

Exploring the experience of neurodivergent engineers in the workplace: Re-crafting engineering?

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The neurodiversity paradigm views neurodiversity as natural variations in human cognition that should be equally valued and celebrated (Chapman, 2022) thus challenging earlier research (and practice) that tended to take a deficit perspective and referred to ADHD, Autism, Dyslexia, Dyscalculia, etc. as disorders that needed to be 'treated' (Chapman and Bovell, 2022). Nevertheless, despite the increased awareness of the strengths of neurodivergent thinking and the value that diverse perspectives can bring to organizations (Kirby and Smith, 2021), neurodivergent people may experience discrimination and marginalization once disclosing to their employer (Baldrige and Swift, 2013; Johnson and Joshi, 2017). What is more, to date there is limited research that explores the perspectives of neurodivergent employees to gain an understanding of contextual factors that might create barriers in the workplace (Doyle and McDowall, 2021) but also about how neurodivergent people approach work in general.

This blog entry looks at neurodiversity from both an academic/research and practitioner perspective, offering some practical future directions for employers. We are specifically focusing on an aspect of our findings: how neurodivergent engineers engage in job crafting. In order to do so, we draw upon Lazazzara et al.'s (2020) job crafting process model which considers the job crafting motives, the impact of context, the forms of job crafting, personal factors and the job crafting consequences.

Our exploratory study focused on how neurodivergent engineers (all sectors, including software) experience the entire employee lifecycle (i.e., recruitment, career development and progression). We chose to focus on engineering as, anecdotally, there are many neurodivergent individuals in the profession as neurominority thinking strengths align to engineering skills, such as creative thinking and attention to detail (Engineering Council, 2022; Loiacono and Ren, 2018).

Background



Wrzesniewski and Dutton (2001) noted that the need for control over work, establishing a positive self-image and connections with others motivate to engage in job crafting, which, in its turn, is argued to enhance the person-career fit (De Vos et al., 2020) and stimulate employees' career growth (Hall and Las Heras, 2010). Employees may be proactively and/or reactively motivated to craft their jobs and that the form of job crafting depends also on contextual factors, such as organisational climate and job design components (e.g., resources, workload, demands) (Lazazzara *et al.*, 2020).

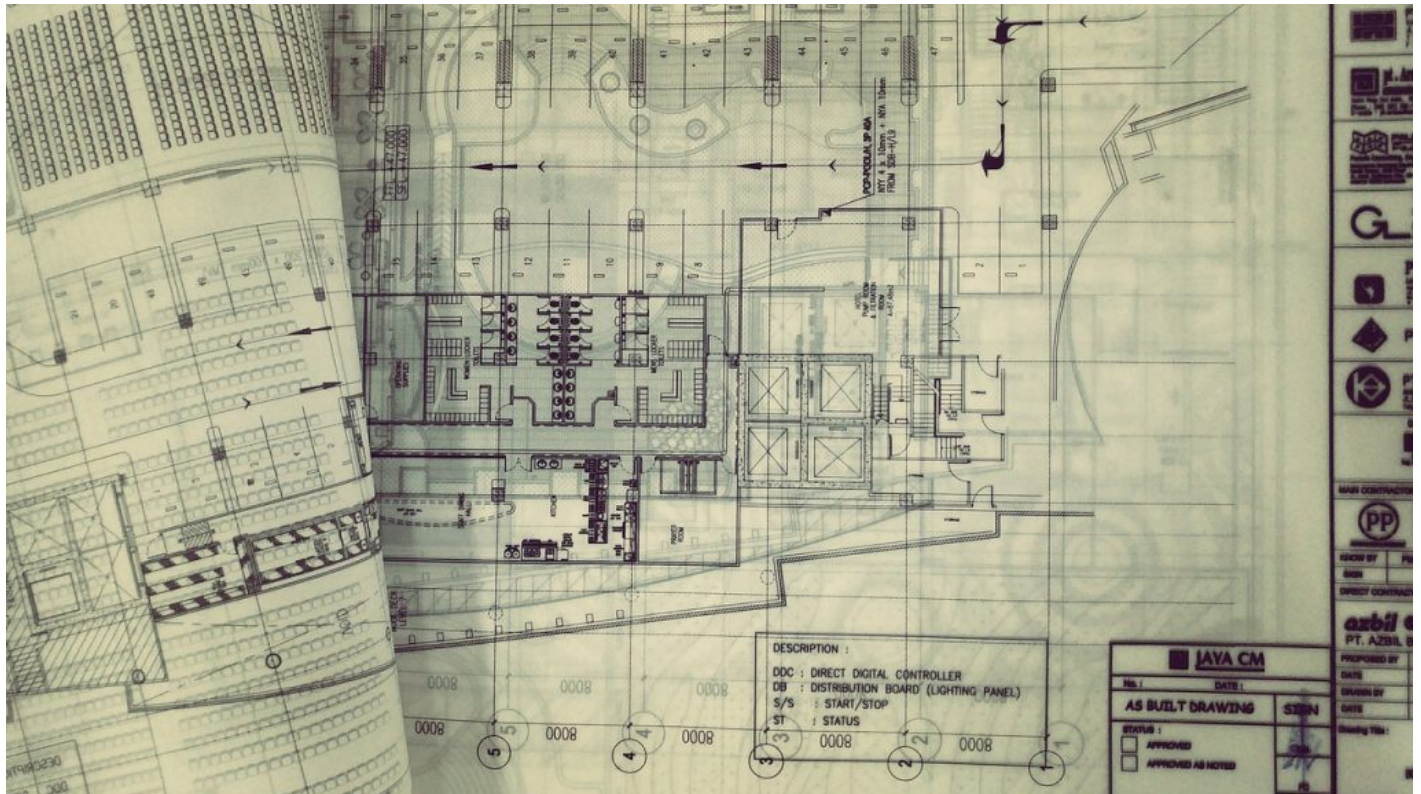
However, to date there are no studies on how neurodivergent employees might engage in job crafting. An important gap considering that neurodiverse employees are often excluded and marginalised in the workplace due to negative stereotyping (Den Houting, 2019; Patton, 2019; Priscott and Allen, 2021) and negative organisational cultures (Kapp *et al.*, 2019; Saleh *et al.*, 2022) and this might impact their self-confidence, relationships with colleagues and control over work (Booth, 2016; Sheppard *et al.*, 2016). Taking into consideration that there is little research on neurodiversity and employment (Doyle and MacDowall, 2021) this gap becomes even more pertinent. Therefore, we asked:

What processes can be identified that illustrate when and how neurodiverse engineers engage in job crafting?

How do contextual factors (i.e., organisational climate and job design) influence neurodiverse engineers to engage in job crafting?

This was a qualitative study drawing upon in-depth semi-structured interviews. We interviewed 35 engineers (i.e., chemical, mechanical, aerospace, civil, software, oil & gas), male (24) and female (11), mostly of White British, one White Australian and 2 from ethnic minority backgrounds (British Asian, British Black). Participants were mainly employed (i.e., in large and smaller organisation) apart from two who were self-employed/ contractors. The participants were recruited using purposive sampling and access was sought via personal contacts, social media (Facebook groups, Twitter, LinkedIn), support from large Engineering organisations (HR and Employee Resource Groups), the Engineering Council, and snowballing. The interview schedule was developed following guidance from Norris et al. (2020) to acknowledge the challenges that autistic participants in particular might encounter. Towards this end we have also included semantic prompting (i.e., a general prompt before asking for a specific instance) and visual prompting.

Findings



To analyse our findings, we drew upon Lazazzara et al.'s (2020) job crafting process model which considers the job crafting motives, the impact of context (supportive vs. constraining), the forms of job crafting (i.e., approach job crafting, avoidance crafting and crafting in other domains), personal factors (supportive vs. constraining) and the job crafting consequences.

The engineers in our sample seemed to engage in job crafting mostly reactively (e.g., because of pressure to behave as 'engineers' and work following a specific pattern) but also proactively (e.g., shape their careers/roles according to their strengths, use some strategies in order to improve their performance), depending on how supportive their organisational context was. However, most of them, and especially those in larger organisations, appeared to be experiencing constraints not only due to the organisational context (e.g., negative stereotyping, lack of support from HR and especially their line managers) but also professional standards (e.g., they struggled to 'fit the box' of being a chartered engineer). In some cases, line managers ruled out progression opportunities based on the stereotypical assumption that neurodiverse individuals lack the social skills needed to manage a team. The forms of job crafting that are emerging so far are: approach crafting (e.g., adding tasks they enjoyed doing more of, establishing different ways of managing their teams), avoidance crafting (e.g., avoiding networking or socialising, avoiding for going for certain promotions) but also crafting in other domains (e.g., adjusting their working hours when working remotely, changing their physical environment, etc.).

Practical Implications

Our findings can provide a set of practical implications for Engineering as a sector and organisations. Given the current skills shortage of engineers (Armitage *et al.*, 2020), it is of crucial importance that the sector adapts its practices to ensure that it attracts, recruits, and retains neurodiverse engineers through building a genuinely inclusive professional culture which is also reflected on the criteria for chartership (i.e., being less prescriptive). The key learnings for HR are:

Commitment to an inclusive workplace culture

Organisations need to move away from deficit thinking around neurodiversity and work towards a more positive and inclusive culture which in its turn, will provide a supportive context for job crafting and most importantly enhance the sense of organisational and professional belonging.

Retention of talent: revisiting job descriptions career progression criteria

Organisations need to carefully reconsider job design (e.g., Do all engineers need to approach the problem in the same way? What skills and experience are essential?) and ensure that they offer autonomy in carrying out job activities (but also support when neurodiverse employees might struggle with their work-life balance).

Performance management

All line managers should be trained in how to manage, support, and review the progress of neurodiverse employees. HR could also evaluate performance management, using a neurodiversity lens, and identify which encouraged behaviours (e.g., being 'diplomatic') or practices (e.g., networking) might impede career progression and/or influence what considered 'good performance'.

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