

## Science, Technology, and Japanese Nationalism

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BY JOEY SLUCHER

Today, Japan is a technological powerhouse, home to companies such as Sony, Toshiba, and Fujitsu. However, Japan did not develop into a world leader in technology until its total defeat in World War II. After Japan unconditionally surrendered, the Japanese lost their sense of national pride and identity.<sup>1</sup> Before their defeat, the people believed that Japan was the leading country in Asia, and that they were considerably more powerful than any other Asian country. After defeat, however, this belief was not as common. The lack of technological prowess during the war period was obvious to the Japanese people with the dropping of the atomic bombs on Hiroshima and Nagasaki. But not long after, Japan was once again filled with national pride. Instead of this pride being focused on military conquest, it was channeled through views of peaceful technology. Technology became the new source of national pride and identity in the wake of total defeat and devastation. How and why did this become the mechanism through which Japanese people could regain national pride and identity? Japanese high-tech manufacturing has become one of the largest and most competitive markets in the world, of which Japan is proud. This development was in part due to government policy, reconstruction of social ideology, economic recovery, and consumer culture in post-war Japan. Japan regained national pride after World War II through becoming a competitive

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<sup>1</sup>Kenkichi Koizumi, "In Search of 'Wakon': The Cultural Dynamics of the Rise of Manufacturing Technology in Postwar Japan." *Technology and Culture* 43, no. 1 (2002), 40.

technology power house that identifies itself with moving forward.

## **Technology and Science before World War II**

The history of technology in pre-war Japan before the black ships of Admiral Perry was focused on importing military technology. During the Edo period, while Japan was mostly secluded from the west, some technology, such as guns, was imported.<sup>2</sup> Although, unlike the post-war, the technologies imported were not being improved in Japan. This shows that the post-war advancement of technologies is not a long-standing historical tradition. Japan did not start improving imported technologies until the Imperial period. Real success improving technologies occurred, to a much lesser degree, in World War II and in the post-war period. Therefore, the manufacturing technology boom was new during the war period.

Pride and interest in technology in Japan was not a new phenomenon in the post-war years. In the beginning of the Meiji era, the Meiji leaders saw the importance of technology in the process of modernization and sent missions to western countries to learn from them.<sup>3</sup> The entire Meiji Restoration was triggered by a more technologically powerful force driving Japan out of seclusion. After the attack on Pearl Harbor, many Japanese people believed the attack to be a great success and were proud of their aircraft technology.<sup>4</sup> And while the main source of pride was in the supposed bravery of the military for attacking such a

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<sup>2</sup> Koizumi, 33.

<sup>3</sup> Mikiso Hane, *Japan: A Short History* (Revised Edition edition. Oneworld Publications, 2013), 86.

<sup>4</sup> Koizumi, 40.

large powerful country, the people still believed the fighter planes played a large role. While these experiences are limited, they show a few things. One, the government of Japan, ever since the Meiji era, actively sought out technology for the national defense and war capabilities of Japan.<sup>5</sup> Two, pride in technology was present before the post-war technology boom, embedded within the framework of imperialistic-nationalism. It was not until the post-war period, however, that Japan could say it became a world leader in technology development. During the Meiji and Showa eras, Japan wanted to build a “rich nation, and strong army.” This slogan became the foundation for technological development in pre-war Japan and guaranteed that the priority of development be on military applications.<sup>6</sup> It was not until after the war, however, that technological development was restricted to the civilian sector and therefore more closely tied to everyday Japanese people.

## Occupation

After Japan’s unconditional surrender in World War II, many citizens linked the defeat to the backwardness of technology and science in Japan. Prime Minister Suzuki Kantaro encouraged the people of Japan to build a new national identity and work towards better technology, which he considered

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<sup>5</sup> Richards J. Samuels, *Rich Nation, Strong Army”: National Security and the Technological Transformation of Japan*. (Cornell University Press. 1996), 33.

<sup>6</sup> Samuels, 42.

Japan's greatest deficiency in the war.<sup>7</sup> Intellectuals at the time encouraged Japan to build a new national spirit linked to technology. In the immediate post-war period the state-led nationalism was abandoned and the Japanese identity was lost. The void left by defeat in the war led to an abandonment of the state-led nationalism and the rise of nationalism through technology and science.<sup>8</sup> Furthermore, the defeat compared Japanese technology to American technology, culminating in the dropping of the atom bombs on Hiroshima and Nagasaki by the technological powerhouse, America.

Many Japanese believed the victory of the United States to be a victory of its technology over Japanese spirit, meaning they believed that a war could not be won with spirit alone. Even though they were defeated by a coalition of countries, including ones from Asia with inferior technology, Japan still saw the United States as the only victor because they would have learned a different set of lessons if they did not.<sup>9</sup> Japan did not face up to its war past, instead both the United States and Japan saw it easier to look towards the future, as shown by not trying Emperor Hirohito for his part in the war. In this future, technology and science was seen as a way to rebuild and repair Japan's economy. As Prime Minister Suzuki Kantaro claimed, people blamed their defeat on inferior technology, Japan saw the weakness in their previous war identity in technology and not the atrocities committed in the name of Japan. This set up the perfect environment for technological improvement and

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<sup>7</sup> Morris Low, "Displaying the Future: Techno-Nationalism and the Rise of the Consumer in Postwar Japan." *History & Technology* 19, no. 3, (2003), 200.

<sup>8</sup> Low, 197.

<sup>9</sup> Low, 200.

nationalism, emerging from that improvement, soon after the war.

Yukawa Hideki, a theoretical physicist and the Japanese Nobel Laureate inspired many Japanese people and helped them get through the sobering defeat. Meijio University Professor Akasaki Isamu, who also received a Nobel Prize in physics, stated in a recent interview that in an “era marked by defeat in the war,” Yukawa winning the Nobel Prize helped him “get better.”<sup>10</sup> In the same news article, *The Japan News* claimed Yukawa “carried the heavy of expectations of a nation defeated by war on his shoulders.” Yukawa not only inspired many people to go into the field of physics, he also attracted international attention to Japan. Only four years after the war, people were still searching for a new national pride. Yukawa’s Nobel Prize gave the Japanese people something to be proud of. This was a Japanese physicist, who was able to keep up with the West in physics with his research. He inspired many Japanese people with his award, and helped pave the way for technology as part of the Japanese national pride.

### **Trains and National Pride**

Japan’s national pride in technology has had a very close relation to the development of trains. In the post-war years Japan became the first country to implement a national rail system that uses only all-steel train cars. After the war, the Japanese people were freer to insert themselves into the system and have their voices heard. During the occupation people began to criticize the

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<sup>10</sup> “Hideki Yukawa: The Man That Inspired a Nation.” *The Japan News*. Accessed April 26, 2015. <http://the-japan-news.com/news/article/0002059447>.

trains of Japan and their wooden design as being very dangerous to the lives of Japanese citizens. The trains were so dangerous that many accidents occurred that left hundreds of people injured or dead. After one incident *The Daily Yomiuri* claimed that this “murderous train shames our Japanese population” and that these problems “exist nowhere else in the world.”<sup>11</sup> Ordinary citizens involved themselves in the decision making processes and pushed for better trains, leading to Japan adopting all-steel car trains.<sup>12</sup> The shame from dangerous trains was linked to the Japanese identity. Wartime engineers joined railway companies and, using their wartime experience, developed lighter, safer cars.<sup>13</sup> This shows that in the shame of defeat, Japan heavily criticized its own science and technology. This example of developing and implementing the all-steel car demonstrates that this shame brought about the desire to improve, and in this the identity of the Japanese people was linked to technology.

The Development of the *shinkansen*, or bullet train, was steeped in nationalistic sentiment. Japanese National Railways (JNR) supported the development of the *shinkansen* with nationalistic overtones and established the “High-Speed Rail Study Club.”<sup>14</sup> It is no coincidence that the Tokaido bullet train was launched before the opening of the Tokyo Olympics in 1964. Japan wanted to proudly show the new technology to the world, and there was no better time to do so than the 1964 Olympics. The games gave Japan the opportunity to show off

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<sup>11</sup> *The Daily Yomiuri*, 23 December 1945.

<sup>12</sup> Takeshi Nishiyama, “War, Peace, and Nonweapons Technology: The Japanese National Railways and Products of Defeat, 1880s-1950s.” *Technology and Culture* 48, no. 2 (April 1, 2007), 295.

<sup>13</sup> Nishiyama, 298.

<sup>14</sup> Nishiyama, 193.

new train technology to boost their own moral as a global technology provider. Later in the 1970s, Fukunaga Kenji declared in a diet session that “Japan is advancing far ahead of Western nations, which keep watch on our linear motor technology.”<sup>15</sup> He also stated that “I believe Japan will lead the technology as absolutely the best in the field, the Japanese races needs to demonstrate its latent strength as this national project grows.” This is one example of the nationalistic rhetoric was used in the development of the *shinkansen* in the 1960s and 70s. The development of the *shinkansen* was seen by many as Japan passing western technologies and therefore western countries themselves. Using nationalistic rhetoric became the tactic to gain funding, but it also caused the *shinkansen* to become a national project with which people could align themselves. Many politicians supported the funding of the *shinkansen* by integrating Japanese national identity with the development of the *shinkansen*. By developing the linear motor technology Japanese people were displaying their strength as a nation. This type of rhetoric clearly shows how manufacturing technology became a part of Japanese identity and national pride during the post-war years.

In 1981, French engineers successfully established a new high-speed world record. At the time, this caused many in Japan to respond with nationalistic encouragement to regain the title. Countless people voiced their concern and claimed that the *shinkansen* is no longer the world’s best train.<sup>16</sup> Nationalists called for Japan to catch up and surpass the West once again, similar to the pre-war sentiment. Train technology was wrapped into Japanese identity. Therefore, when the French engineers produced a faster train, politicians and engineers framed the

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<sup>15</sup> Nishiyama, 193.

<sup>16</sup> Nishiyama, 195.

Japanese identity as inferior to the West. In response, these groups increased the amount of nationalistic rhetoric they used. This indicates the role technology played in the Japanese identity after World War II. The rhetoric used by politicians incorporated elements of nationalism and technology. Technology, and in this specific case, train technology, became focal points of pride for post-war Japan. The imperialistic state-led nationalism that existed before the war was replaced by pride in peaceful technology.

### **The Japanese Government's Role in Nationalism through Technology**

The immediate post-war economy of Japan was in shambles and in need of serious reform. The Ministry of Foreign Affairs saw technology as important for the Japanese economy given Japan's lack of natural resources.<sup>17</sup> From this, the Ministry of Foreign Affairs talked about how the only way for Japan's economy to be sustainable was through developing and exporting advance technology. Also, they aimed to maintain an edge on technology so that Japan could stay competitive in the world market. The Japanese government clearly showed their support for Japan becoming a technological power house in their planning of the economy. This government support was very important for Japan to develop national pride through technology. It nurtured a competitive spirit that would later become very prevalent in the development of faster *shinkansen*.

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<sup>17</sup> Ministry of Foreign Affairs. 'Economic Stabilization and Reconstruction' *Sources of Japanese Tradition, Abridged: Part 2: 1868 to 2000*. Edited by W.M. Theodore de Bary. et. Al. Abridged 2nd edition. (New York: Columbia University Press, 2006), 357.

This shows that early into the post-war years the Ministry of Foreign Affairs was fostering the national pride from manufacturing technology that Japan would have just several decades after total defeat. In the goal of developing exportable goods through technology advancement came a national focus that became a part of the Japanese identity and therefore Japanese nationalism.

The Japanese government has focused on technological development and followed through on making Japanese technology competitive in the Global Markets for exportation. In 1969, the government began planning to close the gap on computer technology with the United States.<sup>18</sup> While Japan was beginning to catch up to the United States in computer technology the government helped fund this endeavor to hasten its success. In 2005, the government planned 10-year “national goals” to strengthen Japanese competition in the global markets.<sup>19</sup> Some of the fields focused on were biotechnology and nanotechnology, fields in which Japan competes with the United States and Europe. What both the 1969 and 2005 case have in common is the competition between Japan and other countries. The government is still dedicated to securing Japan’s place as a technology powerhouse and promoting competition between

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<sup>18</sup> Stuart Griffin, “Letter from Tokyo: Computers and the Gap.” *Science News* 95, no. 9 (March 1, 1969), 222.

<sup>19</sup> “Govt Sets 10 Technology Goals Development in Critical Areas Aims to Strengthen Competitiveness.” *The Daily Yomiuri (Tokyo)*, January 9, 2005.  
<http://www.lexisnexis.com/lxacui2api/api/version1/getDocCui?lni=4F6M-SJW0-0 01X-J1WW&csi=145202&chl=t&chv=t&hnsd=f&hns=t&hgn=t&oc=00240&perma=true>.

Japan and other countries. While at first the goal was to catch up to the west, the goal now is to stay competitive. The government has allowed for nationalism through technology and science to flourish through the funding of research. The rhetoric used for getting support for these plans often uses phrases such as “national goals,” which helps to reaffirm technology as an essential part of Japanese pride, identity, and nationalism

### **Consumerism’s Role in Nationalism through Technology**

In the immediate post-war period, much of the national focus was on rebuilding Japan, devastated by American bombings. Something that astonished many Japanese people, during this time, was how much material wealth America had.<sup>20</sup> In his article “In Search of ‘Wakon’: The Cultural Dynamics of the Rise of Manufacturing Technology in Postwar Japan,” Kenkichi Koizumi argues that this is the reason manufacturing technology became a focus of Japan and apart of Japan’s national pride. In the post-war vacuum created by the loss of national pride and spirit, the focus on material wealth led to a focus on creating not only things Japanese people needed and wanted but also that the world wanted. Survival of Japan focused on exporting goods as shown by the Japanese Government’s plans for the economy. This meshed with the search for a new Japanese identity and pride. In order for Japan to survive, it had to import food and the other products it needed and, develop its industries and export cheap good-quality products. The American model of consumerism gave Japanese people something to strive for and therefore the development of

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<sup>20</sup> Koizumi, 41.

technology became incredibly important for Japan's survival and merged with the Japanese identity.

After World War II, Japan could no longer produce military technology and became a country focused on economic development through consumerism. Technological development was concentrated in the civilian sector. The national goals of Japan went from "Rich nation, strong army" to just "rich nation."<sup>21</sup> In the mid-1950s household electric appliances, such as television, washing machines, and refrigerators grew in popularity. This consumer boom in Japan forced manufacturers to develop new products that could compete first on a domestic market and eventually on the global market. The new consumer-oriented Japan turned owning things like home appliances from something reserved for affluent people to a part of the overall culture. This signified the importance of developing newer and better technology for the consumers of Japan. Not only did consumerism become a part of the national identity, it also drove development of new technologies for the domestic and global market. Development, likewise, nurtured technology becoming a part of the Japanese national identity. Because domestic markets wanted newer and better technology, these technologies that were made for Japanese people could be sold in the global market, giving the people of Japan a source of national pride.

Consumerism also played an important role in nationalism through technology in television commercials and other advertisements. By 1960, Sony said in a TV advertisement that its portable TV was another reason for Japan to be proud of itself.<sup>22</sup> Another example, as seen in Figure 1, is a Sony tape recorder magazine advertisement that was released in 1954.

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<sup>21</sup> Low, 203.

<sup>22</sup> Low, 203.

The top of the advertisement reads *Nihon no unda sekai no marku* which translates to “Japan’s mark on the world.”<sup>23</sup> The phrase is another example of how advertisements played into the nationalism through technology present in post-war Japan. This

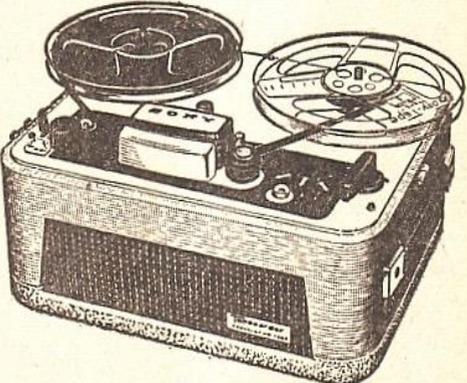
日本の生んだ世界のマーク

**SONY**

スーツケースの  
気軽さです……

トランジスタを使った、ご家庭向の  
テープコーダー101型……大き  
さも一段と小さくなり、手軽に持ち運  
びができます。しかも、小型ながら  
大きい7型のテープがか、りますの  
で最大2時間は録音できます。歌や  
踊りの練習、語学の勉強、音楽鑑賞、  
8ミリのトーキーなどに最適です。

ソニー株式会社 東京都品川区大崎局 私書函9号 ・カタログ呈



ご家庭用101型  
¥29,800. (付属品一式共)

外形寸法 (33×27×17.5センチ)



Figure 1. A Sony magazine advertisement for a tape recorder that was published in 1954. The top of the advertisement reads “Japan’s mark of the world.”

signified the rise of nationalism through technology in Japan.

<sup>23</sup> “*Mukashi no kouku*” (Old Advertisements), Yahoo Japan, (accessed May, 4, 2015)  
<http://blogs.yahoo.co.jp/kemukemu23611/folder/1534423.html?m=1c&p=7>

Right after World War II, Japanese people felt they did not have anything to be proud of. These TV and magazines advertisements, which came only 15 years after the war, show how technology already fueled nationalism and identity by 1960. Japanese manufacturers repeatedly declared that Japan was gaining international attention from its advancements. Japan's electronics and appliances were continuously linked to Japanese culture, which gave Japan its technological strength. It did not matter that many of these technologies were not technically created by Japan but actually imported and then improved. After the products entered Japan, they became Japanese and the improvements made to them gave the Japanese people something to be proud of.

## Conclusion

On November 20th, 2012, Shintaro Ishihara, a very nationalistic and conservative politician spoke at the Foreign Correspondents Club. In this talk he emphasized Japan's role in military technology. For example, he claimed that "when you look at a U.S. military plane cockpit now, all the parts are made in Japan" and that because Japan "made a decision to provide technological support" to the United States during the Gulf War" the United States was "able to win this conflict easily."<sup>24</sup> While Ishihara is an extreme conservative, this shows another shift in technology, science, and nationalism in Japan. Now in Japan, with the recent reinterpretation of Article 9, technology

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<sup>24</sup> Shintaro Ishihara at the Foreign Correspondents' Club," 2012. video clip, accessed May 5, 2015, YouTube, [https://www.youtube.com/watch?v=wdAo-ozkSzk&feature=youtube\\_gdata\\_player](https://www.youtube.com/watch?v=wdAo-ozkSzk&feature=youtube_gdata_player).

development might once again enter the military sector and be developed for national security. Ishihara, who at one point was the governor of Tokyo, showed his support for Japan to start developing technology for military applications. During this conference, Ishihara also stated that “Japan has developed tremendous technologies of its own.” He promoted nationalism through technology and even has distrust for other countries technological and scientific advancements. He also stated that he distrusted American genetically modified food (GMO).<sup>25</sup> Throughout this talk, Ishihara praised Japanese technology and dismissed other countries’ technologies by either outright saying he did not trust them or claiming that Japan has greatly helped them. As Article 9 is debated, the role of technology will be debated as well. Therefore, the nationalism of technology as it is in Japan is being reshaped for the contemporary context.

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<sup>25</sup> Shintaro Ishihara at the Foreign Correspondents’ Club,” 2012. video clip, accessed May 5, 2015, YouTube, [https://www.youtube.com/watch?v=wdAo-ozkSzk&feature=youtube\\_gdata\\_player](https://www.youtube.com/watch?v=wdAo-ozkSzk&feature=youtube_gdata_player).

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23.html?m=lc&p=7](http://blogs.yahoo.co.jp/kemukemu23611/folder/1534423.html?m=lc&p=7)

*Shintaro Ishihara at the Foreign Correspondents' Club*. 2012.  
YouTube, Accessed May, 4, 2015,  
[https://www.youtube.com/watch?v=wdAo-  
ozkSzk&feature=youtube\\_gdata\\_player](https://www.youtube.com/watch?v=wdAo-ozkSzk&feature=youtube_gdata_player).