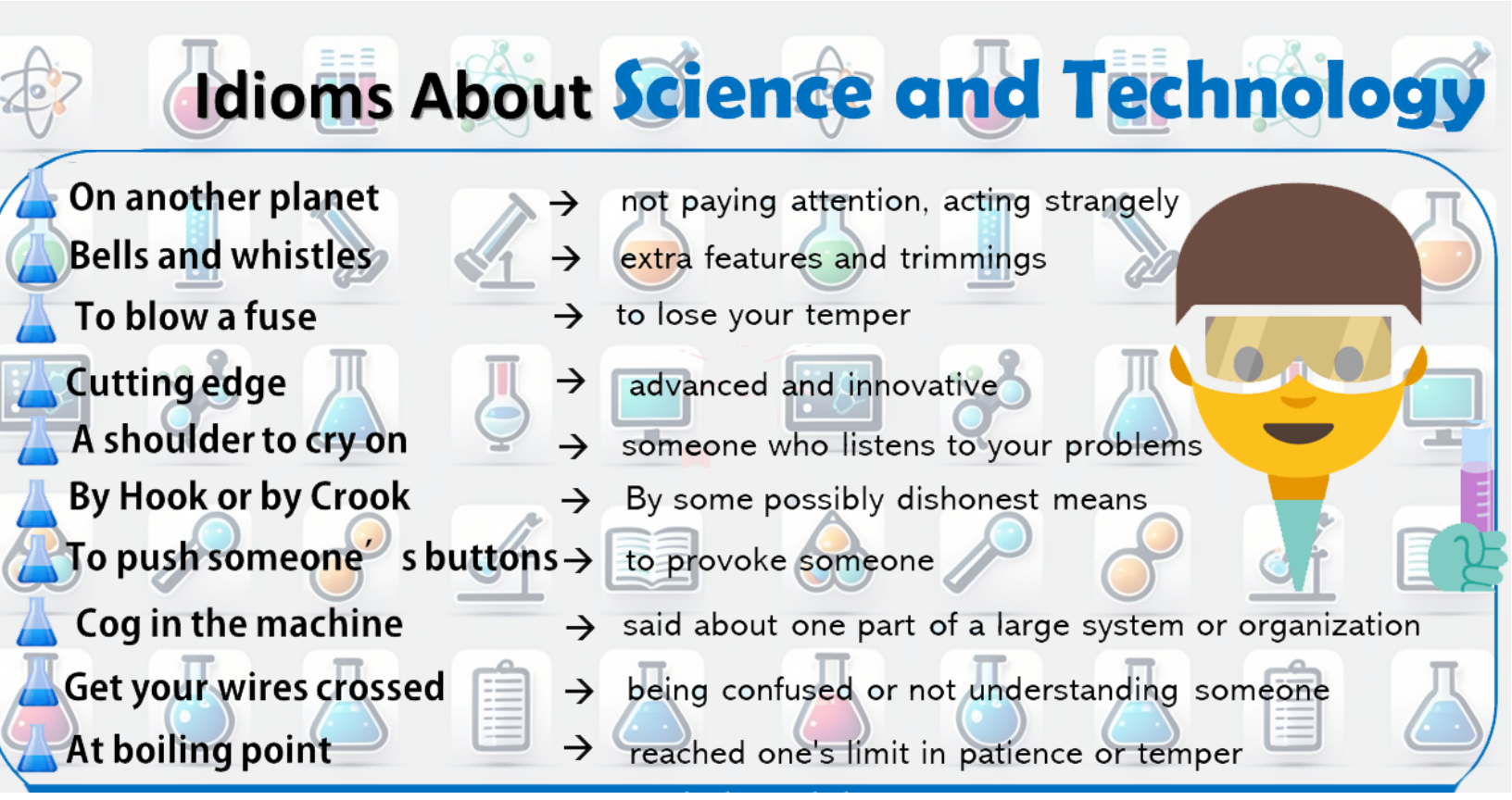
VIGYAN 2047 Volume 1 No. 3 December 2024 Pages 30–34

A CLOSER LOOK AT THE ENGLISH IDIOMS EMANATING FROM S&T

Bhupati Chakrabarti

Idioms are the integral parts of a language. Expert linguists opine that one of the indicators of the richness of a language lies in the wider use of idioms in the colloquial and written form of that language. Idioms are quite useful in conveying the real mood or for providing a punch through verbal communications. If we are really looking up for a definition of idioms Cambridge Dictionary helps us (https://dictionary.cambridge.org/dictionary/english/idiom). It says an idiom is 'a group of words in a fixed order that have a particular meaning that is different from the meanings of each word on its own'. For example if we look at the set of words "have bitten off more than you can chew" directed to someone it is an idiom that means you have tried to do something which is too difficult for you or beyond your capability. An Idiom differs from a proverb 'that is a short sentence etc. …, usually known by many people stating something commonly experienced or giving advice' (https://dictionary.cambridge.org/dictionary/english/proverb) These are used more in the conversational form. Many proverbs are parts of the local dialects and contain excellent punch though sometimes they are a bit non formal.

Some of the English idioms are actually intimately connected to the science and technology. Interestingly, these entered much later in the language. When science and technology got integrated into the social and cultural lives of English-speaking people only then these idioms could become the part of a language. So, one can easily assume that most of these idioms were not there in English language, may be three hundred years ago when S & T did not emerge in a big way to impact upon the social activities. We shall focus our attention to the idioms that have some connection to science and technology and shall try to see how for the significances of them have been carried on or in some cases have been changed.



Warning messages came through social media or through governmental campaign during the COVID19 outbreak with lines like 'be careful but do not ***hit the panic buttons***' indicating one should be careful but not be panicky. In the industries where numbers of machines operate there are some buttons to be pressed during the emergency. Pressing them is essentially the last resort and an external help is being sought since the system cannot take care of the situation. And in the same vein some newspapers wrote 'government will be able to ***pull the plugs***' to this problem soon i.e. government will be able to control it the way plugging a leaking point helps in dealing with some situations in the industries.

Familiar pretexts like 'do not blame me please I am just a '***cog in the machine***' or a '***cog in the wheel***' refer to one who is only a very small or may be an insignificant part of a large system. Strictly speaking a gear was referred to as a cog and no doubt that often constitutes a small, albeit an important part of the entire wheel. This idiom became the part of the language only after the first industrial revolution when geared wheels became known to the public. Now of course, the cog does not only refer to a gear but also to any part or component of a large machine or may be a huge setup. In fact, around the same time another idiom came into use. The idiom a *well-oiled machine* refers to a very smoothly running system and its connection with the technology is evident. 'Your team plays like a '***well-oiled machine***' is a quite common statement nowadays.

We now quite frequently use statements like '***this is not a rocket science***' indicating that the matter is not that difficult. It is well known that till today not many nations could develop rockets or launching technologies for the bodies to be sent in space. So, the area is considered a challenging one and it forms a benchmark in the difficulty level in development of science and technology. Hence if something is referred to as '*not a rocket science*' then one should appreciate that the area does not have the highest level of difficulty. Of course, this one entered the language much later time compared to the period of the first industrial revolution when the mechanical systems were the driving the industries. The rocket came down to the parlance of the common man only some sixty-five years back with the words like Sputnik, Vostok, Gagarin etc. hitting the headlines. Incidentally, one more idiom emerged in this context. Soviet Union in 1959 could send the first artificial satellite that could orbit round the earth. This was not at all anticipated by the USA and the country felt challenged in the race of space technology. This was a very important aspect during the days of cold war. The idiom '***a Sputnik moment***' refers to this situation indicating the sudden emergence of a challenging situation. Supposing in a football match the weaker team scores a goal against the run of the match and takes everybody by surprise, then it becomes a Sputnik moment for the more popular and stronger team. When the Soviet Union launched the first satellite, the Sputnik 1, and in a way caught the USA on the wrong foot into the run for the conquering the space. One can easily understand that the idiom emerged only in the 1960s.

Now look at this one. All of us know that light in free space has the highest velocity. And the distance a light beam travels in one complete year is just mind boggling. However, considering the very long distances involved in the study of various aspects of the Universe, astronomers have

found light-year to be a very appropriate unit for describing long distances. For example, if we leave out our closest star, the sun, the next nearest star is Proxima Centauri and that is 4.22 light year away. The more prominent binary stars Alpha Centauri A and Alpha Centauri B are at an average distance of 4.3 light-year from the earth. So light year essentially denotes a huge distance. The idiom '***light years apart***' is used to normally to indicate not the physical distance but the mental distance or may be the differences between the performances of two persons or that of two teams. On the other hand, the use of '***light years ahead***' indicates two entities have huge difference while applying certain yardstick. The use of the idiom indicates that the two concerned persons are really '***poles apart***' refers to significant separating distance between two poles of the earth. It is used to convey the outlook or the stands or views of two sides, may be two persons are quite contrasting. Of course, the science connection may also be traced from the opposite nature of the two poles of a magnet.

On the other hand, when two persons or two systems are in complete agreement with each other on their views, the situation is referred to as '***same wavelength***.' The alternative expression in this regard is '***in tune with***' indicating full concurrence or complete matching. One can note that the matching of wavelength more precisely indicates the proper tuning between two suitable vibrating bodies. And that may lead to a resonance. People of same group or those with similar beliefs are referred to as of *same color*, but one can appreciate that a color refers to a narrow range of wavelengths but not an exact wavelength. So, the matching between two entities is more precise and perfect if the wavelengths match. The idea could enter the language with the development of scientific knowledge and understanding of this precision only.

We come across challenging situations in life and need to apply all our skills and abilities to handle those. This is often referred to as having an '*acid test*' and this literally refers to the confirmatory tests for different radicals in chemistry. In an idiomatic use, this indicates some sort of a very important test that one will have to undertake and the success in the test will prove her worth. A sentence like; 'scoring on this pitch will prove to be ***an acid test*** for this batter' indicates that it would be a conclusive prove of his ability as it happens in a chemistry laboratory where the confirmatory tests for the identification of some suitable radicals involve an acid test.

If some takes up any project or comes up with an idea that is already well-known it is often referred to as '***reinventing the wheel***.' This indicates that one of the oldest known technologies that human being developed in prehistoric age and which is still in use need not be presented as a new one. Apparently, one should not try to come up with something very old and well known with a different packaging. Frontline technology is referred to as '***cutting edge technology***' keeping in mind the sharp edge of the cutter tool used in a few machines to give the desired shape to a piece of metal. Once again this refers to a technology in use for a long time.

For other situations one can provide more such expressions through idioms. If we say 'the delay in the arrival of the student '***blew the fuse off***' the teacher,' that indicates that the teacher has become very angry. If we compare the situation when the fuse of an electrical circuit blows out due to excessive current passing through the circuit, we shall be able to appreciate the sense the idiom carries. A rather simple sentence like; 'the statement of the student regarding his absence pushed the teacher to her '***boiling point***' indicates that the teacher reached the limit of her patience

or temper. If one gets too tired to complete a work, or say, if someone's business fails to acquire the right kind of momentum then it makes people comment, about the person or about the business that '***has run out of steam***.' This looks rather straight forward although the steam locomotives are getting more and more out of our sight. However, the stopping of a locomotive because of inadequate production of steam i.e. for the paucity of fuel i.e. coal is so iconic the idiom still provides the desired punch. Interestingly the term 'momentum' came in physical science in 17th century when Newton introduced his three laws of motion. This refers to the product of the mass and velocity of a body. However, the gain in momentum is associated with the application of force. So, the use of the phrases like 'gained momentum' or 'lost momentum' have taken the stage in a big way although with different connotations. We now write 'voters' footfall has ***gained momentum*** after 9 am' or 'with the improvement of weather'.

In the electrical installations it is very important to keep each segment of the wires insulated from the other wires. In general, the wires do not cross and even if they cross that is done with special care so that they remain electrically insulated from each other. So, the idiom to '***cross the wire***' essentially refers to a highly undesirable and a very dodgy situation. A statement like 'Biman got his wires crossed with his good old friend Suman' essentially indicates a very bad, may be a quarrelsome situation. In a more or less similar situation the proverb '***don't push my button***' is also applied. A machine starts running when a suitable button is pressed. This is like a final step for putting the machine into action. So, if someone is saying, 'you are going too far, please don't push my buttons' that essentially is some sort of a final warning before the altercation starts. This comes in the form of an advice with the message of not making anyone too much annoyed by crossing the limits.

There are idioms specially underlines how science is different from other vocations so far as the perfection is concerned. For this anything that is brought '***down to science***' is very important. A sentence like he has brought his batting '*down to science*,' refers to a very high degree of perfection that has been achieved and that is what is normally observable in science. It also indicates that this sort of accomplishment comes only through repetition; tenacity and dedication, the stuff science and technology is composed of. Another idiom '***fire on all cylinders***' refers to a situation when everything is working in a nice way and things are going on full swing. Once again, the idea came with the newly developed mechanical machines in 17th century after the first Industrial Revolution. The situation refers to first Industrial Revolution where the power to a machine could be drawn from steam engines with fire on the boilers and machine showing the best possible degree of performance.

Finally, some of the idioms whose meanings are so obvious nowadays that one really does not need to explain them. These have entered our language from the everyday use of modern gadgets like computers, laptops, Internet, mobile phones and many more 'apps' associated with them. And more recently robots and artificial intelligence and data science etc. also have entered our vocabulary. Idioms like ***'recharging one's battery***' (relaxing to get back the energy) or the head is like a '***filled up hard disc***' (no more matter can be put in the memory), or at the '***click of the mouse***' (very quickly). Sometimes a senior person is referred to as a '***silver surfer***' for his or her ability to handle the Internet quite efficiently with silvery hair on the head.

Interestingly once an S&T based idiom becomes the part of a language the presence of

that becomes very natural though the technology might have become obsolete. That is why we use the idioms based on the S&T of first Industrial Revolution along with some the ideas involving the field of IT or Information Technology. And sometimes people at large look at the scientific laws in a much wider perspective and turns it into a proverb but are often used out of context. Look at the Newton's third law of motion. People use it in so many contexts like social, economic, medical, political and what not! It is meant to be a very important law of nature but its abuse; may be overuse in non-related context has become a part of human nature. And that has given it the status of a proverb for all practical purposes. It appears with the advent of science and particularly the technology we shall have more idioms based on S&T not only in English but possibly in different Indian languages also. ◆

References

1. *https://dictionary.cambridge.org/dictionary/english/idiom*
2. *https://www.usingenglish.com/reference/idioms/cat/19.html*
3. *https://www.spellzone.com/blog/Idioms_about_Science_and_Technology.htm*

***Dr Bhupati Chakrabarti** is a retired faculty from the Department of Physics, City College, Kolkata and was the General Secretary of IAPT from 2013 to 2018. He can be reached through chakrabhu@gmail.com*

...From page 29

exception. Attending workshops, conferences, and hackathons dedicated to quantum computing can provide opportunities to connect with industry experts, researchers, and like-minded peers. These events are not only platforms for learning but also for showcasing your skills and ideas.

Participating in collaborative projects through these networks can help in gaining insights, mentorship, and even potential job offers. Many global and regional quantum computing communities offer resources, events, and discussion forums to support enthusiasts and professionals alike.

By following these pathways, aspiring quantum computing professionals can build a robust foundation and gain the necessary skills to thrive in this transformative field. The combination of academic knowledge, practical experience, and professional networking ensures a well-rounded approach to breaking into this exciting and rapidly expanding domain.

Future of Quantum Computing in India

Quantum computing is still in its infancy but has immense potential. In India, industries like telecommunications, banking, and pharmaceuticals are exploring quantum solutions to address challenges in data security, optimization, and complex simulations. The growing synergy between academia, industry, and government initiatives is paving the way for India to lead in quantum innovation.

A career in quantum computing offers an opportunity to be at the forefront of technological advancement. As India ramps up its efforts through the National Quantum Mission, the field promises exciting challenges and rewarding opportunities for those with the right skills and passion. Whether you aspire to be a quantum researcher, algorithm developer, or systems engineer, the quantum revolution awaits your contributions. Embrace the challenge and be part of a future that's truly quantum! ◆

***Dr Zahid H Khan** is an advisor at the Zaheer Science Foundation in New Delhi and a former Professor of Physics at Jamia Millia Islamia, a Central University in New Delhi. He can be reached via email at zhkhan1948@yahoo.com*

***Dr Nakul Parashar** is the CEO of Shanti Foundation. He can be reached at nakul@shantifoundation.global*