



## Editorial

### The Intelligence of New Technologies and the Wisdom of Discernment Gideon Arulmani

One of my favourite Indian festivals is *Ayudha Poojai*. The custom focuses upon a formal acknowledgement of the tools of one's profession. This may range from the plough, the saw, the hammer and screwdriver to the pen, book, computer and perhaps, someday, even to the robot! The evolution of human work has been influenced through the ages by synergies between human effort and the creation and development of tools. In fact, one of the features that is said to distinguish homo sapiens is the sophistication of our toolmaking ability. However, with the believed onset of the fourth industrial revolution we are told that we may have worked ourselves into a corner whereby the very tools we have created have the potential to make the human being obsolete. This writing briefly traces the interface between humans and their toolmaking proclivities and draws upon the papers published in this issue of the IJCLP to highlight principles that the guidance practitioner could consider.

Paleoanthropologists conjecture that the making of stone tools could date back to more than 2.6 million years. The Oldowan style (Mode 1) of toolmaking in prehistory shows that hominids used not only naturally occurring rocks for pounding and crushing, they also chipped stone such that the finished product held an edge (Dominguez-Rodrigo, 2012). It is also probable that tool creation and use during this time was ad hoc. Spurred by the contingency at hand, hominids perhaps just made a tool and dropped it after the task was completed. Nearly a million years later appeared the Acheulean style (Mode 2) whereby tools were worked upon to create bifacial instruments that could be used for multiple tasks (Dominguez-Rodrigo, 2012). The Mousterian style (Mode 3) of toolmaking which came much later, between 160,000 and 40,000 years ago, is seen amongst our most energetic cousins, the Neanderthals. This style shows method. Stone is reduced by knapping it to a specific shape as per a preconceived mentally constructed plan. The evidence points to the possibility that toolmaking by now was not a mere hit-and-miss physical activity as seen in the earlier Acheulean technologies, but an act of cognition characterised by consideration, forethought and planning. It appears most likely that the prehistoric toolmaker had an image of a tool in mind and then systematically set about creating and forming that tool (e.g., Shea, 2003).

Over the millennia that followed and specifically during the Neolithic Revolution, work slowly transformed from a raw and primal engagement with the surroundings, to an activity that was characterised by the codification of experiences, the organisation of work activities into occupations and the transmission to others through the process of cultural learning. While technological invention now proceeded with much greater rapidity with increasingly nuanced expertise, work as a human activity became deeply embedded in human culture.

The point I am attempting to draw from these historical likelihoods is that early human engagement with work was characterised not merely by the application of intelligence but was also suffused by intentionality and purposefulness. Tools were created to meet a need and a challenge. Production was small scale and much of it was undertaken through direct, skilled, physical effort. The worker engaged with work in its entirety – from conception to completion. Control over the tool rested almost entirely with the creator of the tool.

Departures from human-centred tool creation to a production-oriented position began with the first Industrial Revolution. Power-driven machinery allowed goods to be produced at

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greater speed, in larger quantities and at significantly lower costs. However, this change in production methods also introduced automatization, which in turn required the atomisation of work into discrete units, driving a wedge between the worker and holistic engagement with production. Skilled artisans of the older order gradually became redundant as machines began to mass produce the products they formerly handcrafted. And thus the pattern of emergent methods rendering older methods “redundant” was set in motion.

In the first paper in this issue of the IJCLP, Negi and Kumar give us a succinct overview of one of the effects of that redundancy, namely, the necessity of having to take up nonstandard forms of employment (NSFE). They highlight as a guidance and counselling goal, the importance of minimising decent job deficits for those forced into nonstandard forms of work.

It could be argued that the pattern of mechanisation and automatization are but natural progressions of sophistication in human beings’ ability to create tools. Tools have remained an extension of human ability and very much under human volition and control. However, over the last two decades, this pattern has broken. We have moved ourselves beyond mere automatization to the autonomisation of work tools and processes (e.g., driverless cars). What we are witnessing today is an amoral technological evolution which could cause the forced abdication of human cognitive and cultural engagement with work. If this pattern were to continue, the challenge would be to shape technology such that it empowers people rather than replacing them.

Drawing upon two decades of experience as a teacher, Jagadeeshan in the next paper, discusses the complexities of the world our children are entering. He suggests that while we construct fantastic realities, we are often unable to distinguish between what is real and what is constructed. Robertson presents the critical realism of Roy Bhaskar and the capability approach of Amartya Sen as frameworks that could inform new approaches to career development in developing economies. From a practitioner dimension, Viray presents the findings of a quasi-experimental study of a school-based career guidance intervention. Her study shows significant improvements in career preparation status and a reduction in the negativity of career beliefs after the intervention. She makes a strong recommendation for capacity-building in the area of career guidance and counselling. Buela, Miranda and Aravind examine the Government of India’s skill development initiatives and make the point that the interface between skill development and career guidance initiatives, not only in India but in many other countries, remains weak. Paul’s report of career guidance services in Kerala provides a shining example of what can be done for the systematic delivery of career guidance services through the State.

In conclusion, going back to the practice of Ayudha Poojai, for me, the principle that underlies this ritual is that of the body and the mind coming together to create and sustain. The human being is capable of directing effort, both intellectual and physical, toward constructions and fabrications, both material and nonmaterial, that can endure for durations of time beyond the phase of fabrication and construction. By calling ourselves sapient we refer to ourselves as being endowed with the ability to discern. Therefore, any form of technology we create should progress and serve the body and mind rather than disrupt and disempower them.

## References

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