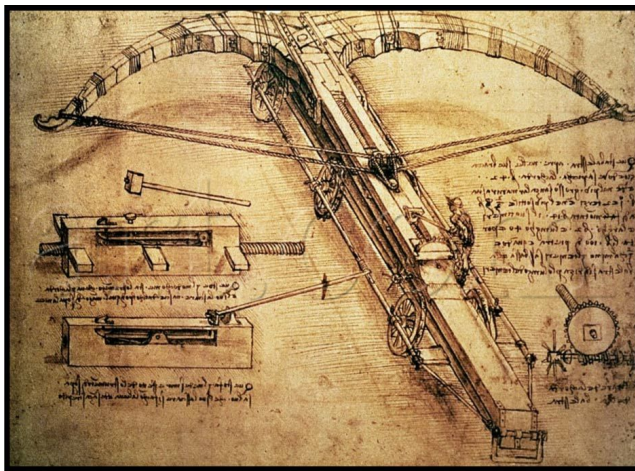


Symmetries: The Art in Science

Scientist, painter, architect, musician, mathematician, and sculptor. Leonardo Da Vinci's name is frequently used to express expertise in all these fields, rendering a distinctive portrait of a polymath. Simply put, Da Vinci is referred to popularly as an individual who uses their understanding of different fields for solving complex problems. He is renowned for famous scientific inventions long before the technology to build them existed. Parachutes, flying vehicles, and giant crossbows were sketched out meticulously in blueprints, accompanied by the details of their mechanical designs.



Giant Crossbow sketch by Leonardo da Vinci drawn around 1480. The invention never came to life because the technology to make it did not exist at the time.

Attribution: Sailko of Wikimedia

Art and science are not often placed close together in their respective methodologies. We often perceive modes of scientific thinking as having a methodological and rigid approach, while artistry and artistic ways of thinking, as a more creative, free flowing process. While these claims stem from stereotypes, there is no denying that the two share parallels - they both seek creation. New paintings, sculptures, poems, experiments, theories which are producing and reproducing themselves ceaselessly before scientists and artists alike, deny the rigid social labels of 'scientist' or 'artist'. These grouped individuals are constantly seeking innovative platforms of new expressive media. Much like Da Vinci, humans have continued to reproduce both distinction and intersection between these supposed groups.

Art provides science a way to express itself and reach out to the public. Trends see science and art merging more and more in a world where the lab is dimmed boring and unapproachable. Da Vinci's research in science contributed immeasurably to the way the public received information. His artistic representations of methodological research in mechanics and engineering produced visual messages. Visual symbols produced by

Da Vinci relayed information to his audience at the time more effectively, a goal modern day scientists could aim for too.

Following modern outputs of the expression of intersection between the art-science binary, the UCL international Genetically Engineered Machine (iGEM) team set out to answer the question “Can art be an effective tool in engaging the public with science?”. Through a short psychological survey the team found that, on average, an audience of over 70 individuals were more engaged by artwork compared to reading text. Although these results may have been expected, no official study has been conducted before to measure the effectiveness of art as a tool in scientific public engagement.

Perhaps surprisingly, results showed that although people enjoyed art more, they were more likely to seek out more information only after reading text. Nonetheless, art proved to allure people and drove curiosity up hence it may well be a powerful tool for helping the public shape education, policy making and research in science.

Following this study, researchers also analysed artists’ study of self. How differently do artists perceive themselves? In a collaboration with instagram account ‘@the_art_competition’ they asked painters, sketchers and graphic designers to create something focused around this research project. In the nature of contemporary media consumption, the popular app allowed them to reach wide audiences, an intriguing piece showed a lab experiment gone wrong whilst another focused on educating people on a specific topic, DNA. The findings of the survey and the art collated are being used to create an educational guide. Revealing of the ways art intersects with science and learning, the guide can be considered a piece of science communication, a field focused on public engagement with science.

Da Vinci’s methodological marrying of artistic methodologies to relay scientific knowledge echoed through the experiment’s methodologies. Now more than ever, his intersectional approach resonates with a new generation of research. Our 21st century is dominated by the rapid sharing of information through exciting artistic approaches underscored by convergence of knowledge, approaches, and methodologies. Perhaps it’s only when we realise the distinctions between established fields of study such as art and science, can we begin to explore the potential of intersections that exist between fields.

Giovanni Maddalena.