

CHAPTER 1

The Concept Of 'NYAWA'

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NYAWA in the national language, Bahasa Malaysia, means life. NYAWA is the acronym for Nature's Yield and Wonders of Art and is meant to depict nature's bountiful yield i.e. biodiversity and its various functions. Biodiversity as defined in the Convention of Biological Diversity (CBD, 1992) is the variety of all forms of life ranging from the species, the genes it contains and ecosystems. Article 13 of CBD on Public Education and Awareness states this as one of its activities: Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes. Malaysia is one of the 12 megadiversity countries in the World with 15,000 plant species, 290 mammals, 150,000 invertebrates, with insects being the largest group (e.g. butterflies-1200 species, moths-12,000 species), and 8,000 fishes (Latiff, 2008).

NYAWA was conceived as a new way to highlight the scientific and functional values of the current 120,000 specimens of flora, fauna and microbes deposited in several herbaria and museums in Universiti Putra Malaysia besides the living plants and animals on the main campus and Puchong Farm. They can be viewed by the public with prior arrangement. The specimens are managed centrally by the Agribio Resources Division, Putra Science Park, UPM in a database called ARMS (Agribio Resource Management System). This repository are scientific heritage collections that are of immense national pride and should be handled with the utmost respect and care. The scientists, university officers, and students have risked their lives to obtain some of these samples. Also what makes these collections even more precious are when they are collected from areas that no longer exist. That plant, or bird, or beetle, might be the only specimen to tell the natural history of the place. Some of these wonderful organisms can be endemics which means they are found only in that one place on planet Earth.

The idea behind the involvement of the Arts in this NYAWA series was 1) traditional scientific displays could be made more interesting if some elements of arts could be attached to these exhibits to make all of us understand and thus appreciate biodiversity more; 2) these exhibits can go virtual once an exhibition ends and able to be accessed through the VLMP (Virtual Library Museum Pages). The Faculty of Design and Architecture, UPM had already published and exhibited three STEDEX (Sustainable Tropical Environmental Design Exhibition) series. STEDEX showcased the research works by the Faculty members (Nasir *et al.*, 2010) which are indexed in the Design and Arts Index (DAAI) and VLMP.

The integration of the Sciences and the Arts is not as new as one might think. Perhaps nowadays the two disciplines are regarded and treated as separate. Leonardo da Vinci showed his prowess in both areas: his machines are examples of engineering ingenuity whilst his paintings are examples of his artistic leanings. Even the Oscars conferred by the Academy of Motion Picture Arts and Sciences celebrate the coming together of these two giant fields. The wonders of Superheroes and James Bond movies are brought to life only with the technical wizardry of experts in both sciences and arts. A panel made up of Zehr – author, professor and director, Centre for Biomedical Research at the University of Victoria, Cook – lead animator (SPIDER-MAN), animation supervisor (SPIDER-MAN 3), Carroll – author and senior research associate in physics at Caltech, and science advisor on THOR and Stentz – screenwriter (THOR, X-MEN: FIRST CLASS) who discussed The Science of Hollywood Superheroes illustrates this meeting of minds from different backgrounds and experiences.



When we look at botanical or zoological illustrations, these can also be works of art, but yet it has such details that enables one to describe all the parts that make up a species. The fusion of different viewpoints can further innovate both disciplines. Art and science are complementary forces that help us organise and add to our understanding of the world, they just aim in opposite directions. Science is about reduction and convergence, sifting and filtering, narrowing down, rejecting hypotheses until we get an answer. Art is about extrapolation and divergence and creation and imagination (Jeffries, 2011). The skills employed by scientists and artists are alike: PASSION, CURIOSITY, POWERS of OBSERVATION.

Snow who first coined the "two culture" cliché proposed a "third culture", one that would close the communication gap between scientists and artists. From Richard Dawkins to Brian Greene, from Steven Pinker to E.O. Wilson, these figures not only do important scientific research, they write in a way that is easily digested by popular culture. Still, they are scientists. Lehrer (2008) wrote of a fourth culture - a new movement that deliberately trespasses on our cultural boundaries and seeks to create relationships between the arts and the sciences. The premise of this movement is that neither culture can exist by itself. Collaborations such as The artist (Quinn) and Sir Sulston, one of the scientists that decoded the human genome, the Poet (Greenlaw) and Hazan - Professor of Speech Sciences, the Photographer (Yass) and Morrell Professor of Sleep and Respiratory Physiology, and the Theatre Director (Rosenberg) and McAlpine - Professor and Director of London's Ear Institute (Jeffries 2011) are evidences of this fourth culture.

The transdisciplinary approach in NYAWA which has resulted in the publication of a catalogue for nature's yield and an exhibition signifies the intermingling and dialogue between science and arts in a palatable manner to increase the public's respect and awe for Mother Nature. To quote Lehrer (2008): It's time for the dialogue between our two cultures to become a standard part of the scientific method. By heeding the wisdom of the arts, science extends to art the invitation to participate in its conversation and the opportunity to add science to its repertoire. And by, in turn, interpreting scientific ideas and theories, the arts offers science a new lens through which to see itself.

Artwork speaks a thousand words and when expressing the science behind it in forms, models and artifacts could leave a great impact of the subject that are easily portrayed. In a NYAWA catalogue, one can expect to see how art is injected into nature's yield to make many interesting and sometimes outlandish appearances. With the first exhibition on fruits held this year, NYAWA was born.....

The Imaginary Foundation has an inspiring Venn diagram T-shirt that suggests that wonder exists at the intersection of science and art. And it is perhaps at this intersection, this intellectual collision of seemingly disparate bedfellows, that something magical and unexpected happens: new patterns emerge; new connections are forged between previously unconnected ideas and inspiration reigns - Jason Silva

The NYAWA series would grow in strength to remind us all of the beauty and function that surrounds us, here in the country that we share and love – MALAYSIA. Perhaps the various crossroads would converge and a solution derived that balances both economic and development aspirations, and the preservation of the 130 million year-old biodiversity, without having to sacrifice one or the other.

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