# Chapter 5
# Event-Linked Communication

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In August 2015, one of our partners in the regional government pointed out to us that the Marathon of Eindhoven that year was subsidized based on an innovation clause. "Would it not be nice to see if AiREAS and the Marathon organization could combine sports and air quality?" Organization of the Marathon for the coming years is in the hands of a Belgian sports organization, Golazo, which took over the responsibility from a special local NGO. The first contact with the general manager was positive and a multidisciplinary meeting was soon scheduled. Time was pressing, as the Marathon traditionally takes place in the second week of October. Golazo had already introduced innovations of their own and welcomed the partnership with AiREAS, but could not invest resources other than the available exposure and infrastructure.

As mentioned before, it is a challenge for AiREAS to reach the large civilian base of the city about the idea of them taking co-creative responsibility for their own quality of life, health and the air we breathe. Linking our objectives with the massive physical running exercise of the Marathon could give us the opportunity to see if event-related communication would be more effective than the standalone invitation to take responsibility. The context of the Marathon is much more in line with health and breathing than the daily context of our reigning social economical paradigm.

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The first multidisciplinary encounter, AiREAS - Marathon

## 5.1 Call for Co-creation

Within the scope of AiREAS, a call among all ILM and POP partners was made to bring a number of multidisciplinary talents into this communication channel and opportunity. "No budget" does not mean anything when dealing with creation; on the contrary, it stimulates co-creation, especially when one is surrounded with top talent. The core asset of a creative community is not money, but rather the combined talents and willingness to connect in value driven initiatives of the participants. This, in fact, is the message of the STIR Foundation, the claim that activated citizens are the main value of a city. Buildings and streets are mere instruments for producing value-driven interaction. In our perception they only represent value when in use.

The marathon challenge within the context of the POP2 of civilian participation and response to air quality was one of open experimentation and reciprocity in the diversity of possible returns. Following the AiREAS POP approach, three lines of action developed:

- Communication in an event-related environment
- Medical research among athletes and their supporters
- Value-driven entrepreneurship.

From a communication point of view, the Province of North Brabant showed a willingness to help develop materials, as long as the research and results were utilized on a provincial level, rather than merely being local event-related. From a sustainocratic point of view, this is a logical approach. The Marathon is not our goal, health and healthy air is, with the Marathon as means. This set the tone for our investigation, which also involved the cities of Helmond and Breda in the challenge. It was clear to us that Marathon runners do not just come from Eindhoven,

but also from other regions. They train where they live, so involvement of a broader geographical scope beyond Eindhoven was certainly desirable. It also connected to a broader recreational philosophy of peer 4 regional development, connecting urban and rural infrastructures in such a way so as to stimulate sport, recreation and physical exercise.

In this study, we have already concluded that modern people spend about 90 % of their time indoors while sitting down. Even outdoors, we spend most of the time sitting in or on vehicles. Sitting is now being called the "new smoking", the next major health hazard that our lifestyle has developed. When we realize that we consume 30 kg of air every day, the context of sitting down indoors versus physical exercise outdoors provides interesting research opportunities and insight into the development of our health and lifestyles in general. The Province is working now with the Health Deal, but in essence, 9 out of 10 executive decisions still result in health reduction and pollution. This has already been referred to as the perverse reality of an era in transition, but it is certainly one to be taken into account. Resonating with health is a learning process in which many variables interact. Our AiREAS participation in the Marathon was our first chance to take a look at a totally new world and was a potential eye-opener for policy makers, citizens and entrepreneurs.

Enthusiasm grew within the AiREAS team, and our proactive "can do" attitude confused the commercially-oriented marathon organization more and more. AiREAS relates to the higher purpose of health, which leads us, and treats all partners, including the Marathon organization, as equals. As our ideas became more concrete, so did the demands on the organization for facilitation. Whatever we were given as support was gratefully integrated into our own evolution. The communication challenge was coordinated by Jean-Paul, and the medical one by Eric, while the value-driven entrepreneurial challenge appeared everywhere.

## 5.2 Communication Challenge

AiREAS has its own source of information that can be made relevant to the Marathon challenge: historical and real-time air quality information. Also, our accumulated expertise became relevant to both the Marathon organization and the Media. AiREAS reasons from a perspective of regional health and shared responsibilities. The Marathon and the Media had different interests of their own:

- Marathon organization: How does Eindhoven compare to Beijing? Can a focus on healthy air bring in top athletes who want to break world records?
- Media: A sensationalist approach based on highlighting possible negative (the city council discussed the AiREAS call for a carless Sunday at the governance level) and positive (will we break a world record this year?) consequences of the AiREAS alliance.


One of the information banners created for the Marathon

For communication, we again distinguish between information supply (making visible the invisible) and actual communication. The first is unidirectional and the second is interactive, with a focus on health involvement and measureable progression.

1. Informative

   (a) Air quality during Marathon 2015 in Eindhoven
   (b) Air quality comparison with Marathon Day in 2014
   (c) Air quality information from other areas of the world, e.g., Beijing
   (d) Medical health findings from those same areas
   (e) Innovative actions for healthy air (banners, blogs, etc.)
   (f) Informative interaction with the media.

2. Communicative

   (a) Communicative interaction with the media
   (b) Interaction with athletes and supporters
   (c) Interaction with visitors
   (d) Interaction with sponsors and organizations
   (e) Workshop (3rd of November)
   (f) The Brabant context.

Within these lines, we would be able to see if we could positively stimulate the people and positively affect the environment with measureable results. The communication team was developed for the purpose of interpretation and publication of specific Marathon-related air quality and health insights, and the accumulation of video material and interviews and interaction with the media. The team consisted of:

Jean-Paul Close—supervisor, media contact and researcher
Andre van der Wiel—camera team, together with his sons
Hein Kuiper—CityTV
Jason Clarcke—Fontys student and interviewer.

## 5.3 Medical Challenge

Eric de Groot, together with his POP and professional team, set up a temporary lab. A call was sent out to the participating runners to get them to participate in medical research equivalent to what we had done in the POP1 earlier that year with the 40 volunteers described in Chap. 2. Again, the objective was to look at health and lifestyle aspects of the participants and try to relate this to the quality of the air. By lining up all research activities, the results could be compared.

There were also differences.

- The intake interviews were done by members of Eric's own organization.
- A German product developer, Dr. Lutz Kraushaar, used the Marathon to test his brand new software and method of charting the vascular aging of participants by applying only 4 non-invasive pressure points.
- Pierre Cluitmans had acquired TomTom watches, so the runners would each carry one during the race.
- Pierre also enlisted a university student studying electrotechniques to assist him with the HRV measurements.

The medical research team ultimately consisted of:

- Dr. Eric de Groot—supervisor, assisted by 2 members of his team
- Dr. Pierre Cluitmans—HRV and TomTom watches, assisted by a student
- Dr. Lutz Kraushaar—vascular age charting, assisted by his wife.

Recruiting participants was easier this time because of the context-driven alliance with Golazo. A call was made through Golazo's e-mail list and the response was instantaneous and quite good. We even had to disappoint some people because our capacity of 20 individuals had been fulfilled. This proved to us again that

connecting people through context is much more effective than cold calls that have no multiple interaction on a personal level. What does this mean? It proved much more effective to address combinations such as sports/air quality, environmental affiliation/air quality, study direction/air quality, physical exercise/health, sports/health/air quality, etc., than simply air quality and health. People tend to connect their own To Be and To Do selectively, through a concrete, meaningful interrelationship between the two. The reciprocal "what's in it for me?" becomes relative to the reward coming from the To Do, not necessarily the moral To Be. This would lead us yet again to the conclusion that the issue of "health and air quality" is a regional leadership issue, managing the societal To Do impulses in relation to the To Be leadership. On the other hand, this would also mean that polluting commuter cultures formed out of the socio-economic interests of labor can be attributed to a lack of core value-driven leadership focused on managing the wrong culture and priorities. Linking communication to sport, health and air quality was the right type of leadership, with the Marathon serving as the podium.

## 5.4 The Day of the Marathon

The announcement of the alliance between AiREAS and the Marathon had already drawn the attention of the Media. To our surprise, we found that the finish line had been built right at the location of one of our measurement stations. In terms of media attention, this was excellent, especially because it was also on the doorstep of the hotel where all the sponsors had gathered.

The Airbox had a prominent position

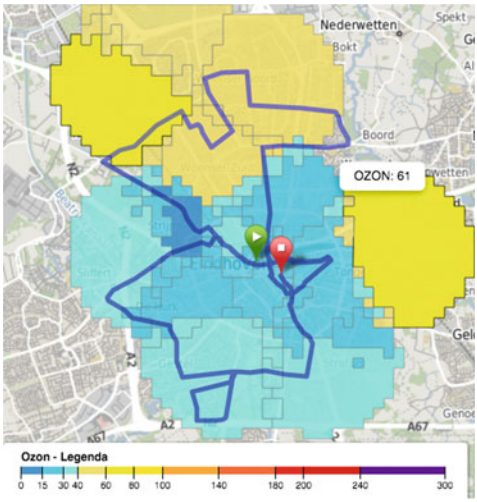
During TV and radio interviews, I experimented with messages that called for attention to air quality in relation to the runners. The call to avoid BBQ-ing the evening before and the suggestion to introduce a "carless Sunday" to honor the event had particular resonance. This became apparent through the many personal

reflections I received from people in my own surroundings who recognized me from the TV appearance, as well as sports people who mentioned the call when interviewed during the event. Later, Golazo came to us with the curious feedback that one of the major sponsors, DLL, had cancelled their large sponsor barbecue and had organized something else to entertain their guests. All these lines of feedback showed the power of purpose-driven, event-related communication.

On the day itself, the response to this type of communication was even greater than it had been during the week. This seems logical from the perspective of context. When an interview with a "leave your car at home" message is heard while someone is commuting to work, the resonance is different than it might be while supporting your son, daughter or wife while they engage in extraordinary physical exercise. The moment in time and the circumstances at that instant also determine the degree of individual perception and receptiveness to information.

We also experimented with banners and stickers to visualize our presence during the Marathon, but time was too short to get our message well-integrated into the organization. The Marathon as an event is still set up from a business perspective and never from the ideology of a contribution to societal health. Co-creation was limited to the level of awareness of the challenge and the willingness to co-invest. Golazo offered their channels and infrastructures and AiREAS did their own thing.

Organizing such a big event is an enormous effort, involving 23,000 athletes, 200,000 spectators, 400 reps from sponsors and 1500 volunteers.



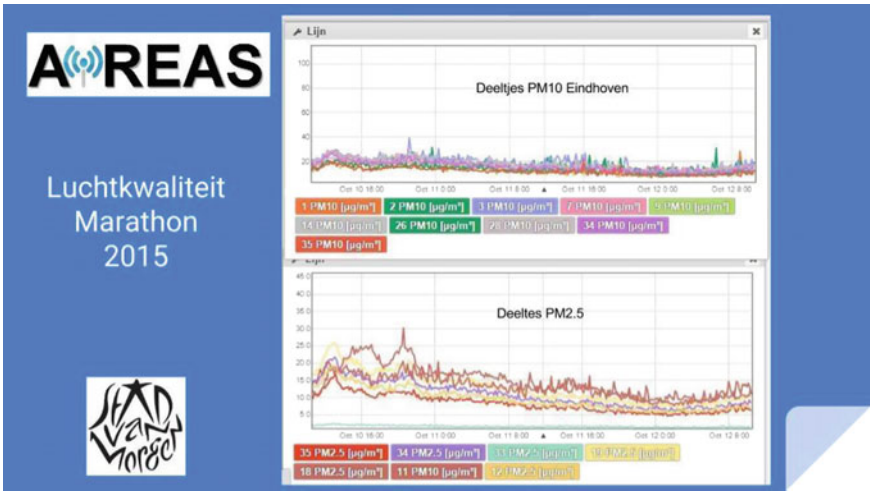

This image shows the Marathon route through town with Ozone levels mapped across the image

AiREAS's higher purpose could not take the lead at this stage, since the entire organization had already been set up. We had to resign ourselves to whatever we could get in terms of space and integration. Golazo gave us a spot in the hotel among the sponsors to tell our story. For the medical research, we received a number of square meters in the exhibition hall where the runners would gather before starting. With great creativity, the AiREAS medical team installed themselves and interacted with this environment, also a totally new experience for us.

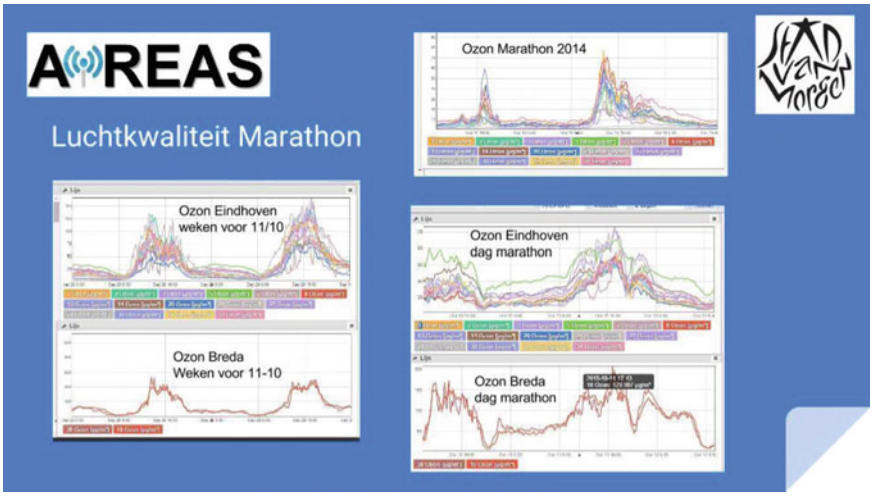
## 5.5 Air Quality

The Marathon day itself was clear and sunny, with a blue sky, an excellent temperature for sports and a healthy start from an air quality point of view. It seemed that the call for attention to this point of view (no cars, no bbq's) had worked out well. This is impossible to confirm, of course. It is already difficult to move around town with a car when the major part of it is blocked for the Marathon. The verbal discouragement is probably a minor factor compared to the practical discouragement of the road blocks.

From PM10 and 2.5 perspectives, we see that the day started out with an average of about 25 micrograms per cubic meter (μg/m$^3$) and 20 μg/m$^3$, respectively. During the day, this average would lower to 17 and 10 (see figure below).




Air quality on October 11th (Marathon day). Graph on top is PM10 and on bottom PM2.5




Ozone peaks in weeks before the Marathon and on the day itself, in Eindhoven and Breda (benchmark city without a Marathon that day)

On the left hand side of the picture, we see the relative Ozone levels in the weeks prior to the Marathon. Various peaks can be observed related to heat spills. The city of Breda has just 2 airboxes, which show similar but relatively higher peaks. The problem we face in analyzing the ozone information is that we have doubts about the absolute levels registered, due to the difficulty our technological partner confirmed in measuring these gases. So, we have to stick to the relative information of fluctuations.

On the Marathon day itself, we can see (right hand side, middle picture) that the ozone level was relatively low at the beginning of the day and built itself up gradually throughout the day. Intelligence shows that ozone is a very unstable gas that builds up from other substances in the measurement field of PM as temperature rises. We observe, then, a decline in PM and an increase in ozone. This was the case during the Marathon.

Comparing the data with that of one year before (2014, the top picture on the right hand side), we see sharper peaks and a longer low period. This was caused by a different type of weather in 2014 than that in 2015. Looking at data without context is, hence, crazy and delivers hardly any workable insight. It is difficult to imagine how ministries have dealt with policy-making by simply looking at data and averages when context is the most significant factor for getting an idea as to what is really going on. It also strengthened our idea that established norms of pollution hardly say anything about the wellness of a region. The context-related exposure of individuals and localized circumstances say much more. It is thus not the fragmented air quality norms that are relevant but the health of our citizens in their daily socio-economic dynamics.

It is hard to imagine the Marathon in Beijing and compare it with Eindhoven. Beijing has concentrations of PM that are, on average, up to and above 10 times

higher than those in Eindhoven. Chinese authorities that visited AiREAS laughed at us for making such a fuss about our air quality. "You have no problem", they tended to say, looking out of the window. When we explained that our focus on health rather than pollution has become the newest innovative driver influencing our social cohesion and entrepreneurial spirit, their attitude transformed into one of curiosity. From a carless Sunday action in Brussels in September 2015, we learned that such an initiative has an immediate temporary effect on the air quality in town, but Beijing is probably not just polluted by traffic. All the measures taken by the Chinese government to host their own Marathon or Olympic Games may produce a short period of improved health, but we had a different, non-remedial approach. In Eindhoven and North Brabant, we wanted to see how sports, physical exercise and air quality could enhance our quality of life and productivity all year round.

## 5.6 Ozone

The geographical conditions in Eindhoven are good for a marathon race, and if air quality can be positively taken for granted, then the race could become one of the fastest in the world. This year (2015), it registered as number five on the world ranking of speed. Various people deliberately choose this particular marathon in their quest for personal achievement. And a number confirmed that they did achieve personal records. Curiously, as the ozone increased during the day, more complaints were heard by athletes who did not achieve their expected personal record despite the beautiful day, while in the morning, when the ozone was low, the opposite trend was observed. Ozone is a gas that irritates the lungs, so the observation makes sense. The feedback was, however, subjective, and involved too few participants to make it scientifically valid. Logically, we may be able to get better feedback if we start concentrating on this particular issue based on this well-founded suspicion. This became something to think about in regard to subsequent events and next year's marathon.

### *5.6.1 Conclusions from a Communication Perspective*

The link between the marathon and air quality triggered a lot of interest among the media. This helped develop awareness, especially among the people who resonate with sports, and this event specifically, for personal reasons. Interestingly, AiREAS was approached a number of months later by people who said that they had left the car at home and avoided barbecuing to support the athletes. But they also expressed their frustration at having gone to such trouble only to observe a new event in town a week later, Dutch Design Week, in which old-time buses were used to transport people between regions in town. Those buses were highly polluting and demotivated the people who had shown goodwill the previous week.

This shows that we still have a long way to go. The perverse situation of a town with an executive health deal that still makes 9 out of 10 unhealthy decisions continues. But we need to start somewhere, and we need to show continuity, determination and celebrate our progression. The marathon link has provided us with multiple media appearances, exposure to huge amounts of people and excellent new insights that we can develop into roadmaps for health. Our own camera teams on the street also produced lasting material that demonstrates the psychosocial evolution people go through.

Among the marathon sponsors, we also found business people who were orienting themselves towards becoming much more involved in the value-driven progression and 4× profit philosophy of STIR and AiREAS through the Pyramid Paradigm described in Chap. 4. This also shows a trend towards business-oriented entrepreneurship in which profit becomes relevant to value creation, rather than speculation. Without much effort, we united over 8 of such value-driven innovators for follow-up projects and new initiatives.

### 5.6.2 The Medical Research

Our temporary lab was set up in less than one hour by Eric's team. The experience of the POP in the first half of 2015 showed. People interacted with each other instantly and trustfully. The first athletes showed up and could be dealt with immediately in a well-coordinated chain of research events.

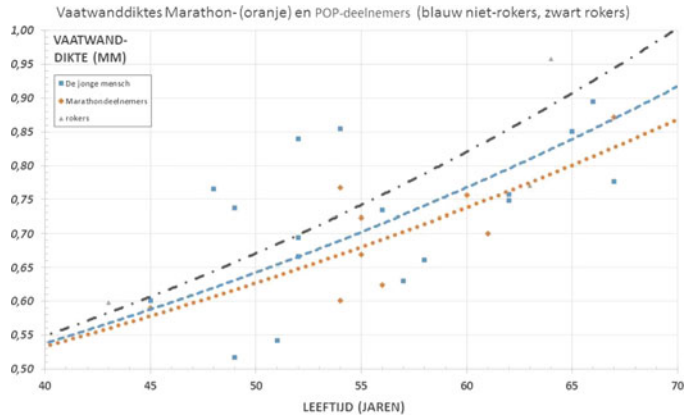
The temporary research lab

- Intake interview
- Vascular charting
- Cardiovascular measurement
- HRV
- Handing out the watches.

The athletes in this research were of different ages. They did not all run the entire marathon, but did all participate in an intense race for which they had trained a lot. Comparing the different communities and their health characteristics, we could obtain some interesting cardiovascular insight, even while dealing with relatively small groups of people. The information had been gathered from the POP and Marathon, in which we also distinguished between people who smoke (air pollution) and those who don't.

The results measured in vascular wall thickness can be seen in this graph, drawn up by Dr. de Groot and his team. The information is clear. People who do regular physical exercise, such as training for the marathon, showed a slower vascular aging process than those who don't. People who smoke show a much faster process of thickening, which makes them much more vulnerable for strokes and attacks.

Dr. Eric de Groot doing his cardiovascular research

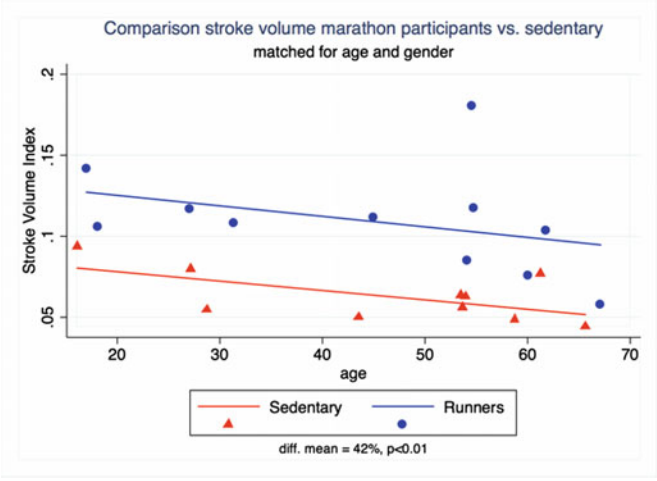



Aging of the vascular wall (thickness in mm) by age

Orange = Marathon participants, Blue = POP participants, Black = smokers

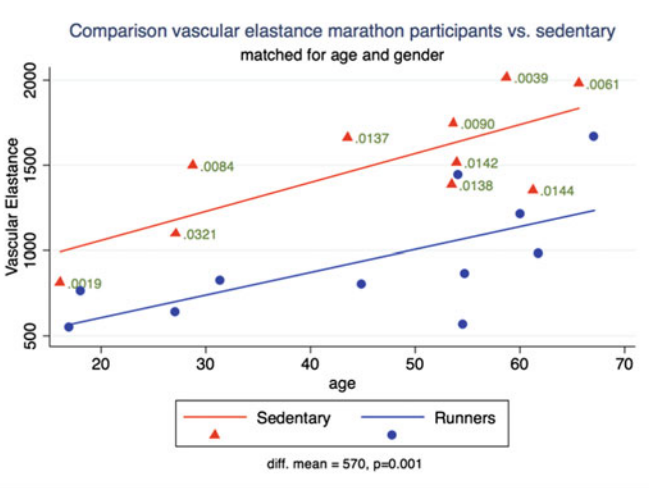
The information gathered by Dr. Kraushaar shows that sports people have a higher stroke volume than other people, meaning that their heart pumps more blood per stroke. Thanks to their sporting activities, their hearts display chambers of larger volume. In general, they would need fewer strokes per minute to oxygenate their system.

Dr. Lutz Kraushaar with his unique vascular mapping techniques




Also, vascular flexibility is much better among runners in comparison with non-running people. We had called for two persons from the same family, one a runner and the other a close relative. We could thus assume that their lifestyles and living conditions were as similar as can be, allowing us to relate the measured

differences primarily to sports. Of course, all kinds of other factors could have been influential, such as DNA, job stress, professional activities, etc. But seeing the results, we can very confidently state that sports and physical exercise have a determining effect on the health of the heart and arteries.

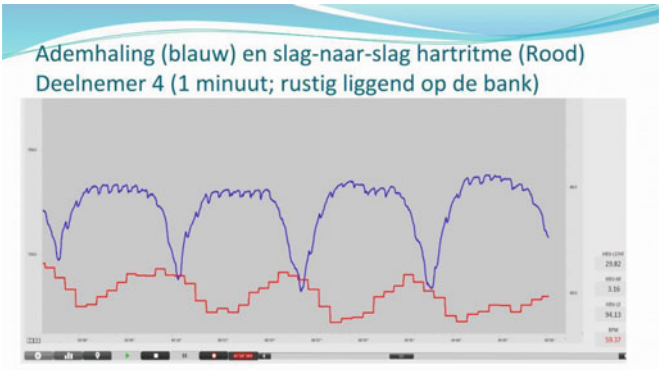



Pierre Cluitmans and his methods examined Heart Rate Variability both when at rest and while engaging in the running exercise.

Dr. Pierre Cluitmans doing his HRV registration with people at rest

Dr. Cluitmans collecting the HRV registration devices from the athletes who came back

As we have already seen in Chap. 2, the amount of data collected on Heart Rate Variability is tremendous. The impressive set of data per individual, placed in the context of lifestyle or sports, gives very valuable information about the way a person deals with stress and stress recovery leading into new phases of rest. It can also be seen to what extent sports influence such variables.

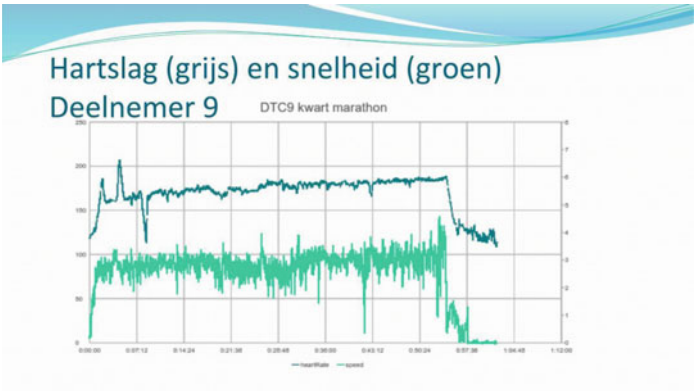



Heart Rate Variability (Red) and breathing (Blue) of a participant at rest
1 minute laying down on the bench


Breathing (blue) and heart rhythm (red) of another participant at rest
1 minute laying down on the bench

We can easily see through heart rate and respiration that every person is different, which makes such an investigation so interesting and special, but also so complex. We also see that there is an inverse relationship between respiration and heartbeat. When engaging in sports, this is, of course, important too. Interestingly, if you compare this image with the one on variable economics, the resemblance is striking.

The data that Pierre collected on the runners during the race shows the relationship between the development of speed and their heartbeats.




Example of measurements of heartbeat (gray) and speed (green) of a participant during the exercise

## 5.7 Conclusion of the Medical Data

Detailed analysis of all this data can zoom in on the health situation of a particular person and even predict possible heart or vascular problems at a later stage in life. The technology and research options are powerful instruments for preventive care and a stimulus for the evolution of a healthier lifestyle through making visible the invisible, including at the level of our own life support systems. In this way, preventive care can save the community enormous healthcare costs while enhancing the overall regional quality of life and the way people interact with each other and their environment.

In the book (AiREAS Phase 2) written by the health scientists and researchers themselves, more detail can be found about their proceedings and findings during the POP process. The link to that work will also be made available through Springer and our communication channels.

### *5.7.1 Overall Conclusion of the Marathon Exercise*

Large events engage people with a particular mindset, allowing them to resonate more with related subjects than they might otherwise in daily life. The marathon showed the link between sports and our health. As an event, it had great communicative value for creating a health-driven mindset and pinpointing problems that otherwise remain largely unspoken of within the current paradigm of political-economic steering. From a research point of view, it was extremely valuable to be able to compare the data of different groups of people in society and show the relevance of physical exercise at all ages. The comparison with people who smoke also shows how lifestyle choices affect the health perspective negatively. While smoking is a personal choice, exposure to outdoor air pollution is not. In some reports, the authors compare exposure to outdoor pollution as being equivalent to smoking between 4 (Eindhoven) and 40 (Beijing) cigarettes per day. Applying this analogy to the POP research, it shows that taking responsibility together (citizens and governance) for the quality of our shared air is directly related to the evolution of our health.