

M B Rajani, October 20, 2016

**Detectives in fictions are skilled at hunting for clues and interpreting them in creative ways. Understanding human history may be somewhat less glamorous, but is nevertheless based on the same two principles: examining a rich variety of clues and extracting as much meaning from them as possible. Past civilisations have always left material impressions of one kind or another and it is our challenge to make these ancient materials reveal their secrets before their echoes die away forever.**



One who is adventurous and loves travelling, has the stamina to work under hot sun, is enthusiastic to explore ancient materials; one who has graduate or postgraduate degrees in arts or science and is willing to break boundaries to pick up required awareness of the other domain is well-suited for a career in Archaeology.

A successful career in Archaeology involves travelling, working on the field, meticulous work that demands training, patience and big budgets, and an interdisciplinary approach. And the hard work doesn't end there, all the materials and data collected in the field has to be scrupulously documented, categorised and analysed in the lab.

In many universities, especially in India, Archaeology is a sub-discipline under the department of History, usually at the postgraduate level. Students and researchers typically study traditional archaeo-material such as epigraphy, coins and pottery using conventional methods of analysis. While these methods are extremely important, scientific developments are constantly enriching the kind of ancient materials we can regard as clues and emerging technologies help us extract new facts from them. It is difficult for traditional educational systems to keep pace with the rate of these technological advances.

Therefore, we are increasingly seeing institutions such as IITs and IIITs, that specialise in Science and Technology (S&T), delving into heritage studies and making breakthroughs in documentation, exploration and conservation using techniques such as thermoluminescence and dendrochronology for dating objects, lithic analysis of metals in the field of archaeometallurgy, and the study of archaeological landscapes using drone and space-based sensors.

Gradually, governmental, non-governmental and private institutions engaged in the documentation, preservation and conservation of cultural heritage are recognising the potential of S&T-driven techniques. Thus, the demand for technically adept and versatile archaeology degree holders is likely to grow rapidly in organisations such as the Archaeological Survey of India, Indian National Trust for Art and Cultural Heritage, educational institutions and research centres. Private and freelance practitioners who work on heritage conservation can also enhance the impact of their work using these newer techniques.

Fortunately, an increasing number of students with technical training are willing to explore non-traditional applications of technology. Unfortunately, very few educational institutions offer courses where students are exposed to Art, History, Archaeology as well as S&T disciplines. To take full advantage of the unfolding scenario, it is necessary for academic institutions to embrace 'multi-disciplinarity' not just as a buzzword, but as a genuine attempt to break artificial boundaries between subjects, and to instil these ethos in their graduates.

A recent development in archaeology research is analysing and interpreting imagery taken from aerial platforms. Humans have constantly modified their local environment, and although these changes can disappear within a few generations when observed at ground-level, they often leave lasting scars that can be observed from above. These synoptic views of landscape allow researchers to study vast areas and hunt for patterns as easily as an art historian

might examine a painting. Furthermore, satellites can view landscapes in different wavelengths and reveal hidden layers of human artefacts. Advanced remote sensing technologies allow landscapes to be viewed in a 'light' invisible to humans, and help in 3D modelling. Being purely non-invasive, this technology leaves sites untouched for the future. Remote sensing has indeed brought a whole new perspective to archaeological research.

Today, we have two groups: a predominantly older generation who feels the necessity to preserve remnants of our cultural heritage, and a predominantly younger generation with the technical skills to transform archaeology by harnessing S&T-driven techniques. Unless these two groups converge, it is quite possible that we will lose opportunities to discover and preserve what remains of our past.

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