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## **Futures and Foresight Learning in HRD**

### **Introduction**

Organisations in the UK and worldwide face a significant future of uncertainty that is likely to continue for several months if not years. The COVID-19 Epidemic resulted in new ways of living and working, and this dynamic will continue to unfold, affecting all aspects of those working in the Human Resource Development (HRD) field. In addition, radical challenges continue to emerge from technologies, climate, environmental and socio-political sources, witness Russia's recent invasion of Ukraine and developing impacts on geopolitical relationships. Against such uncertainties, we will argue that HRD needs to embrace and include Futures and Foresight Learning (FFL) as a new addition to its field of theorising and practice. The question to consider is: How can FFL become a new feature of HRD? A key part of our argument is that the inclusion of FFL will enable HRD to add to the success of any organisation and make a vital contribution to the management of people at work.

The paper will unfold as follows. Firstly, consideration will be given to some of the debates surrounding the meaning of HRD. This will provide a brief recognition of various efforts to provide a disciplinary boundary around theories and practices that allow definition and other efforts that have defied such closure. It will also suggest that the instability of our time should also serve to disturb any comforts created and that there is a need to consider how there might be different futures for what we still call HRD in research, practice and praxis (Yawson, 2020). The paper will then consider how FFL might become one possibility for expanding the existing boundaries of HRD. . It will be argued that by characterising Futures and Foresight as a learning process, it provides new but complementary features to what is already considered as HRD. We will show that research points to how FFL can lead to organisation success and how this can be achieved. The paper will then consider how FFL provides a challenging but important addition to how we talk about learning at work and the theory and practice of HRD.

### **Meanings of HRD**

HRD has been a multi or inter-disciplinary consideration of learning in organisations for much of its history. Around the turn of the millennium, Swanson (1999) used the image of a three-legged stool to capture what he saw as the 'unique' integration of psychology, economics and systems ideas into a theory of HRD. McLean (1998) preferred the image of an octopus that could work with various disciplines, such as music, anthropology and speech communications. However, even then, it was argued that both in theory and practice, HRD required a way of seeing and understanding to reflect a multi-layered context and constant flux (McGoldrick et al., 2001) which would also allow any clarity for HRD to remain ambiguous. Others such as Lee (2001) believed that HRD should not be defined since there is a high degree of practice around the world, which made generalisation for an acceptable meaning of HRD too difficult. However, at this time, based on the perceived weakness of the professional identity of HRD, it was argued that there needed to be an agreement on the meaning of HRD and its boundaries relative to other fields (Gold et al. 2003) but, like all professions, debates and creativity about meanings and practices needed to continue. Thus, while for some, HRD centred on people, learning, and organisations (Chalofsky, 2007), an interest was developing to consider how HRD could be extended across different sectors and types of organisation, including different communities and countries. In their effort to answer the question, What is HRD?, Hamlin and Stewart (2011) examined 24 definitions of HRD. Most were concerned with workplace processes. However, there was an interest in how HRD could be used in national policies as National HRD relating vocational education and training, including lifelong learning for adults (Cho and McLean, 2004), or developing policies to tackle deprivation and social exclusion. Hamlin and Stewart (2011) also found in the definitions some similarity between HRD purposes and Organisation Development and Coaching. This suggested potential for convergence of these fields.

Interestingly, at this time, as a profession, HRD was still cast as a 'weakened profession' which had to play a subservient role to others in the workplace (Short et al. 2009, p. 421). Perhaps as evidence, following the 2008/9 Global Financial Crisis, HRD was criticised for its lack of criticality in the chain of decision-making in some organisations and was reduced to bystanders who could not use influence to change perverse practices (MacKenzie et al. 2012). Nevertheless, the meaning of HRD over the last 10 years has seen some expansion. Ghosh

et al. (2014), considering the coverage of HRD in academic journals, found 'waning' of themes such as learning and training but 'emerging' themes such as culture, work-attitudes, careers, diversity, knowledge management and leadership (p. 309). Harrison et al. (2020:213) from their analysis of HRD Masters programmes also identified a change in specialist terms in HRD programmes. Furthermore, they suggested describing HRD as a 'symbiotic profession' to denote a profession that is sustained by its relationship with contiguous fields of professional practice. . We would also add talent management and development (Devins and Gold, 2014). For Lee (2016) such expansion was evidence of its evolving and emerging nature and development based on a 'co-creation' (p.28) with other disciplines. We can add to these developments the continuing rise of what is termed Critical HRD (CHRD), which questions and challenges conventional and managerialist conceptions to promote inclusivity, social justice and equitable power relations. (for example, Callahan et al., 2015; Bierema, 2020).

The possibilities for expansion and adaption allow space for the meaning of HRD to be reshaped. This has been particularly prominent as we moved into the COVID era. A 'changing landscape' is afoot as part of shaping a new normal for HRD (Bierema, 2020; Byrd, 2021). During this period, there have been disturbances to work patterns, which is likely to continue. For HRD, the pandemic has affected how programmes were developed and delivered, shifting significantly to the use of mediation via technology, requiring virtual and remote support such as mentoring (Yarberry and Sims, 2021). Others such as McGuire et al. (2021) suggest that the disturbance of COVID provides HRD with a chance to widen its considerations to counter its apparent managerialist stance, perhaps an example of the influence of CHRD. They argue for an ethics of care approach to HRD to foster values that 'assert the primacy of people and self-interest' (p.33). Ethical practice is about themoral compass for living and making decisions – 'doing the right thing'. There is evidence of support for ethical behaviour: the integration of ethical behaviour into education via the CIPD Professional map (CIPD, 2022) and the first-ever launch of the 'Ethical Leader of the Year' (BusinessWire, 2022). Nevertheless, new patterns of working are creating tensions between what is expected from work and the experience of remote working, against which HRD practitioners need to find responses (Shirmohammadi et al., 2022).

Perhaps of great significance for HRD, both in terms of a threat and an opportunity, are the changes that were already operating before COVID but received a boost from it. Such changes are associated with the various technologies of artificial intelligence, embedded analytics, robotics, and others, forming a package referred to as the Fourth Industrial Revolution (4IR) (Schwab, 2017). Included in such technologies is the process of Machine Learning (ML), which seeks to emulate human learning through the acquisition of knowledge but by using an algorithm to make decisions (The Royal Society, 2017). . An extension of ML is Deep Learning as the capability to work through concepts within data to build new higher-level concepts (Goodfellow et al., 2016). . The advance of ML has been associated with the displacement of humans in work situation to be replaced by robots, with estimates that many occupations would change or be replaced (Deloitte, 2018). . It must be recognised that taking advantage of ML's opportunities and avoiding the negative impact requires collaboration between stakeholders to embed human values (Schwab and Davis, 2018). Harrison et al. (2020) argue that the meaning of HRD has to incorporate ML and associated technologies by the involvement of practitioners in projects of ML at an early stage. Further, this requires an evolution of the HRD role as a hybrid discipline to enable involvement in key choices about the technologies. It is part of such a move that HRD needs to embrace Futures and Foresight Learning (FFL).

### **Futures and Foresight Learning**

The anticipation or even precise prediction of what will happen in the future has been an essential feature of human thinking which has endured in human life (Bell, 2001). When life was more predictable based on seasonal cycles, there was little to learn about the future other than possible discontinuities such as crop failure, war or even the spread of disease. However, in an age of turbulence, instability and volatility, this would suggest value in a more purposeful learning process to consider future possibilities in organisations. FFL can enable organisations to prepare for events which often arrive as surprises to leaders and managers (Crews 2020), providing leaders with an ability to future-proof their decision-making (Gariboldi et al., 2021). If leaders have an understanding of different possibilities of what

might happen in the future, they are then able to provide clarity of vision and goals to others, especially their staff, as contingencies unfold. This is a crucial capability to ensure effective management of people at any time but especially during periods of uncertainty (Maran et al., 2022).

A community of scholars and practitioners has already formed a field of inquiry and practice with formal organisations such as the World Future Society, the World Future Studies Federation and the Association of Professional Futurists. There has been a growth of interest in futures, tools and techniques for practice and research within futures studies departments (Son, 2015). However, there have been ongoing difficulties relating to accepting and using futures and foresight in organisation decision-making and the view that added value can be provided (Pinto and Medina, 2020). We contend that if futures and foresight can be presented as a learning process – as FFL – there is a significant opportunity for HRD to become the delivery experts and simultaneously enhance its standing as a profession.

There have been attempts to provide definitions for futures and foresight throughout its development as a field. For example, Glenn (2002) refers to futures research as ‘the multidisciplinary study of interacting dynamics that potentially create fundamental systemic change in major areas of life over 10 to 25 and more years’. Martin (2010) traces the use of the term foresight showing a distinction from forecasting. He highlights how forecasts can provide predictions whereas foresight is concerned with understanding possibilities based on a range of factors that can shape the future. The former is based on the assumption that predictions can be justified, whereas foresight allows different and alternative ideas to be assessed and evaluated for action. Thus, FFL can provide a range of possibilities that, if key communication links are in place, will allow any organisation to revise and reshape its strategy (Fergani et al., 2020). . For example, according to Salvatico and Spencer (2019), the Disney Corporation has worked with FFL since 2012 with 15 teams to consider opportunities as it faced rapid changes in the entertainment sector. Slaughter (1997) suggested futures methods could blend with strategic management. Ahuja et al. (2005) referred to how foresight enabled a personal power of seeing provided managers with an ability for their actions to create competitive advantage. . Slaughter (2009, p.8) saw strategic foresight as ‘the ability to create



for example, Watt et al. (2019) report on the approach to the introduction of predictive policing technology, which allowed the prediction of burglary in particular locations at particular times. Based on maps produced by a data-fed algorithm, police patrols were completed at certain times, resulting in reductions of burglary. Movement along the dimension allows the consideration of an imagined but possible future and even different possible futures. FFL can consider desirable approaches and help prepare for less desirable possibilities or surprises to act as a form of early warning for difficulties, or what some have called 'canaries of the mind' (Wilkinson and Ramirez, 2010). . Harrison et al. (2018) considered surprises for HRD in light of advances by machines which suggested that by 2028, there is a limited role for HRD practitioners because learning would be bound by a machine to ensure a perfect fit with organizational need. In addition, assumptions about the future can be disrupted through provocations and counterfactual FFL by considering improbable or unpreferred events (Gordon and Tordova, 2019). . At a time when the COVID pandemic has caused significant disruptions to organisations, an important approach to FFL might be new products and services. This allows the creation of something different or an action by identifying new opportunities (Micic, 2010).

Once an approach to FFL has been agreed, Fergani et al. (2020) suggest a three stage process:

1. Scanning – the detection of trends, patterns and discontinuities by considering data from different sources
2. Futuring – using futures methods to produce outcomes
3. Reconfiguration – linking the outcomes from futuring to connect strategy and then action.

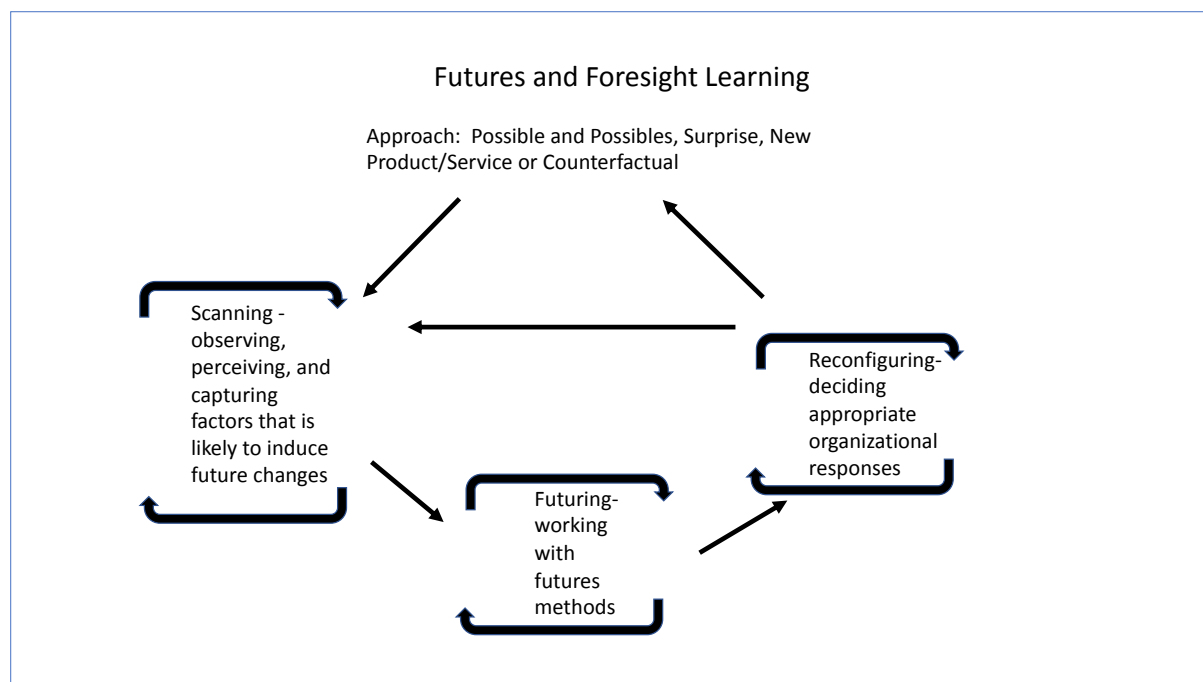
The scanning process can use common strategic management methods such as SWOT or PESTLE but purposed towards the future. Cuhls (2010) refers to the key process of Horsizon Scanning involving the systematic seeking of signals against a particular issue. Weak signals could indicate emerging or early trends, positive, negative or otherwise. . In recent years, key factors such as climate change, ecology and, of course, COVID-19 have fed into consideration. Geopolitical factors such as armed conflict and tensions are also crucial. One approach to scanning is to identify critical features of a futures issue by exploring a futures triangle (Inayatullah, 2008) consisting of Pulls – image and visions of a future; Pushes – trends and



patterns of change; and Weights – obstacles and barriers. These three points of the triangle can be used to raise questions and speculations to explore data from different sources.

The futuring process requires using key methods such as projections of possible future states, often agreed as 10 years ahead but this was reduced to 5 years during the COVID pandemic. A well-known method is scenarios which contain a narrative structure of plot and actors that result in a destination or resolution in the future. Scenarios can also be converted into scripts or theatre improvisations (Bishop et al., 2007). Scenarios are a popular method that helped the Shell oil company during the early 1970s to make key decisions ahead of competitors (Wack, 1985). . Despite the popularity, for some, scenarios can become too complex and may limit learning. They may also become too oriented towards predictions rather than understood as possibilities (Micic, 2010). . Scenarios can be presented in a reduced form by using mini-scenarios while still retaining the narrative structure and key events. The outcomes of futuring can be tested by considering underlying assumptions and stakeholders' views before being presented to decision-makers for consideration for action in the reconfiguration process. This crucial stage works with the learning from scanning and futuring that provides integration into decision-making (Pulsiri and Vatananan-Thesenvitz, 2021). It is also important the managers respond to what emerges and support FFL (Daheim & Uerz, 2008). Suppose P&O Ferries, who sacked a quarter of their workforce, 800 staff via a 5-minute zoom (2022) call in the UK, replacing them with temporary, possibly migrant, workers being paid £1.81 per hour had adopted a futuring approach to their financial dilemma. In that case, they may have taken a different stance.

It is important to stress that these three processes contain a high potential for participants and others to learn as they proceed, providing outcomes at each stage. This process can become continuous as a FFL Cycle, shown as Figure 2.



**Figure 2: A FFL Cycle**

Each stage allows iteration, adjustment and enhancement as findings emerge. For example, in Scanning, questions are posed to steer the research to reveal patterns and trends. This process can deepen and allow revision of questions and allow findings to be used to inform actions in the present. In Futuring, one method feeds another and the outcomes of one method can lead to action but also deepen understanding. A crucial feature of futuring is how talk of the future occurs in the present. . As St Augustine argued in the 4<sup>th</sup> Century AD, as humans our consciousness contains an awareness of past and future but only in the present. The past continues through memory and the future has not yet arrived but could be (Hernandez, 2016). Crucially, ideas for the future are primarily expressed in language, which also provides a connection to the past. This requires a degree of critical understanding of what is said and reflexivity by those who engaged in futuring. As Rogers and Tough (1996) suggested in their essay, *'Facing the future is not for wimps'*, FFL can be difficult and can involve a disturbance and challenge to existing meanings and worldviews. However, with appropriate facilitation, the learning gained can energise the process, particularly if outcomes lead to possibilities for decision-making and change in the Reconfiguration stage. There is a clear opportunity here for HRD practitioners and researchers.

One of the most interesting issues for organisations is whether FFL has a pay off or can improve performance thus providing value to people in organisations? These kind of questions were considered in a longitudinal study by Rohrbeck and Kum (2018) on the impact of what they called Corporate Foresight (CF) on firm performance. They used data from 83 multi-national firms from 2008 to 2015 to consider how CF could translate into action and results. They found that there was a significant link between CF and performance. Such 'vigilant' firms who had adopted CF in a systematic way were better prepared, had higher profits and improved market capitalisation. Further investigation showed that while CF's causal link to successful performance could not be concluded, the vigilant firms had institutionalised CF practices throughout their structures and made the link to strategic decision-making. By contrast those firms that had not used CF in a systematic approach performed less well. This result supported a common problem with FFL more generally where it might be needed, but application lacked continuity and institutionalisation (Rohrbeck et al., 2015). In addition, research on FFL shows gaps on the value added and the motivation to work with it successfully (Iden et al., 2017).

The failure to integrate FFL in organisations on a continuous basis and to connect outcomes to strategic decision-making, in spite of evidence to show a link to successful performance and profits, has been explored by Hines and Gold (2015). Based on a consideration of literature and the work of Hines, a professional futurist, the findings revealed three patterns. Firstly, FFL in organisations tended to be fragmented and episodic and heavily reliant on those outside the organisation who could initiate FFL processes (Godet, 2000). This often resulted in a linear approach rather than cyclical as shown in Figure 2. Even when FFL was present, and included a specialist, the findings were often viewed as threatening or intangible which could cause too much disturbance and disruption (Graves, 2007). What was missing was a capability to turn ideas that were situated in the future, perhaps 10-25 years ahead, into action in the present. Von Reibnitz (2006) highlighted the need for training of teams to enable working in all phases of FFL, especially in implementation when the team could be expanded to involve others. Beenakker et al. (2022) highlight how implementation of FFL can be prevented by differing and conflicting goals and values of participants, which need to be made explicit at the start of the process and reviewed as it proceeds. This is again an opportunity for HRD.

A key issue is the failure by various groups to give attention to the findings of FFL. Differing interests characterise all organisations and a focus on pressing issues in the present could easily squeeze out ideas for the future. People can easily claim they are too busy and need to concentrate on current plans (Bezold, 2010). The FFL story is not sufficiently powerful yet to challenge such conceptions. This has often resulted in what Hines (2000) referred to as the 'stealth positioning' of FFL where work is done but is hidden from view at higher levels and therefore integration is not considered a priority. In turn this weakens the story of FFL to show the value in the present and this requires completion of the FFL cycle on a continuous basis. This opens a gap for HRD. .

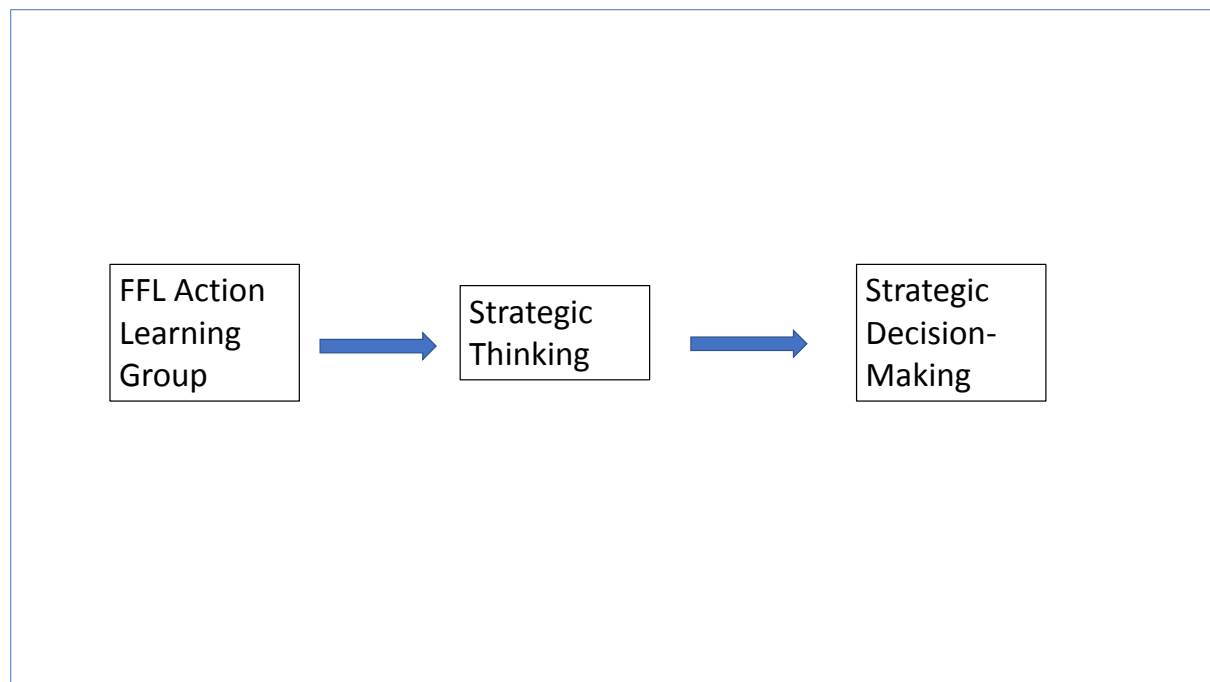
### **Towards FFL in HRD**

As we identified earlier in this paper, writers such as Lee (2001) have resisted a closed meaning of HRD based on different practices worldwide. Despite Gold et al's (2003) call for an agreed meaning of HRD to support its professionalisation, Lee (2016) sustained her position as meanings of HRD expanded with the potential for development with other disciplines. More recently, even before the COVID pandemic, it was argued that our workplaces were becoming more complex, diverse and ambiguous, driven by changing technologies, globalisation and demography (Loon et al., 2020). The arrival of the pandemic and then tragically geopolitical devastation has only added to the difficulties and uncertainties that organisations and those who own and work for them face. This creates a gap for FFL and, we argue, its inclusion in an expanded meaning of HRD.

While Hines and Gold (2015) identified some of the constraints and problems that prevented the acceptance of FFL, they were also able to present the means toward integration in organisations. This was based on some key stages. Firstly, an awareness of what FFL could bring but secondly, the importance of attracting organisational actors as clients into conversations that appreciate the potential for FFL. Such actors become internal champions for FFL who can bring others into a process to form a FFL project. This is the third stage leading to the project's completion and an ongoing iteration to capture learning and add value. If success is recognised, this provides the basis to spread the word of the capability. In

particular, if a link to strategic decision-making is provided, the value becomes recognised by others and leads to a stage of institutionalisation whereby FFL is formally considered and practice is expanded. . Interestingly Hines and Gold conclude by calling for research into how the proposal for integration of FFL can occur.

One response to this question is through an HRD intervention. Thus Gold and Pedler (2022) show how using the ideas presented by Hines and Gold (2015), they worked with insiders of two organisations to propose action learning programmes to deliver FFL. This would allow FFL methods to be introduced gradually over time but in response to issues and questions raised by the participants. By setting the programme of FFL within an HRD process such as action learning, there could be a synchronicity between the interactable problem of an uncertain and even unknowable future and learning as a process through taking action and reviewing the results. Action learning is an ongoing process with groups meeting every 5 to 6 weeks with action by participants completed between meetings. This also prevents FFL from becoming a one-off event such as a workshop or even a short project. Action learning as delivery process countered the episodic difficulty for FFL, identified by Sarpong et al. (2013). Further, as outcomes began to appear, Gold and Pedler (2022) were able to report how a case was being made for its continuation and connection to organisation strategy. . Figure 3 shows how the link can be made between FFL and strategic decision-making.



**Figure 3: Linking FFL to Strategy**

The benefit of a FFL Action Learning Group is that there is potential to provide value-added outcomes for people and organisations on a continuous basis. Through repeated cycles of the learning process shown in Figure 2 and movement to different FFL activities as shown in Figure 1, the outcomes will provide benefit if they are then considered by the creation of a strategic thinking role. . The introduction of FFL in a financial service organisation which we facilitated, quickly resulted in a cost saving of £0.5m. Such a quick return soon became part of the narrative of value-added associated with FFL and HRD staff gained recognition for this outcome.

Goldman et al. (2015) have argued for the need for developing strategic thinking skills in organisations, including key features such as scanning, questioning, critique and testing of the direction of an organisation allows new and imaginative possibilities. Linking to the concepts of moral and ethical imagination, (Brenkert 2019; Rorty 2006) the imaginative element of the process may also open the door for consideration of new ethical perspectives and possibilities. The enactment of a strategic thinking role links ideas emerging from FFL and other sources, which then can be fed into decision-making for the direction of an organisation. As there are a range of factors that can affect strategic thinking such as research and development and technological change, such factors can also be considered in FFL and

then formed for consideration in decision-making (Shaik and Dahir, 2020). This integration provides a key route to improving performance. FFL also fosters an organization's capability for creativity and innovation (Fergani, 2022). . For example, in a recent programme we facilitated, a group of architects identified a range of new income streams such as designing and developing their own furniture as part of an interiors offering and a landscaping service. FFL can also, crucially, safeguard against failure (Boston, 2017). In a recent example with a real estate business in Nigeria again which we facilitated, FFL findings resulted in a decision to reposition marketing efforts to protect against the high potential of worsening internal sales.

Burke (2021) argues it becomes crucial to link FFL to leadership so they can fulfil a 'primary role' to create 'actions, culture, and strategy for a preferred future for the organisation' (p.88). Gold and Pedler (2022) show that as a growing sign of its acceptance in one organisation, FFL was also included in the organisation's leadership programme, delivered to 5 cohorts of 15 participants in the two years before the disruption of COVID. The HRD team designed the programme with the involvement of FFL action learning participants.

If anything, the tumult of the last 15 years which is continuing puts the onus on leaders to reduce their own and staff anxiety. It is argued that leadership development is a key feature for any organisation and is an HRD sphere (Shet, 2021). If vision strategy, people and innovation are important components of leadership, the inclusion of FFL needs to become a key feature of leadership development programmes. The inclusion of these would help to meet some of the behaviours identified as critical by the CIPD for responsible leadership in times of uncertainty and crisis (Hope Hailey and Brown, 2021) and those specified in the CIPD Professional Map launched in 2021, (CIPD, 2021), particularly business acumen and insights focussed behaviour. Furthermore, FFL can contribute to the call for relational leadership that is enacted through relationships and network of relationships (Clarke 2018). Indeed, Stewart's (2015) argument that HRD practitioners are change agents who help and partner with managers in the facilitation of organizational change programmes within their own or host organizations, is perhaps more important than ever to consider in the post-COVID organisational landscape. This is why we argue that FFL has an important place. Its role within the interplay of leadership, culture and employee commitment specifically through building

commitment amongst organization members and anticipating required managerial responses to changing conditions is now key (Hamlin, 2016).

The delivery of FFL, whether via action learning or leadership development needs facilitation. If we consider the key features of FFL presented in Figure 2, it becomes crucial at each stage that a degree of guidance is required as learners explore new ideas and processes of learning. Scanning, for example, requires an ability to explore a large variety of data sources to find key trends, patterns and discontinuities. This involves familiarity with available search engines and accessible databases (Fergnani et al., 2020). Facilitators need to learn how to work with sources to obtain results. This includes access to academic chapters and many documents provided by consultants, professional bodies, and specialist agencies. The futuring phase requires working with different FFL methods and timing their presentation. There are many methods and facilitators that may initially find working with experienced futurists essential. Reconfiguration means linking outcomes from scanning and futuring to strategy. This means drawing out implications at each stage and presenting them for consideration beyond the FFL group. However, this represents a key role for HRD practitioners as facilitators since FFL can be understood as a knowledge-creation process (Heino and Hautala, 2021) that feed strategic decision-making. Further, findings from FFL can be blocked or stymied through the lack of support from others, particularly leaders who have not been part of the process. HRD practitioners as facilitators can seek to overcome difficulties and move towards building the case for FFL, as Hines and Gold (2015, p. 107) suggest 'from the ground up'. They can achieve this by presenting a narrative that persuades others of the validity of FFL by evaluating the outcomes at each stage to create a virtuous discourse. In one organisation we worked with, there was a deliberate effort to find members of the leadership team who could be involved the FFL process. This included leaders becoming participants in the FFL action learning group and highlighting FFL at the annual leadership conference through a series of TED talk workshops (repeated 8 times in one day). .

This represents a significant opportunity for the HRD profession to move from weakness towards strength. FFL may allow the required steps to improve credibility with managers of HRD interventions that are research-informed - one of the barriers that HRD has faced in bridging the 'research-practice gap' in HRD and management (Hamlin, 2015, p.16). Given the



disruption of COVID-19 and the breakdown of traditional forms of learning and dialogue between work teams and leaders, FFL is an important addition to how we talk about learning at work.

A further opportunity for the HRD profession is provided by considering the predictive pole shown in Figure 1 which relates to prediction, particularly with respect to issues concerned with artificial intelligence and machine learning (AI/ML). As advocated by Harrison et al. (2020), HRD needs to become a hybrid profession by working more closely with Data Scientists and others who develop such technologies. This requires learning by HRD professionals to talk expertly about the work and skill of others through the development of what Collins (2004) has called interactional expertise. This will allow HRD professionals to talk and influence the direction of AI/ML projects. This includes raising ethics and human values issues, which can also identify opportunities for creating collaborations between stakeholders to ensure human values are fully considered in AI/ML projects (Schwab and Davis, 2018). A crucial role for HRD as a hybrid profession is to become familiar with the way algorithms are created or 'trained' based on inputs which 'teach' an algorithm to work towards a desired state. However, there are dangers that such inputs could incorporate bias which contaminates decision-making. A well-known example was a AI/ML programme developed by Amazon to review applications made by job seekers, which discriminated in favour of men. The programme was postponed in 2018 to allow a better and more diverse process to be developed (Dustin, 2018). Training of AI/ML has to involve HRD practitioners to improve the quality and fairness of decisions (Fuchs, 2018). . Further, as hybrid professionals, HRD would be able to prevent becoming the victims of AI/ML and to become human-centred co-participants, finding opportunities for their own development and for others. For example, as argued by Ardichvili (2022), AI/ML has a potential to reduce the number of experts in organisations and also lead to more people working in isolation. In turn, this can result in reduced informal and formal learning and development opportunities. Therefore, it is suggested that HRD can consider where AI/ML might lead to a loss of human skill and expertise and focus on new possibilities for 'complex problem solving' (p. 91). . This is bound to be a progressive process as the technological capability advances but it is a process that HRD practitioners can embrace. FFL methods can lead to solutions for a wide range of stakeholders.

## Conclusion

In a recent mapping exercise of more than 3000 articles in HRD journals completed by Shirmohammadi et al. (2021) that considered the last three decades, five clusters of key topics were identified. The authors then suggest the ways to influence the future of HRD through boundary work. While their remarks are focussed principally on HRD researchers, we suggest that HRD practitioners can also draw some direction.

Thus as part of a collaboration, HRD practitioners can look beyond its current interests towards those beyond its boundaries. Here we advocate FFL and the associated issue of ML/AI where we highlight the need for HRD to become a hybrid profession. . In particular, the importance of ethics and fairness in relation to ML/AI requires HRD practitioners to take a greater and earlier interest in projects of change that involve the training of algorithms. HRD needs to become a voice that provides a critique of ML/AI fairness (Ghosh and Dasgupta, 2022).

We suggest that FFL can become an essential and value-adding offer by HRD practitioners. As has been demonstrated by research (Rohrbeck et al., 2015), FFL can be associated with better organisational outcomes such as higher profits and better preparation for problems where FFL practices are systematically and continuously adopted. Further, as we have demonstrated, FFL is a learning process with a variety of opportunities for HRD practitioners to show they are adding value. . However, as we have suggested, for FFL to become established does require to some degree, a leap of faith. . Organisations that focus on current results in response to the demands of key stakeholders often reinforce a culture for the short-term and this makes the implementation of FFL with its long term orientation more difficult to accept. Nevertheless, there is growing interest in how organisations become sustainable (Haessler, 2020) as a longer term commitment and if HRD can collaborate with this agenda, there will be a significant opportunity to apply FFL. . The outcomes that emerge from any FFL process become the evidence to add to a virtuous discourse that shifts the culture to allow both short term and long term thinking.

For HRD researchers, while FFL is not yet on its radar, we would argue that the uncertainties of the future require that more attention be given to what might lie ahead. Indeed, HRD researchers need to ask the question: What is the future of HRD research? In addition, if our call for FFL to be included in the practice of HRD, such practice will itself provide new pathways for HRD research. Further research questions might include:

- To what extent is FFL practiced in organisations and what role do HRD practitioners play in delivery?
- How does FFL impact on organisation behaviour and outcomes? What new products and services emerge from FFL?
- What new skills are required to deliver FFL?
- Can FFL enhance the status of HRD practitioners in the work place and its role in decision-making?
- How can the HRD profession develop as a hybrid profession with respect to ML/AI?

As HRD, like all professions, considers its position and value in a turbulent and dangerous world, in this paper we would like to suggest that there is space to consider FFL as a challenging but important addition to how we talk about learning at work. We have argued that in the spirit of allowing continuing divergence in the meanings of HRD, FFL offers a significant opportunity to enhance the importance of HRD in organisations and beyond. At its centre, FFL involves learning by people, groups, organisations and machines and this has to be of concern to HRD. Further, as we have shown, FFL offers those involved in HRD a significant opportunity to transfer ideas into practice that have an impact on organisation sustainability. The content of the paper provides some frameworks for application in practice by HRD professionals and we commend these as a starting point in designing FFL based HRD interventions. In addition, future research will be useful to investigate our claims from the perspective of further empirical data drawn from application of FFL in HRD practice.

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## Responses to reviewers

Thanks for your suggestions. Our responses below

## Reviewer 1

Comment	Responses
Ethics was mentioned but maybe there could be more depth here as this is a challenging issue.	We have provided more coverage of the HRD role in AI/ML
expand a little more on the implication for inaction and also blocks including the challenges to move organisations	We have provided an example of how credibility for FFL can overcome blocks by creating a virtuous discourse.
The conclusion could be developed a little more touching on culture and ethical challenges	We have developed our conclusions further and consider culture and ethics

## Reviewer 2

Comment	Responses
you need to be more convincing and specific as to how your idea will really improve the whole HRD process	We have tried to show and add to the opportunities that FFL provides for HRD and for HRD's association with FFL outcomes
this paper would have been stronger and more credible if there had been some indication of primary research either carried out or suggested	We have included more examples of work carried out with organisations.
Some of the references are fairly old eg when FFL is discussed. Is there more up to date literature on this area?	We have added several additional and recent references from futures literature
How does this link to improved performance	Apart from the longitudinal research that shows how organisations that had integrated FFL over time were able to perform better, we have also added more examples of the use of FFL to change we performance decisions.

some idea how to take this forward and what to do next	We have developed our conclusions to consider how FFL can be advanced and suggest further questions for research and practice
suggestions as to how this might help practice	We have provided several examples which show how HRD can change and improve its practice