an actionable guide for culturally contingent leadership.

AI Contribution Statement

In writing this paper, I used ChatGPT, on February 5th, 2025 to help me come up with a title for my paper. I started with the following prompt: 'When in India: An Expatriate's Guide to Culturally Contingent Leadership: can you rephrase this to a more creative title.' The generated text was 'Namaste, Leadership: Navigating India's Cultural Tapestry as an Expat.' This was NOT used as the title for my paper, but helped me develop my current title by adding and removing words to and from the generated text. The title was edited given that this essay is a guide for executives in general, and not just expatriates. I also used ChatGPT on March 6th, 2025 to add an example to my advice of the executive taking a decision during their assignment that aligns with the core values previously articulated. I started with the following prompt: 'What is an example of a personal risk or an unconventional behaviour in an Indian organisation?' I then followed up the response with the prompt, 'Maybe related to a business decision?' The generated text contained two points, NEITHER of which were copied verbatim or included in my paper, and the inclusion of a risky or unconventional behaviour was later rejected. However, one of the points prompted me to think about employee well-being, based on which I came up with my own example which is included under the subheading 'Practicing Charismatic/Value Based Leadership.' I used my general sense to develop an example of a relevant business decision.

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Professor Mary Arneaud

ASHOKA PSYCHOLOGY REVIEW

Culturally Contingent Organizational Leadership in India: Balancing Motivation, Relationships, and Cohesion

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The GLOBE (Global Leadership and Organizational Behavior Effectiveness) project was an extensive research initiative involving 170 researchers who analyzed cultural values, workplace practices, and leadership traits across 62 societies (Javidan et al., 2006). The societies were grouped into a set of ten culture clusters to identify patterns in leadership expectations across different regions. The study introduced nine cultural dimensions, highlighting key aspects that differentiate one cluster from another and influence leadership and management. Additionally, using a 112-item leadership questionnaire, researchers identified six global leadership dimensions (CLT – Culturally endorsed implicit Leadership Theory – profiles) that either enhance or inhibit outstanding leadership (Javidan et al., 2006). Drawing insights from GLOBE's cultural dimensions and leadership attributes, along with other literature on global leadership, this paper examines leadership within the Indian context, which falls in the project's Southern Asian cluster. It explores the culturally contingent leadership attributes that a manager should implement to lead effectively in India.

Cultural Dimensions

The Southern Asian cluster is best described by the cultural dimensions of humane orientation and in-group collectivism (Javidan et al., 2006). Humane orientation refers to the extent to which a society values qualities like fairness, generosity, altruism, and kindness, expecting individuals – especially leaders – to demonstrate care and support for others. In-group collectivism reflects the importance of pride, loyalty, and cohesiveness within communities and organizations, valuing strong interpersonal bonds and group harmony. One can hence expect a prioritization of aspects like relationship-building, trust, and benevolence in leadership in this cluster.

Leadership Attributes

The CLT leadership dimensions contributing the most to desirable leadership in South Asia include charismatic/ value-based and team-oriented leadership. Charismatic leadership emphasizes a leader's ability to inspire and energize employees through strong beliefs and core values, to drive high performance. Team-oriented leadership focuses on building cohesive teams and uniting individuals under a shared goal, aiming for collaboration based on a common purpose (Javidan et al., 2006).

Leading in India

Leading effectively in India requires a leadership approach that integrates the above-highlighted characteristics. The focus in this section will be on this integration, through which one can understand concrete leadership behaviors that a manager should exhibit.

Integration of Dimensions and Attributes for Effective Leadership

From the beginning, the manager should try to demonstrate a confident and self-assured manner, sharing a clear vision that lays down their goals for the organization, while ensuring its alignment with the employees to foster a common sense of purpose and meaning. This can go a long way in showcasing charismatic leadership while also uniting teams under shared goals (Javidan et al., 2006; "Charismatic Leadership", 2023). Further, in the everyday context, although technical competence is valued in any organization, being approachable, kind, and likeable is especially important in the Indian context, which highly values

humane orientation (Tripathi & Kumar, 2020). This can mean exhibiting authentic care and concern for employees' well-being, both professionally and personally. For example, Indian employees particularly value leaders who take an active interest in their lives beyond work, demonstrating empathy and support. Simple gestures like checking in on employees, acknowledging family events, and showing flexibility during personal hardships create a deep sense of belonging (Major & Lauzun, 2010).

The collectivistic Indian culture, combined with the value placed on in-group harmony, makes it important that the manager initiates team-building activities to promote interpersonal relationships and foster feelings of pride and loyalty with the organization (Javidan et al., 2006). Organizing team sports – especially cricket, a national favorite – can be a particularly fun and effective way of strengthening team ties and promoting cohesion (Avlani, 2024). A more formal way of team-bonding could also be ceremonies for employee recognition. Praise and acknowledgement from the leader would enhance employee morale and reinforce loyalty. Such behavior would be a strong reflection of in-group collectivism by increasing pride associated with the firm, while also combining humane orientation through expression of kindness and appreciation, and charismatic leadership by inspiring continued effort and excellence (Javidan et al., 2006).

Conclusion

To successfully lead in India, leaders should integrate charismatic and team-oriented leadership with humane orientation and in-group collectivism by inspiring employees with clear values, instilling a sense of loyalty to the organization, fostering strong personal connections, and prioritizing team cohesion. Exhibiting genuine care and empathy, engaging in team-building activities, and prioritizing harmony and loyalty are crucial to gaining trust and ensuring high performance. By embracing these culturally contingent leadership behaviors, managers can navigate India's workplace dynamics successfully and build lasting, productive relationships.

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Interview Series

A series of interviews, involving conversations with Masters and PhD students about research, their work, and the nuances of being in the field!

ASHOKA PSYCHOLOGY REVIEW

Exploring Research: An Interview Series

Over last semester, we conducted a series of three interviews with PhD, lab and Masters students, understanding their work, how they got into research and the ups and downs of the field. We hope anyone reading these can learn something about the field and its various nuances. I would like to thank Fern for conducting these interviews, Pratyusha for coming up with a portion of the questions, Reva for helping in editing the transcripts, and Rahul, Yoshita and *anonymous* for their great insights.

Rahul: a PhD student

"If you ask a cool question, you have to spend some time answering it."

Fern: Hi! This interview is for a project called "Exploring Research Under PsycSoc Review Journal", which is a student based psychology journal. So first, do you want to talk about your research?

Rahul: My name is Rahul and I work in Professor Krishna Melnettur's lab. I basically work with tiny, small flies which hover around fruits, and can be found in your kitchen. They are called fruit flies, and these are great model systems to study a lot of disciplines in biology. I specifically work in the field of neuroscience, and the lab focuses on studying sleep, sleep circuits, and how sleep affects other behaviors and physiology in flies. I work on understanding how sleep circuits affect cognition, or the learning and memory systems of the fly. Basically, by perturbing sleep, can you perturb learning and memory? Or by enhancing sleep, can you also rescue learning and memory defects? This is what I'm exploring.

Fern: Okay. So how did you arrive at your current research question?

Rahul: I was mostly interested in studying learning and memory, cognition, and how adaptive behaviors affect cognition. There are many behaviors in organisms which are adaptive and used to optimize their survival as and when the need and demand comes. So many behaviors affect learning and memory. Sleep is one such adaptive behavior which significantly affects learning and memory. So, we all can correlate it with the fact that when we are sleep deprived, we can't focus, process new information and learn very well. The same applies for these fruit flies. So that's why I decided to apply to Krishna's lab and study how sleep affects learning and memory.

Fern: How did you arrive at specifically the topic of learning and memory? Were you always interested in it? Was there a specific moment that made you be like, "oh, this is what I'm interested in"?

Rahul: I was not interested in neuroscience from very early on. However, when I went for my master's to TIFR after my undergrad education, I started at the fruit fly lab and spent a few months there. I really liked working with Drosophila as a model system. Back then, the lab was looking at olfactory learning and memory, and the fact that we can see these very simple organisms display learning behavior and perform with memory outputs was quite interesting. After reading more about it, I started writing and applying to places where positions and projects were open in this discipline.

Fern: Similarly, because you said you're interested in neuroscience– how did you narrow down to a specific topic? Because neuroscience covers a lot of things, I am curious how you decided on this very specific and niche topic.

Rahul: I think I'm interested and intrigued by a lot of things in neuroscience, especially behavior. Behavior itself is a very broad term, and again, the reason I like fruit flies is because they show a plethora of complex behaviors which higher mammals are associated with most of the time. Arriving at a specific topic is important because you have to start somewhere and build a project, make a hypothesis, and test it. What helped me is that Krishna's lab revolves around sleep. Here, I learned how to study, record, and analyze sleep in fruit flies. Then you ask questions like— what kind of cognitive tasks do you want your flies to do? Again, memory is a very broad term and must be narrowed down to either short term and long term memory. This is because these two work very differently from each other and associative memories are different from spatial memories. Essentially, narrowing down was a gradual process for me. Initially, I started working with sleep and

then started asking questions related to perturbation of learning and memory. Then I further narrowed it down to a specific kind of learning and memory assay I can make flies do. I don't think I had narrowed down my research topic before joining the lab. It's a process that you can work out only after joining.

Fern: So what I'm hearing is, guidance, mentorship, brainstorming are a very big part of research because in the previous interviews as well, they talked about how mentoring is important in research. So how has your experience been with that?

Rahul: I completely agree. When I started my PhD, it was a decision driven by a lot of curiosity and enthusiasm, but very little expertise or experience with asking the right set of questions, designing an experiment and testing the hypothesis. For me, it was very clear that I want to go to a lab where the PI is more involved with the students and gives enough time for going back and forth with concepts and questions. Fortunately, even Professor Krishna works with me on projects and helps set up experiments. So for me, mentorship was my main priority instead of going to a very huge, well-established lab with an army of PhDs and postdocs.

Fern: Even in a previous interview, the person talked about how the first research that they ever did was not at all related to what they're doing right now for masters. That's very interesting because in Ashoka, you have a wide range of labs that ask different questions. But there also seems to be an emphasis on having a novel, clear idea in order to get selected. So how do you balance the need to do different things and to know what you're doing.

Rahul: Right. I think there are two aspects of it. In my opinion, my previous experience with flies helped me. I had worked with them for almost a year before writing my master's thesis on fish. However, neuroscience and a pHD in this field was the novel aspect for me. Basically I think it doesn't matter if you have done prior research on a particular model system. What matters is if you are capable of asking the right set of questions by talking to experts. Sometimes, they encourage having previous experience in a domain to have higher chances of getting selected. But in Ashoka, this was not the case because Krishna considered my candidature despite my previous thesis on a different model organism. If you have studied science in the past, research on a new model system shouldn't be a hindrance. You should only be limited by ideas and not by the model system you have worked on.

Fern: How do you figure out to ask the right set of questions?

Rahul: Before conducting an experiment, you just make a hypothesis. It's not even a question.For example, if I perturb x, then I should get y as an outcome. If you get y as an outcome post-experiment, then your hypothesis is favored. If you don't get y as an outcome, then it's rejected and your questions also are shaped during the process. Essentially, unexpected results greatly shaped my future questions and my thesis project. While conducting experiments, one can also realise that the method might not be favorable. Therefore at times, they must change the method instead of the questions.

Fern: So have you ever completely changed your research direction?

Rahul: I think the only drastic change was, from my masters to PhD.

Fern: But even within your PhD?

Rahul: Not as of now. I think I'm pretty much on a trajectory that I had imagined for myself.

Fern: And when you do research, how do you ensure that you're being original, creative, and not repeating things?.

Rahul: I think that part can be taken care of if you study the literature well. It all starts from reading. Much before conducting your first experiment, you have to understand the concept. A lot of our time goes off the experimental bench, where you read literature and plan experiments. If you have done that well, then you know what things have been repeated, before and what things have not been explored yet. In a nutshell, you have to stay aware of not only the older literature, but even the present literature that's coming out in your field of interest.

Fern: How do you manage gut instincts while researching and when do you decide to follow those instincts?

Rahul: I think I just rely on data. I don't get gut instincts about the results of the experiment, but rather about the method and procedure after analysing the technical challenges and available resources. I do not presume results because that can point towards bias and set unnecessary expectations. Therefore, I tend to depend solely on the procured data.

Fern: So what does your day-to-day research process look like? How do you test ideas or develop them?

Rahul: I start with something very basic. When I first came to the lab, my objective was deciding a model organism for my research and whether I want to study their sleep and impact on learning and memory. For that, I had to standardize fly sleep behavior and use positive and negative controls where we already know the expected result. For example, certain genetic lines are known to change sleep patterns, so I began by studying those. This helps make sure the basics, like fly handling and preparation, are all done correctly. After testing the reliability of the sleep experiments, I moved on to learning and memory studies. For that, I had to standardize a new assay where I can test their learning and memory in a robust manner. The process is the same irrespective of the field.One must start with a simple, proven experiment, make sure they can reproduce known results, and then move on to new research with more confidence.

Fern: That makes sense. Are there any resources like people, papers, communities, or tools that help you think more critically and creatively about research?

Rahul: Yes, reading papers is one thing. You must stay updated with at least the literature that's associated with your field of work. The second thing is discussing them with your peers inside and outside your lab, and brainstorming sessions with the PI when you come up with some questions. I also have this one mantra which I've constantly heard from multiple mentors of mine. "If a question comes to your mind, you should know that at least a

thousand other people must have thought of the same question before you. If other people have also thought about it, did they try to answer it?" Basically, if you cannot find any literature on your question, then you must think about why people weren't able to answer it? Was it a technically challenging task, or are we not yet equipped with the technology or tools required to do that? For example, live imaging from the Drosophila brain is a very recent thing. Now we can directly image the brain of the fly while it is walking on a ball. But approximately fifty years ago, such an imaging technique did not exist. At present, we have better techniques and tools. Therefore to reach a particular question, we must read a lot and think critically about the concept/question's novelty. Nowadays, search engines are really helpful for this purpose as well.

Fern: Makes sense. My last question is, what advice would you give to undergraduate students who are just starting to ask questions and don't have a lot of previous experience?

Rahul: I've worked with a lot of enthusiastic and brilliant undergraduate interns in my three years of PhD. One thing I've observed is that they ask really cool questions, but lack patience. If you ask a cool question, you have to spend some time answering it. Sometimes even getting a complete answer is not possible. So instead of aiming for a very tricky question, one must learn to break down that question into parts that are doable in shorter time frames. In my opinion, one thing which undergrads are running against is time. They want to make their CV diverse enough in a limited amount of time to show that they are the jack of many trades. However as a result, they end up becoming master of none. Therefore, it would be wiser to narrow down to fewer interests where you can dedicate more time and use your critical thinking. Despite their short tenure, most of the undergrads I've worked with did really well in the lab by setting up their own experiments and asking really cool questions. We must have some patience while working in science because our experiments will not work everyday. I also believe that they should not work out all the time; you will get bored of science if you end up getting positive results for all your experiments. This is because there's nothing challenging your critical thinking skills. We end up learning more from failed experiments instead of successful ones because the former compel you to spend more time questioning and thinking about possible solutions. "Why did it fail? Was it the right experiment to conduct? Or was it the right experiment for the question that I'm asking?"

Fern: This was quite insightful! Is there anything else you would like to add?

Rahul: One thing I would like to add is— people stick to a specialisation quite early on during their undergrad years. They start associating themselves with a field that they like the most. Suppose you like neuroscience. But why do you like neuroscience? Maybe you don't understand why you like neuroscience, or maybe you like neuroscience because you're focusing only on it and not on developmental biology, molecular biology, ecology or evolution. In my opinion, we all should start as generalists. We should appreciate, understand, and be equally curious about science in general. So if you are currently studying science, you should adopt the mindset of a scientist, not a molecular biologist or a neuroscientist. When people try to associate themselves with a specialisation, they are narrowing down much earlier than they should. It is undeniable that a specialist approach can work for some people. However, having a generalist approach helps by acting like a cushion. "What if this experiment doesn't work? What if this lab doesn't work? Or what if this project doesn't work? Or what if I'm incapable of working with mice and rats? Can I shift to another model system, change my question, shift to another domain of science and still work it out?" During your fundamental years of higher education, think about science like a buffet and satisfy your appetite by exploring multiple avenues in this domain!

Fern: This makes sense, thank you for this thoughtful conversation!

Anonymous: a Masters graduate

"Research finds a way. Keep holding out hope that it'll work out. And oftentimes it does."

Fern: Can you walk us through how you arrived at your research question or area of interest? Like, was there any specific moment, paper, or any experience that sparked your interest in it?

Interviewee: I was an engineering student. I was studying biotechnology, but I was quite interested in academic research from the beginning. Though I was not sure what field I was interested in because experimentalists come in all flavors. I used to do quite a lot of different internships. And, even though I liked quite a lot of the work, what stuck with me was this internship I had done in the summer of my third year where I was working with a professor in Delhi who has a lab specialized in neuroscience and RNA biology and I was working on this really cool gene therapy project where we were designing something for this condition called Spinocerebellar Ataxia type seventeen. I enjoyed every moment of that and I liked it so much that I begged this faculty at IJIB to let me do my bachelor's thesis work with her. I stayed on for almost an additional year. If not for COVID, I probably would have been there longer. But, yeah, I just really liked that work, and I had great mentorship there, like the PhD student I was working under and the RA that was helping me out with the project. They were very helpful in that. I think that helped me get into neuroscience quite a lot. And from then on, I've just stuck with it. Like, I've really enjoyed doing neuroscience, and I found that it's quite interdisciplinary. So, I really like it, not just because you're doing just one thing. You're doing quite a lot of different things because you have animal behavior that you can look at, you have molecular and cellular biology that you can do. You can do anatomy and physiology studies, and you can use a wide array of model systems so you can do whatever you want and it's really good.

Fern: I really like that. Do you have any biases towards what you prefer doing?

Interviewee: I mean, I definitely would want any work that I do to maybe include some kind of animal behavior and include things like molecular and cellular biology techniques. I don't know. I'm just not very fond of working with human beings. I just don't enjoy doing noninvasive techniques and, like, processing that data. That never clicked with me for some reason. But, yeah, I really enjoyed doing mouse work. I really liked doing fly and even zebrafish work even though I'd always claim that mice are superior. But, yeah, I want there to be animal behavior and some kind of muscle and anatomy.

Fern: So because neuroscience is such a broad field, when you had to make a research question, how were you able to narrow it down to a specific research question?

Interviewee: See, so in the beginning, and this sounds like such a cliched cover letter story, I was really interested in neuro-degenerative disorders. Like, my family has a history of them. My mom's side has had several people die of Alzheimer's. My dad's side has Parkinson's. So I was like, oh, fancy. Good genetics I've gotten! Anyways, I really wanted to, in general, explore neurodegenerative disorders, which is why I was so excited when I got to work with Spinocerebellar Ataxia type seventeen because it is

a very interesting neurodegenerative disorder that looks extremely like Huntington's, which is why it also used to be classified as Huntington's disorder four. Good fun stuff. Neurodegenerative disorders was something I was very interested in. But then, I grew a little older and realized I really love looking at development in general and neurodevelopmental conditions, especially like autism in areas, probably because I have them. I really like the idea of studying them, but not from a pathological viewpoint because I've seen so many labs that have this whole, oh, we're going to cure this, which sounds so eugenics-y. I want to understand the condition. I want to understand how void molecular cellular circuit and developmental patterns create a situation where somebody may have certain advantages, certain disadvantages. But I don't know how to get into the whole eugenics of it. So that is what I also really got interested in, looking at neurodevelopment, but not from a pathology point of view, just from an understanding point of view. And I've also recently started to love circuit neuroscience quite a lot because circuits really bridge the gap between animal behavior and simple molecular and cellular behavior of neurons. So, being able to understand what circuits affect what behaviors is really cool, and the work that people are being able to do in the field is so good. I just love it so much. The development of, like, chemo genetics and optogenetics. God, dear work. I love it so much.

Fern: Ha! So, specifically with regards to the master's thesis that you did, how did you arrive at that?

Interviewee: So, I have a good answer and a very bad answer for that. The very bad answer is I was stuck at home during COVID, and I wanted to really get out, and ISU was my only way out. So I just took that offer, and it was good for a while. And I really enjoyed being able to explore circuit neuroscience. I'd never done it before, and I really liked getting to work with mice hands-on, getting to learn how to do surgeries and, in general, behavior work which circuit neuroscience labs allowed me to do. So, how I got into it is simply that the lab that I got into was one of the few labs that were taking students during that time. And I just clicked with their work a little more than other people's work because ISE's center for neuroscience tends to have more systems people than molecular science people. And so, I thought that it was a good negotiation between the two sides. Circuit Neuroscience is really good that way. So, that's how I ended up there. But I did enjoy learning. If it were up to me, I would have definitely worked on neurodegeneration or neurodevelopment. But, I didn't have the option, but turns out what I ended up doing was really cool too, even though I had some bad experiences there. Overall, quite good.

Fern: Yeah. That makes sense. You said that you have a lot of different interests. So, have you ever rapidly changed your research questions? Like, how do you deal with that? Changing your research question or, like, external pressure to change a research question if any.

Interviewee: See. So, in India, I'll be very honest, most labs do not have so many resources, that you can just flip a coin, or just flip over into a new project. But a lot of times you just have to, for example, if your project is just not working. Unfortunately, in science today, negative data is not something that is publishable by most means. So, if the project that you've been working on and that you have been passionate about is just not giving you any data that you can publish, especially as a PhD student, for example, you just can't help but want to take up a new project that probably

would give you better publishability like that. That would allow you to advance your career. Right? Because especially when you are doing academia as a career, you have to also think about how well you can publish. You have to think about how much you can learn from something. And, even though, some amount of failure is going to teach you quite a lot in a project, if you're not able to generate any data at all that is meaningful, you would be forced to change your question but then how do you do that is also a little difficult in the sense that you have to look at what your lab will allow you to do. That is, for example, if I am working strictly in a pain lab, I may not be able to take up questions of, like, say, neurodevelopment because they, a, don't have the expertise and probably may not have the resources to come into a project that is not within the realm of what they're exploring. So, it is a hard thing and generally, good communication between the people who are letting you do your research or guiding you through research, is what may allow you to come up with a better solution for that.

Fern: As you mentioned, there's a lot of pressure to come to a good question and to find something that will give you results as well. So keeping that in mind, how do you find something novel to look at in your lab? Like, how do you approach that kind of question? And secondly, how do you make sure that your approaches are novel? Because that seems to be something that you need.

Interviewee: See. So, a lot of times, it's not about the approach that is novel, but about the question that you're trying to ask that is novel. And, I mean, when you're trying to come up with a novel question, for example, a good way to do that is first getting a handle on the literature of the field that you're interested in. If you know what has already been done, you'll be able to find what gaps that you can fill that the field is going to care about. Like, a lot of times you may also come across very frivolous questions, which may be interesting to think about and do work on, but they may not, again, be questions that the field or society at large is interested in getting answers to. So then you have to, again, make a choice between do you want to do something fun or do you want to do something that is going to have much more impact? And so, look to sift through literature. Like, that is why when PhD students just join their PhD labs, they go through an extensive period of literature review where you read a lot of papers that are available specifically in the field that you're interested in. And then you think: this is something that I can do. This is something that is going to be good, and this is something that has not been explored. Another way people can go about it is, like you said, a novel approach to something that has already been looked at. So, that definitely is also something that science really needs but unfortunately not something that is paid a lot of money and attention to: doing replication studies using more modern materials does not publish very well, unfortunately, from what I've seen. But, things are changing.

Fern: So what suggestions would you give undergrad students who are trying to ask good or novel questions, especially if they don't have prior experience and they're just entering the field?

Interviewee: I would just tell undergrads to chill out honestly. Like, see I understand that you want to also get into a field but what is more important is firstly, getting a flavor of the field right because like you said a lot of undergrads will not have a lot of experience with the field. A lot of the time, they won't obviously

be given big major projects to handle on their own because they don't have the experience to do that, which makes sense. I mean, it feels bad that, oh, you're not being given responsibility, but also great. You don't have the responsibility. So my suggestion to all undergrads in general is don't have a very rigid idea of what you think you like because you probably have not gotten a flavor of what all is out there at all. So, like, taste everything. Like, you can go to different labs every summer, maybe every winter. Just look at the work that they're doing. Try some amount of hands-on work there, whatever they allow you to do. And figure out if that is something that interests you at all. A lot of the time, you may not even realize you're interested in something and just by doing it, just by trying it out you will stumble into something that would be more interesting to you than what you thought you liked at one point. So, that is something that you should definitely do and secondly don't feel bad about doing grunt work in the lab. Since you are an undergrad who's just joining a lab, obviously you're going to be given low effort tasks. Like, a lot of the time, you'll be given cleaning tasks. You might just be asked to shadow people, and you may not get a lot of hands-on experience right in the beginning. Especially in India because people are already running on such small amounts of resources. Like, nobody can afford to waste a lot of resources even by accident, even if you mean well. So, you just have to build a rapport with the people in the lab, with the PI that you're working with. And slowly, you will be given more work. Slowly, you'll be trusted with better projects. So, like, yeah, just hold on. If you're interested in something, just take some time to build that rapport. Show that you're capable of doing the work. For example, if somebody is giving you analysis work rather than actually making you do the experiment, do the analysis work because knowing how to analyze data is also very, very important. Like, it's just the whole glamorize. I am doing an experiment with the pipe. It is not all there is to science. Right? So, do the work, build the rapport. Over time, you will have more experience. You will gain the trust of people in the lab, and you will be given better things to do.

Fern: Yeah. And speaking of resources, for example, there are a lot of labs in Ashoka, but also it's very competitive because a lot of science students do want to be a part of different labs and different research projects. So oftentimes, there's just not enough space or resources for those many students. So how would you suggest approaching, like, not necessarily just within Ashoka, but, in general, how would you suggest approaching labs, especially if you don't have experience?

Interviewee: Yeah. So, obviously, it makes sense that there's only a limited number of labs here. So not everybody may get a chance to do pool projects with people. Right? So, yeah, that is something that is going to happen. But, especially since we are very close to Delhi; we're not in Delhi, unfortunately, but we're quite close. There's shuttles. Right? So, especially in summers, for example, or during the winter break or maybe even the mid-summer break if somebody is interested, just approach labs in Delhi. You have a lot of really cool institutes that are doing a lot of very good research. You have places like IJI, we have places like RGC, there's JNU, there's National Institute of Immunology and many, many more research institutes in Delhi itself. Right? And so, you can approach people there. A very good way, unfortunately, is if you know a relative or if you know a parent's friend who is working somewhere, that will create an easy way for you to get in and do some kind of internship. Otherwise, just cold emailing professors really, really

works. Right? As in, don't just send mass emails. Don't be a sad mass emailer where you're just sending the same email to everyone. Show that you're actually interested in the work that that specific person's lab does. Maybe read a couple papers. Write an email that shows that, oh, you have read the work that they're doing and show that you are interested specifically in the work that they're doing and send an email. Don't make it sound like, *oh, hey. I want an internship. Please give.* Generally, people get turned off by that. Personalize your emails a little bit. That'll definitely improve your chances of your cold emails not getting deleted or whatever. But, yeah, in general, cold emails won't always work like younger professors are more likely to respond to your cold emails than older professors. There's always also just walking in like my first internship that I got in the first year of my undergrad was, like, the three of us: me and two of my friends. We just literally walked into this institute in Dwaraka close to my engineering college. It is called the National Institute of Malaria Research. None of us were interested in malaria research, but we were, like, yeah, what the hell? We literally walked in and begged for an internship, and one of the professors gave internships to all three of us. So, like, like, that also works at times. Other than that, there are always a lot of these really good programs, especially when you're in your third or fourth year. Like, ISE used to have the best program. So, they might invite you to either ISE or NCBS to do a two month summer internship there. Or, there are all of these national societies that have their own undergrad fellowships to do, like, a two month summer internship in some lab. So, there's a lot to explore outside of Delhi also. Like, Lucknow has CDRI, which does really good work. Bombay and Pune have ISOs and Bombay has IFR. Bangalore is very, very rich in, like, biological science dedicated institutes like IISC and CBS. There's also the Center for Human Genetics. A lot of stuff is there. And there's also ICTS that does some biophysics work. So just check it out. Check everything out. Like, if you're going home for the summer and you happen to be in a city that has a lot of these things to do, just go there. Just ask for people.

Fern: Moving back to your research and your experience with research, how did mentorship influence the development of your research and what kinds of resources helped you think more critically and creatively? Like, any people, communities, papers?

Interviewee: So, in general, I always claim that I have been very lucky in terms of the kind of mentorship that I got, especially when I was an undergrad. Like, this first internship that I had, it was at this place called NIMR, which does malaria research. And this professor was kind of young and the lab was also still just developing. So, the mentors that I got there, like, there's this one post doc and these two PhD students that I was closely working with, I am still friends with some of them. They were very good mentors, not just for science, but in general, like, social mentors. They became good friends. They taught me how to wade through academia in a lot of different ways. And even though malaria research ended up not being the thing that I wanted to do, I did learn quite a lot of skills from that, especially molecular and cellular skills. I learned how to do cloning, etcetera. I learned how to do culturing mostly for parasites. It was very fun. We used to get blood from blood banks and then culture the malaria parasite.

Fern: That sounds amazing!

Interviewee: Yeah. So that was fun and it was good. And, this place, IJIB, where I did my summer internship and my

bachelor's thesis work, then I had this mentor who is a PhD student there and is now a postdoc in Texas and, this RA who is now, I think, a PhD student in Tennessee somewhere. So both of them were very very helpful and again they became very good friends and both of them have helped me wade through not just academia, but like, in general, quite a lot of other things so I learned a lot from them, especially the PhD student. They were very brilliant and hated following the rules. So, it was fun working like that. In ISU, I had a lot of seniors who I could look up to, who I could ask for help. Mentors really are very very important. They really do shape how you get through academia. Like you really need your Obi Wan.

Fern: Haha, yeah. And are there any resources that people can start to build online? Like, how would you suggest that someone starts building resources to think critically?What?

Interviewee: Resources like people or communities or, like, Reddit, Tumblr? I'm just saying words. So unfortunately, I am not a very online person. But a lot of people do find genuine help on places like Reddit. Right? Reddit has a community for pretty much everything. Otherwise, there are places like ResearchGate also specifically for people who are doing sciences where people just post questions like, *Hey. I'm stuck with this. This is not working. Please tell me how to make it work.* And there will be people who make it work for you, who tell you what's wrong.

Fern: I couldn't figure out G power, and then ResearchGate saved us.

Interviewee: Yeah. Right? So you'll find people who are willing to help. And a lot of the time, you'll realize you're not the first one to stumble into a problem. Like there have always been undergrads who are trying to learn and who are making pretty much the same mistake you are making. So you will find relatable experiences also, and you can learn from their experiences. You'll find answers already about questions you would have asked. So, the Internet is always a great resource. Other than that, again, it really helps if you are connected with seniors, especially seniors who are willing to help. Like, at least when I was an undergrad and my college for some reason, I I don't know if it's a universal experience, but I had very, very good seniors. And so we had this entire culture where the seniors would want to help the juniors grow. And it wasn't a quid pro quo of some kind. It was just like, *Hey, we had seniors who helped us, so we are being seniors who are helping you now and the only thing we want out of you is you help your juniors out*, and that kind of culture really helps. Unfortunately I've not seen this in Ashoka which makes me unsure if it was just my college or if it's a universal college thing. But, yeah, just talk to your seniors. A lot of the time they will be willing to help you out. You also have to realize if you are the one who's asking for help, you will be the one who'll have to squeeze time. They may not want to change their schedules for you. You will have to do that. You are the one who's looking for answers. So, don't expect other people to make too many accommodations for you, in the sense that they may also have quite a lot of other things going on. You have to, like, find a way to get to people because you want the help. So and later on, like, other people will also pay you back in the same way. Like, they will, like, make time for you rather than expecting you to make time for them. That's how senior-junior relationships often work. Just try and build some.

Fern: Yeah. Okay, so my friend and I were talking, and

then we're like: *Oh my god. We have a really good question.* And then we Google it, and there's, like, 200 papers about it. So, I know you already talked about originality, publishing, and stuff. But apart from that, do you have any other thoughts on originality in research versus like research being kind of repetitive?

Interviewee: A lot of the time, it is possible that you're going to end up working on the same thing as someone else. Like almost every Nobel prize you see has at least three recipients these days. Which shows that multiple people are working on the same thing. Academia often gets very, very crowded, especially in very, very hot fields. If you look at cancer research, for example, you can throw a stone and it most likely will hit a cancer researcher at this point. So it's very popular. It's very dense and very packed. Similarly, Alzheimer's research or Parkinson's research are very, very crowded these days. So you will find people working on very similar things. You might end up being the second or the third person who publishes something. Your entire idea might already get published before you can publish it. So that is always a risk you run. Oftentimes, you can't really help that. These days you have open science for example that lets you know what other people are doing to an extent and so you can plan either around it or you can collaborate with them and make better projects. A lot of the time, you just can't help it. You will have a brilliant idea. It turns out that's already been done. So just go through review papers and you'll see what people have done in the previous years. If you don't want to go through every research paper out there, review papers really really help out. They'll give you a big outline of what all has been done and you can keep looking through reviews and keep finding more people. Reviews also sometimes just have gaps in literature explicitly written.

Fern: Yeah, that also really helps out.

Interviewee: You can model your questions using what discussion they have about what is not known.

Fern: This is a fun question. So, what does your day to day research process look like? Can you give us a glimpse into how ideas are tested or developed?

Interviewee: So, these days I am doing more teaching than research unfortunately. In general, academic life is not like a nine to five. It's not going to be stable. Some days you'll just have absolutely no work to do and some days you have fourteen hours worth of work to be done. So, it just depends on what and how you're working. Like, I, for example, really used to love not having anybody around while working. So I had shifted my day-night cycle when I was doing my master's work. I would come into the lab in the evening, work till 9AM, and then I'd go back when most people would be coming in simply because I realized I could very easily get hold of equipment that is not being fought over by 10 other people trying to work on the same thing. Speaking more generally, when I was doing my master's work, I quickly got rid of all the experimental work that I had to do, for example, doing surgeries first because that takes a lot of time. Once you're done with the surgeries, then you know that you have to wait a twenty one to twenty eight day period. So one month you can't do anything with the mice that you've done surgeries on. So then you just plan some other experiments. Maybe you've done surgeries before that are ready to be used, so you do behavior experiments on them. Or you can set up things or analyze a lot of your data.

Fern: From what you've said so far, there seems to be a lot of risk involved with whatever you do, which is a part, I'm assuming, of research. But if you're not sure what you're doing, how do you navigate those risks? Like, let's say, I don't know exactly what I'm interested in, like. And so I want to sample different things. But how do I draw a line between specific things that I want to do? How does one balance that?

Interviewee: I would definitely try and test out some labs. For example, you don't have to spend a very long time. Just maybe a one-month period would give you a good idea of what the lab does, what the field is like, what research in the field looks like, what research in the lab looks like. A lot of the time, it may not be the field that you're not interested in, but simply a specific lab that does not click with you. Because in the end, your boss, the PI, the principal investigator of the lab, is also a person, and you don't click with every person's way of working. So maybe the way that your boss is running your lab may not be a perfect fit for you, even though you like the field. So then it's also a good idea to move on, because you don't just want to find a perfect research question or a perfect field to work in, but also people who you can work with. You don't want to tiff every day. So you just keep looking until you feel comfortable working. That is why these two-month internships really help. You also have in-semester work that you can do. At least in Ashoka, I've seen that a lot of people do some work. That also gives you a good idea of what the lab culture is, what the field is like, what research looks like in that field. So just keep testing it out and you generally will get an idea about what you like doing. For example, for me, doing that bachelor's thesis work was so euphoric. Even though I was still in my fourth year, I had eight subjects. But I somehow managed to put all of my subjects in the morning period. So after lunch, I'd head from Dwarka to Sukhdev, from West Delhi to South Delhi, I'd take a metro and go. I'd work there till midnight. It was just so fun to work. I just wanted to do it. A lot of the time, you will stumble into places that make you feel like, oh, I want to do this, I would do this. That's a good answer. That probably is what you are interested in if you're willing to put in that much effort.

Fern: And how often do you have to give up something you're really interested in for funding or to actually conduct a project?

Interviewee: Funding is tricky, especially in countries like India where funding is already scarce. Funding agencies tend to fund projects that have translational capacity. A lot of the time, professors putting in a grant proposal will pretend that a project has some kind of translational capacity, even if it may not, just to get a little bit of an edge. A lot of the time you will realize that you just can't get money for a project you're really interested in because it may not have benefits for society per se. In general, people don't like the idea of funding blue-sky research. They don't like funding fundamental research, which is just researching things for the sake of finding things out for the joy of science, not because it's going to help people out there. Which is unfortunate. Money is not given to fundamental research, which is sad. But a lot of the time, that's the case. You just end up making it either sound like it has translational capacity, or you shift your project just enough that it has actual capacity to translate.

Fern: Makes sense. Last thing — this is specifically supposed to be a discussion about research for undergrad students to

refer to, because there are a lot of undergrads in Ashoka who want to do research. Do you have any closing thoughts or opinions?

Interviewee: One thing to keep in mind is that research will often feel very bleak. I will be very honest, especially these days where almost every country for some reason is slashing funds. You will feel barriers come about — for example, you'll sometimes have difficulty finding papers because companies want to paywall them. You will have difficulty getting fellowships to do research because so many of them have been either cut out or don't have enough money to fund so many students.It does feel like you're doing research in the eighteen hundreds where only a couple rich people had the capacity to do research.

But research is really good, and I'm sure it will hurt a lot of times, especially when you see that rejection email saying, "We can't give you money for your internship proposal." But research finds a way. Keep holding out hope that it'll work out. And oftentimes it does.

Fern: Makes sense. Thank you so much.

Yoshita: A researcher at an Ashokan Lab

"I feel what's less spoken about is the emotion behind doing science."

Yoshita: So, we actually started with something else in mind. I came up with some expertise from my previous lab that I was working in. And the current lab that I'm working in is a lab that tries to understand mitochondrial structure-function relationship. So, it's a very strong cell biology lab, and the expertise that I came from from my previous lab was circadian biology. So we were trying to sort of marry the two fields because there was also some recent literature that had come up that was bringing up some very interesting crosstalk between these two fields. And so we were trying to address that. But what we came across when we did some experiments was something that really surprised us, because we were finding that a protein which was canonically known to function as a circadian protein, as a photoreceptor in *Drosophila*, had an additional, previously unknown, function. So, it was doing some non-canonical functions. We are seeing that it is not just about photoreceptors, but it could also have some implications in diet and nutrition cues that it gives to stem cells specifically in *Drosophila*. We are, then, trying to understand the implication on mitochondria, because any kind of cues that a cell gets, mitochondria act as first responders to that. Especially something like nutritional cues, mitochondria are very responsive and they change their structure, and in turn, its functionality. So, we are now asking those kinds of questions.

Fern: That makes sense. So how did you arrive at your current research question and your area of interest? Was there any specific thing that made you start thinking along these lines?

Yoshita: We did a few initial sets of experiments with some hypothesis in mind. And then, eventually, when we did a few more experiments and we were seeing that this is really functioning very differently from what we thought it was functioning like, that's when we sort of narrowed it down to what it is today, where we are specifically looking at, after multiple iterations. I specifically look at the *Drosophila* ovary, and its functionality is its reproductive output, primarily in females. But more particularly, let's say, the number of eggs that it produces, for the next offspring or the next generation — I'm looking at the various nutritional as well as light cues that this ovary responds to. So initially, while we thought cryptochrome is a protein that is known canonically as a blue light photoreceptor, is also now functioning by sort of integrating the nutritional cues as, and, it is probably — which we don't know yet, we are still testing — changing the mitochondrial morphology or its function, and hence, its stem cell proliferation as well as differentiation. So, when we talk about the number of eggs that are being produced by *Drosophila*, it is because of a stem cell that has to proliferate and differentiate to give that final egg as an output, which the fly lays. So, changing these nutritional cues at the upstream changes the reproductive output. So it just came as a – I say it as a hypothesis today, but we didn't have the hypothesis in mind when we started off. We did some initial experiments and then framed the hypothesis.

Fern: Makes sense. And, what led you to looking at this field in general. Like, how did you start getting interested in research and this field?

Yoshita: So my background is a bachelor's in engineering and biotechnology. And, while I was doing my undergrad, unlike my colleagues who have done a BSc or a BS, who had a little more streamlined understanding of what research is, I think my background was a lot more about engineering. It had a lot to do with industry, and we were taught a lot about process engineering, engineering mathematics. We were taught about fermentation, bioreactors, and things like that. But we also had some core biology, cell biology, molecular biology, biochemistry courses in my undergrad. And I just started liking these courses more. So, when we explored the idea of doing research, I did a few internships during my undergrad. And that's when I kind of knew that I like doing experiments on the bench. So doing research, I mean, there are also other aspects to it, like, somebody could be a computational biologist. But I like the idea of doing experiments on a day-to-day basis. I like doing specifically cell- and molecular-based experiments, so biology based experiments. So then, after doing those few internships, I also realized that *these things I like, these things I don't like.* So I just navigated that way, and I also tried a few things differently, but once I knew that this is something I like, it was just a matter of what kind of questions I wanted to address.

Fern: And when you said internships, that reminds me, like, the previous people I've talked to, they talked about how the first internships they did were completely unrelated to what they're currently doing.

Yoshita: Absolutely.

Fern: Did you have the same experience?

Yoshita: Absolutely. I don't think any of my past lab experiences are in any way similar to what I'm doing today, in my current thesis. But there is a translational skill set I developed. For example, the first internship I did was a two month summer internship in my second year of undergrad— this was in a hospital setup. I was in Mazumdar Shaw Cancer Research Center, and we were in the infectious biology department. And all I did every day was collect bacterial samples that were streaked on plates from some – from patients, and I would extract DNA from those samples, and, we were just looking for antimicrobial resistance genes in these bacterial samples. And every day, my job was to– extract DNA, run PCR, then run gel electrophoresis and just say, is this gene 'yes' or 'no'? That's it. I just did this — like I did hundreds of samples. That's all. But there is so much depth to just running PCR, or there are so many troubleshooting steps just to gel electrophoresis. So at the level of internships, I would say, my focus was a little more to learn techniques, because the understanding of science came much later, I would say. It was more at the level of I want to learn this technique, I want to learn that, I want to try this technique. So the next internship I did was in a mass spectrometry facility. So there I just learned the idea of running mass spectrometry, what's the principle behind doing mass spectrometry? But today, I'm not doing anything related to the questions that I target. But the techniques I learned have definitely been translational.

Fern: Yeah. And if you've done such a wide range of things, how did you go, "oh, at the end of the day, this is what I want to do?"

Yoshita: The thing is, I don't think that answer is still there. I just know that I like this question that I'm pursuing today. And I know that I will be pursuing it for my thesis, because this is something that is fascinating to me today. But I'm not sure if this is what I will pursue in my next project. So it is more like, I just went with the flow, I would say. And also, to be very honest, I went with something that I got an opportunity for. So, even before Ashoka, I tried multiple other places, but Ashoka was the only place I got an opportunity in. So then that also sort of narrows down the options that you can work with. Right?

Fern: Yeah.

Yoshita: So, it was not really that "I want to work in this". In some sense, it was brought to me by various circumstances.

Fern: So in such a situation, do you think *"okay, I'm going to be interested in what I'm doing because this is something new and I find this interesting"*? Or do you still find a way to bring something you were interested in to begin with into what you end up doing?

Yoshita: Both. It's a balance, right? So, I came up with the idea of pursuing a circadian story, because in my previous lab, I had some understanding of the circadian biology. While I was working with a different model organism, working with *Drosophila* was also fascinating when I joined the lab because I had no experience working with Drosophila before. And, all studies that I had read were trying to understand the question that I was targeting with mouse models. And so nothing had been targeted or looked at in *Drosophila*. So that was also something novel. But what I actually found was a role that was not expected at all out of that protein. So, I think experiment by experiment, my story is also changing, but at the same time, I'm also liking the process that it's surprising every day. So in some sense, I'm shopping.

Fern: And were there any tools: people, papers, communities, anything that helped you think more critically or creatively while doing research?

Yoshita: If you are asking about resources available generally for a critical look at some work, usually, I get it from discussion sections in the papers. They usually describe how they thought about a question that they've started working with and they also briefly summarize what they have found, and how this opens up something else in the field. That is one way to look at it. But for me, I would say my majority of critical thinking and understanding comes from working with different scientists. Usually, my professors, or my current PI, or even my previous PIs who I've worked with, when you do an experiment and present to them, they would give me a perspective that I have not thought of before. Even if the experiment has worked, when we are interpreting our own data, my interpretation would probably be different from what my PI interprets or what my lab mate is interpreting. And that gives a different kind of understanding to looking at. I think that's where my maximum learning is. I tend to learn more when somebody is looking — even not just my work, even if it's somebody else's work. I think because they are looking at it every day again and again, I don't think they see something that a fresh pair of eyes would see.

Fern: That's interesting. And that's very similar to what other people also said about how having different mentors really helped them with brainstorming and coming up with a good

research question and stuff.

Yoshita: Yeah.

Fern: Speaking of research, one of the main things that we find, at least when we are looking at how we are going to come up with a thesis is, *oh, you need to have some kind of a novel question or a novel approach.* How do you manage to do that? Or do you even have to do that? Do you feel there's a need for novelty?

Yoshita: I mean, one should think about doing something novel. But, what I'm also seeing is that, it's becoming difficult in some sense to repeat what somebody else has already done because of probably the inherent nature of biology with it being messy and it having so many interindividual differences, especially in the kind of model that I work with. Just repeating somebody else's work or reproducing some others — let's say it's been done in a different model, like I mentioned. This question can be answered in mice. But is that translational to *Drosophila* or humans? We don't know unless we test it. That is also, in some sense, novel, to do something in a different model because even within the same niche itself, I find different cells behaving very differently. But, I think the idea should be more about doing an experiment from start to finish, perfectly, rather than how novel it is. Even if your experiment is showing exactly what someone else has done. At least at an undergrad thesis level, for example. I think it should be more about, in my opinion, I think it should be more about doing an experiment, perfectly. And if you're able to reproduce somebody else's work, even that is quite big. Because more or less, for me, sometimes, I do an experiment and I try to repeat it, but I don't find that it's reproducible.

Fern: Yeah. And what kind of advice would you give undergraduate students who are just starting to develop a research question and people who might not have a lot of previous experience?

Yoshita: One is, I think at the level of undergrad, it's good to be a little bit open minded to what you want to learn, because that'll sort of surprise you. Like, I always thought that I'm not somebody who can do bioinformatics and computational biology, and I didn't think that that was very interesting for me. So I kind of stuck to doing lab work. But, it surprises me. Like, today, the kind of questions that you can answer, the amount of information that you can get from doing this kind of analysis, is actually quite impactful. So at the starting stage, I think one should sort of be open about what they want to work with. And two, I would say: develop ideas. In a particular field, even if you read two-three papers, you will get a sense of what is known in the field and what is not. And reviews, for example, are very helpful in this. A recent review of a certain field should kind of cover what is more or less done in the field, and the discussion area would give a lot of open questions that can be answered. It's more impactful to just start with an experiment, and I think the journey will automatically take its course from there.

Fern: That makes sense. And what does your day to day research process look like? Like, how do you test and develop ideas?

Yoshita: It's not as rosy as it is probably imagined. It's a lot of repetition, a lot of grunt work, a lot of fly husbandry for me, or it could be for anybody else — it's basically culturing. These

itself would take a majority of your time during the day, and you will have a lot of troubleshooting to do from there itself. Suddenly, one day your culture is not growing. And just troubleshooting that itself can take most of your day. And, so mostly, it is, I would say, repetitive work. It's just a matter of luck that one experiment works, and, again, there are rounds and rounds of repetition and troubleshooting and optimizing. So it's less about, I think, getting something new every day. When I joined the field, I came with a very naive understanding of what research looks like. So, we have this idea that every day I'm trying something new because it's not a nine-to-five job, right? You are doing something new everyday is the assumption. But that's not true.

Fern: Yeah. Do you ever find it hard to sustain your interest in times like this?

Yoshita: Absolutely.

Fern: How do you deal with that?

Yoshita: I think breaks are essential, like extremely essential. I see, not just me, but all my peers who are quite burnt out, and the motivation drops there. Because if somebody has reached a position to do a PhD, I think their passion and motivation is already kind of determined. If somebody has chosen to do a project and get into this field and dedicate five to seven years of their life to answer a particular question, I think they've already, so-called proven that they are passionate about this. It's just a matter of getting up every day and showing up and saying: *Today, I'm gonna try this again*. And so mostly when people lose interest, it is just coming from the fact that they're burnt out or they have repeated a certain experiment multiple times, and they're facing failures on a day to day basis. So what I usually do is either just take a few hours of break and just do something else and then come back with a fresh set of eyes and mind. Or I take a break itself. I go home. I do something else, basically. And then come back and think about it. And then it actually starts getting easier once you develop a mechanism, because, I feel what's less spoken about is the emotion behind doing science. There is a lot of emotional investment to an experiment when you start it. Lots of hopes and lots of dreams, and then by the end of the experiment, it's quite shattered. So to build that resilience back, I think, a break or talking to somebody, asking somebody else to take a look at the data; Then, they will ask you: *How did you do it? What was that percentage of antibody that you used?* So when those kinds of questions are asked, then you can sort of start thinking, *"Oh, maybe this is where I did something wrong. Oh, maybe I can test this now,"*.

Fern: Yeah. And emotion can also come from the fact that you developed a research question from your own experience, which can make it more crushing if it doesn't work out.

Yoshita: Absolutely. Yeah.

Fern: Have you ever found that something didn't work out so you had to completely change your research direction?

Yoshita: Absolutely.

Fern: How do you deal with that as well?

Yoshita: So, it's quite challenging. I mean, moving spaces and deciding that this is not something that you want to do; it's a lot of internal fight also. You are, in some sense, questioning the choices that you made, right? At that juncture, I think you start thinking *I've worked on something like this for so many years, and it's not working. Has it all gone to waste?* But, I think moving on from there, it just takes that one huge leap of faith and belief in yourself that, *no, I can shift directions, and that's absolutely okay, and what you learned there, nobody can take that away from you*. And that learning is quite translational because, like I said, something that I might have done in my internship ten years ago would suddenly spark an idea for me – about a problem that I do today here. I don't think anybody should do something and be miserable at it. If they're doing something like this on a regular day-to-day basis, I think it's better that they're at least happy about it, because after doing so many years of research and having failed at it so many times, I've kind of reached a point where I can say that the joy that one gets out of doing science or being in science is just the idea of doing it and what it gives in return should be sort of detachable. Like, one should have some detachment to that.

Fern: Yeah. And I think that's it from my side. Is there anything else you would like to, like, share or say?

Yoshita: I would just say that more people are needed. A lot of people I did undergrad with are doing science. It is something that is promoted in India a lot, right? You either do engineering or medical, and primarily the obvious choice is to do science. But despite that, staying in science is quite challenging. We need more people who are motivated—that's what builds the community, right? Because only when more people come in and feel the joy of doing this, that's what will make this community a better space.

Fern: Makes sense. Thank you so much. This was very insightful.

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