

## Innovation needs to be stimulated in Brazil by means of patent applications

The ability to innovate and develop new products and services is a touchstone to gauge a nation's entrepreneurial spirit. Entrepreneurship means creating exchange value for a nation, often through technology development. Hence, developing technology—as measured by the number of patent application submissions—should be a top priority in Brazil.

Although technology and science are discrete subjects, they are so intricately entwined that they are aptly under the jurisdiction of the Brazilian Ministry of Science and Technology. The achievements attained by this Ministry over the years has paid handsome dividends. (Incidentally, it was established in 1985 to fulfill a commitment by then President Tancredo Neves towards the Brazilian scientific community). Our scientific output has grown dramatically. In dentistry, for example, Brazil ranks 4<sup>th</sup> in worldwide scientific production. Today it is often more convenient for a foreign dentist to pursue their studies in Brazil than the other way around, given the number of outstanding graduate programs available throughout the country.

However, there seems to be a split between the production of science and the production of technology in Brazil. Our number of patent applications is still negligible when compared with developed countries. Our history is partly to blame for this discrepancy. Our agricultural vocation was foreshadowed by Portuguese explorer Pero Vaz de Caminha's letter, in his first description of the New World, where he stated that "... the land is so fertile that anything can be grown on it...". As a result, when Brazilian companies were confronted with the challenges of globalization and free markets, they were unable to prove their mettle and innovative spirit in the face of highly competitive products and production processes. Their immediate alternative was to further the incorporation of foreign technology, thereby increasing the share of non-national components in Brazilian manufactured products and rendering patents virtually unnecessary.

The Brazilian academic community had to grapple with this dearth of technological entrepreneurship by lopsidedly prioritizing scientific production. The nature of the energy

expended in scientific production was cleverly explained by Thomas Kuhn,<sup>1</sup> who believed that the results achieved by normal science are significant since they help to enhance the accuracy and scope that can be applied by current knowledge—or paradigm. Most often, however, science is not engaged in shifting paradigms or giving rise to innovations, changes in behavior or thinking. Scientific attention is not focused on technological innovation.

We can address this issue in more pragmatic fashion by visiting the website of the Brazilian National Institute of Intellectual Property ([www.inpi.gov.br](http://www.inpi.gov.br)). When you query the patent records using the word 'orthodontics' in the search field, only 16 files pop up. The first dates back to 1977 and the last one to 2005. This is the same number of files found with the same parameters in the U.S. Patent & Trademark Office ([appft1.uspto.gov/netahtml/PTO/search-bool.html](http://appft1.uspto.gov/netahtml/PTO/search-bool.html)) within the 35 days that preceded the writing of this editorial. Using the same keyword, thirty-five days in the U.S. are equivalent to 28 years in Brazil. And let us not forget that nowadays orthodontics is a scientific area in which Brazil plays a leading role.

This scenario calls for improvement. We are hard-pressed to foster the development of national technology through educational and industrial policies. It is a fact that many Brazilian universities encourage and support the filing of patents, and additional measures are currently under way. Nevertheless, greater emphasis should be placed on this issue. One viable option would be to trade program completion projects—monographs, theses and dissertations—for patents. Such projects are invaluable assets in the CVs of researchers, and graduate course coordinators are expected to act accordingly.

Go ahead and innovate!

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## REFERENCES

1. Kuhn TS. A estrutura das revoluções científicas. 7<sup>th</sup> ed. São Paulo: Perspectiva; 2003. p. 58.

**ERRATUM:** The article disclosed on issue v. 15, no. 2, p. 82-86, Mar./Apr. 2010, by Vanessa Nínia Correia Lima, Maria Elisa Rodrigues Coimbra, Carla D'Agostini Derech and Antônio Carlos de Oliveira Ruellas, was published under the wrong title. The correct form is "Frictional forces in stainless steel and plastic brackets using four types of ligation".