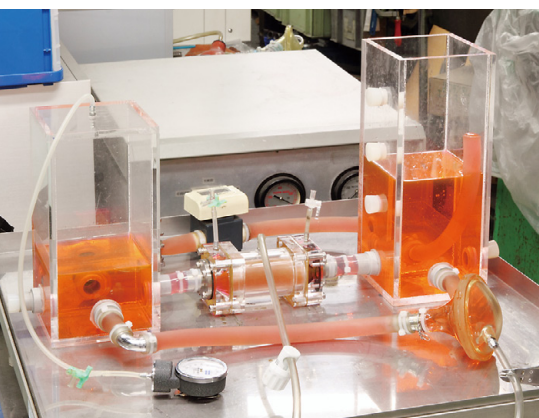


# 人とのつながりを ものづくりに生かす

## HARNESSING TIES AMONG FACTORIES FOR MONOZUKURI

有限会社 安久工機 代表取締役 田中 隆 さん

Mr. TAKASHI TANAKA President Yasuhisa Koki Biomechanics Co.



機械式血液循環シミュレーター  
Mechanical blood circulation simulator

世界でもトップクラスの技術力を有する中小の町工場が軒を連ねる東京大田区。ピーク時には、9,000を超えた工場が、受注先企業の工場海外移転による仕事の減少、後継者難などで工場を閉めてしまい、今ではその数が半分以上の約4,000に減ってしまっている。そんな中でも、独自のアイデアと人とのつながりを大切に「横請けネットワーク」で躍進を続けている人工心臓の開発で有名な有限会社安久工機社長の田中隆さんを訪ねてお話を伺った。

Tokyo's Ota-ku is well known for its many small and medium-sized neighborhood factories possessing world-class technological strength. At the peak there were more than 9,000 such factories in the district, but in recent years many have been forced to close down as a result of a drop in business as larger companies, the source of their work, transferred their plants overseas, the difficulty of finding people willing to carry on the business, and other factors. The number has now dwindled to less than a half, around 4,000. Nevertheless, these neighborhood factories are still making headlines. IHCSA Café visited Yasuhisa Koki Biomechanics Co., a local firm that continues to grow and is especially famous for its development of artificial hearts, and spoke with its president, Mr. Takashi Tanaka. Mr. Tanaka plays a leading role in the local Yokouke Network (Cross-Contracting Network), which places great importance on original ideas and ties among factories.

### 中小工場の優れた技術を結集

▶ 田中さんの大切に「ものづくり」とはなんですか。

うちの会社は昭和44年に父親が設立して以来、大企業の単なる下請けとはならず、大手ではできない試作品や各種装置の設計・製作を行ってきました。

試作・開発に伴う材料の加工では、金属から樹脂やゴムまであらゆる材料に対応しています。これが可能なのは、独自の優れた技術を持った50を超える協力会社（技術者）に仕事を請け負ってもらっているからです。私たちはこれを横請けと呼んでいます。

私の役割は、技術と技術を結びつける「コーディネーター」、実際のところは、なんでも屋の「コンビニ」みたいなものですけど。

クライアントと協力会社の両方に対して、思いやりという配慮を忘れずに仕事をしています。時には、クライアントに対しても言うべきことは言いますし、協力会社からは積極的に意見をもらうようにしています。ものづくりに妥協はしません。

### ものづくりとは使う人の身になって考えること

▶ 安久工機の開発製品をご紹介します。

大学院を修了し安久工機に入社する前の5年間、国立循環器病センターで人工心臓の研究開発に携わっていました。それ以来ライフワークとして取り組んで開発したのが「機械式血液循環シミュレーター」という人工心臓の性能・耐久性や血液の流れなどを調べる試験装置です。これを使うことにより動物実験を減らすことができます。

### GATHERING OF OUTSTANDING TECHNOLOGIES POSSESSED BY SMALL NEIGHBORHOOD FACTORIES

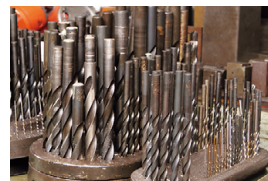
▶ What is the monozukuri (craftsmanship) that is so important to you?

Ever since my father founded our company in 1969, rather than simply scrounging work from large companies, we ourselves have been involved in the design and manufacture of prototype products and various devices that large firms cannot make.

In the processing of materials required for prototypes and product development, we handle all kinds of materials, from metals to resins and rubber. This is possible because we farm work out to more than 50 cooperative companies and engineers with their own outstanding technologies. We call this *yokouke*, or cross-contracting.

My role is to act as a coordinator linking one technology with another. In practice, I serve as a kind of handyman, or convenience store if you like!

In dealing with both clients and cooperative companies, I try never to forget to show thoughtfulness and consideration. At the same time, though, sometimes I say what has to be said, even to clients, and I ask cooperative companies to actively give me their opinions too. When it comes to *monozukuri*, I don't compromise.



### MONOZUKURI MEANS STANDING IN THE USER'S SHOES

▶ Please introduce some products developed by Yasuhisa Koki Biomechanics.

In the five-year period from completing graduate school to joining Yasuhisa Koki Biomechanics, I was involved in the research and development of artificial hearts at the National Cardiovascular Center. Since then, my lifework has been the development of the mechanical blood circulation simulator, which is a test device to investigate the performance and durability of artificial hearts, blood flow, and so on. By using this device, it is possible to reduce the number of animal experiments.

最近開発した商品で、視覚障害者の方に大変喜んでいただいているのが、筆記用具の触図筆ペン「みつろうくん」です。蜜蝋をインクとしているので、描いた線が盛り上がり固まることによって、手で触ってイ



触図筆ペン (みつろうくん)  
Mitsuro-kun tactile drawing pen

メージを知ることができます。ほとんどの素材の用紙にも描け、消したければヘラで削れるので何度でも修正が可能です。

既に、一部の盲学校で利用されていますし、染織家の協力を得て触図筆ペンを使つたろうけつ染め (みつろう染め) 的なものも試んでいます。

面白い商品では、道路工事などの標識に使う「折りたたみ式カラーコーン」があります。使用しないときは折りたためるので、幅をとらずに車のトランクに積むことができます。

ものは、使う人の身になって考え作ることが大切です。そして商品は市場で認められて、初めて良いものと言えるのです。

## 異文化交流でリフレッシュ

▶ オフのときは何をされていますか。

異文化に興味があるので、ホームステイのホストをしたり、自分が海外に行ったときは一般家庭にステイをして、その国の文化や習慣などを深く知るようにしています。



海外からの視察団  
A delegation visits from overseas.

以前、メキシコはカマルゴという北部の町にホームステイをしたときの話ですが、ホストは中年のご婦人で、先方に送った私の調査書に「アルコールが好き」と書いておいたところ、「100年」と言う名のテキーラを2本、用意してくれていました。1本はステイ中に飲んで、もう1本は持って帰りなさいと。



断水はあるし、停電はあるわで、日本と比べるとインフラはまだまですが、住んでいる人たちはすごく楽しそうで生き生きとしていました。

便利で何でもそろっている日本と、不便なことが多いが人間性が豊かなこの町とどちらが幸せなのかと、考えさせられました。

## たかが町工場、されど町工場

▶ 大田区の工場の今後と田中さんの抱負をお聞かせください。

世界でも稀で優れた技術を持った工場が、まだまだたくさんあるので、そのノウハウを集結させてニッチなところで新しい製品を開発していくことだと思っています。

個人的には、事業の傍ら町工場の裾野拡大のために、地元の小・中学生を相手に出張授業や工場実習などを行って、子供たちにもものづくりの楽しさを伝えています。

自分は何ものづくりが生きがいなので、死ぬまでこの工場でものを作り続けているでしょう。

Products that we have developed recently include a tactile drawing pen called Mitsuro-kun, which has pleased visually impaired people immensely. This pen uses beeswax as ink. Drawn lines rise and harden, so visually impaired people can get an image by feeling them with their hands. The pen can be used on paper of almost any material, and repeated corrections are possible simply by scraping off the beeswax with a spatula.

This tactile drawing pen is already being used in several schools for the blind, and with the cooperation of dyeing and weaving artists, we are also experimenting with batik-like techniques (beeswax dyeing) using it.

Another interesting product of ours is the foldable color cone for use as a marker in roadwork and so on. When the cone is not being used, it can be folded up and stored in the trunk of a car, where it does not take up much space.

The important thing about *monozukuri* is to make products from the point of view of the people who are going to use them. A product can only be described as good when it gets accepted in the market.



◀ ろうけつ染め (みつろう染め)  
Batik dyeing (beeswax dyeing)

道路工事などの標識に使う▶  
「折りたたみ式カラーコーン」  
Foldable color cone used as a marker in roadwork, etc.



## FINDING REFRESHMENT IN EXCHANGE WITH OTHER CULTURES

▶ What do you like to do in your free time?

I am very interested in other cultures, so I like to be a home-stay host. And when I go overseas, I like to stay with ordinary families so that I get a good understanding of that country's culture, customs, and lifestyle. Once, when I was visiting Mexico, I stayed in a private home in the town of Camargo, which is in the north of the country. My host was a middle-aged woman. In my profile sent beforehand, I had written that I liked alcohol, so she had two bottles of tequila, named "100 Years," waiting for me. She said that one bottle was for drinking during my stay and the other was to take back as a souvenir.

The infrastructure in Camargo is not as good as Japan's. There are water stoppages and power stoppages. But the people who live there seemed to be very happy and full of life. I couldn't help but wonder which is the happier place: Japan, where life is convenient and people have everything, or Camargo, where life is often inconvenient but people are very warmhearted.

## ONLY NEIGHBORHOOD FACTORIES, BUT VERY IMPORTANT ROLE

▶ What are the prospects for the small neighborhood factories in Ota-ku, and what are your own ambitions?

There are still many neighborhood factories in Ota-ku with outstanding technologies that are unique in the world, and I think they will continue to pool their know-how and develop new products for niche markets.

Personally, as well as my work, in order to expand the scope of neighborhood factories, I would like to hold visiting lessons and factory practice for local elementary and junior high school children and convey the enjoyment of *monozukuri* to the young people.

*Monozukuri* is my joie de vivre, so I will most likely continue making things at this factory until the day I die. □

写真・君和田富美夫 Photos・Fumio Kimiwada

## PROFILE OF Mr. Takashi Tanaka・田中隆



1955年10月 東京生まれ  
1982年 3月 東京農工大学大学院工学研究科修了  
1982~86年 国立循環器病センター研究所 人工臓器部 研修生  
人工心臓・血液循環シミュレーター等の設計・製作に従事  
1986年 (有)安久工機入社  
顧客からの試作開発品、自社開発品の設計・製作  
2006年 代表取締役役に就任  
2008年 3月 早稲田大学理工学専攻博士後期課程/単位取得退学

Yasuhisa Koki Biomechanics Co. 有限会社 安久工機 <http://www.yasuhisa.co.jp/> (Japanese only)

Oct 1955 Born in Tokyo.  
Mar 1982 Graduated from the Graduate School of Engineering, Tokyo University of Agriculture and Technology.  
1982-86 Trainee in the Department of Artificial Organs, Research Institute, National Cardiovascular Center; involved in the design and manufacture of a blood circulation simulator for artificial hearts.  
1986 Joined Yasuhisa Koki Biomechanics Co. Engaged in the design and manufacture of prototypes for customers and the company's own products.  
2006 Appointed president of the company.  
Mar 2008 Entered the doctoral course in life science and engineering of the Faculty of Science and Engineering, Waseda University; left the university after acquiring the necessary credits.