



## The worker between time and health

Alice Itani<sup>1</sup>, Ericka Itokazu<sup>2</sup>

<sup>1</sup>Paulista State University: Institute of Biosciences, São Paulo, Brazil E-mail: [aliceitani@gmail.com](mailto:aliceitani@gmail.com) ; <sup>2</sup>Department of Philosophy and post-graduate program in Philosophy, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.

**Abstract:** How do workers experience different temporalities? Within this context, how can they care for their health? What about work experiences that represent different temporalities? This is the case with aviation and oil rig workers. Work-time, notably schedules, shifts, and working days were studied. However, the experience of living in borderline situations with time still merits consideration. And this can lead to survival strategies being created. This paper deals with a reflection on the experience of workers with time on the job and how, at the same time, they care for their health. It is based on studies conducted between 1992 and 2012 with aviation workers, notably pilots and air traffic controllers and those working in the oil industry. Their experience of daily life, with time for work and the creative process as a possibility of taking care of their health can contribute to reflections on this matter.

**Keywords:** time; health production; aviation workers; oil workers; worker strategies.

## O trabalhador entre o tempo e a saúde

**Resumo:** Como é que os trabalhadores experimentam diferentes temporalidades? Dentro desse contexto, como eles podem cuidar de sua saúde? E sobre experiências de trabalho que representam diferentes temporalidades? Este é o caso da aviação e dos trabalhadores de plataformas de petróleo. O tempo de trabalho, nomeadamente horários, turnos e dias de trabalho, foi estudado. No entanto, a experiência de viver em situações limítrofes com o tempo ainda merece consideração. E isso pode levar a estratégias de sobrevivência que está sendo criado. Trata este artigo de analisar alguns aspectos dessa experiência de trabalhadores na produção de saúde. Analisam-se dados de três estudos desenvolvidos entre 1992 e 2012 com os trabalhadores da aviação, nomeadamente os pilotos e controladores de tráfego aéreo e os que trabalham na indústria do petróleo. A sua experiência de vida diária, com tempo para o trabalho e do processo criativo como possibilidade de cuidar de sua saúde pode contribuir para a reflexão sobre esta matéria.

**Palavras-chave:** tempo, produção da saúde, experiência, trabalhadores da aviação, trabalhadores de plataformas de petróleo.

## 1. Introduction

How do workers experience time? What can one say about the time-related experiences of those who work in aviation, particularly pilots and air-traffic controllers, and those on offshore oil rigs?

Aviation professionals, particularly pilots, air-traffic controllers and workers in the oil industry experience special situations of different working hours, marked by alternating day and night hours and shifts involving services that function uninterruptedly. Alternating night shifts are becoming more and more frequent for meeting the demands of industrial society, and this has an effect on the health and quality of life of workers.

Work-time experience can be understood as timed working days, schedules and shifts, which are the ways in which work is carried out. On the other hand, it is also the experience with duration of work in the working process, as content. It is not a question here of analyzing work-time from the perspective of value creation, as in classic literature, or even work-time as analyzed by Postone (1993), but of analyzing the experience with time at work. On the other hand, studies on work-time related to issues of working days, schedules and shifts with effects on the organism, were undertaken, among others, by Reinberg et al. (1991); Akersted (2007); Fischer et al. (2004); Wright et al. (2013), who showed the effects of alternating night and shift work on Circadian rhythms and sleep. The shift working hours of aviation workers – pilots and air-traffic controllers - were the object of studies by Jones et al. (2005) and Williamson & Friswell (2011), among others. In Brazil, studies with civil aviation pilots were undertaken by Loterio (1988), who analyzed symptoms of fatigue and drowsiness among pilots, Ferreira (1997) who analyzed working hours and salaries, and Fischer et al. (2004) who analyzed the effects of the shift work of pilots on circadian rhythms. With regard to oil rig workers Parkes (2012) reviewed a set of studies on shift work on offshore platforms in the oil industry and its effects on performance, health and safety.

Over and above analyzing the working days and shifts that are established for organizing work, an attempt has been made to reflect on the experience of work-time, considering that the worker seeks a meaning production perspective, as the result of a creation, as understood by Castoriadis (1975), in order to prepare another time that makes possible a *réfoulement*, an appropriation of their work and their own health. So time is not analyzed from the same perspective that Ricoeur (1983) used, an historical narrative. Two questions crop up as a point for reflection: How is time perceived by workers and how do they experience time?

In fact there are working days that can affect the health of workers. But how can workers take care of their health under these conditions? Experience with time within the work space and life space from the perspective of health production has never been the object of attention. It is in the time and space of life and work that workers can develop the conditions needed for producing health. The organization of hours has an influence on daily activities, which includes those hours that involve food and rest, which are fundamental to the good functioning of the organism. We have tried to understand how those who work special working day schedules organize themselves to undertake their daily activities of life and how they develop the conditions needed for producing health.

This is, therefore, a reflection on information taken from studies that were carried out in the period between 1992 and 2012, with workers from the aviation and oil industries. The studies with aviation workers were carried out in various stages between 1992 and

2009 and dealt with working conditions and risks. The work was funded by the São Paulo State Research Funding Agency (*Fapesp*) and the National Council for Scientific and Technological Development (*CNPq*). It also included the observation of work done by the pilots of three commercial aviation companies based in São Paulo, Rio de Janeiro and Porto Alegre. They were accompanied during flights for a year. Statements were also taken from pilots on their days off and when they were on stand-by, as analyzed in Itani (1998, 2009a, 2014). The work was also supported by the National Airline Workers Union and authorization was granted by the airline companies to carry out the work. The study with air-traffic controllers started at the request of the Air Traffic Controllers Union in 1997, right after the 1996 accident with the TAM aircraft in Congonhas Airport. It looked into the working conditions and health risks and received funding from *Fapesp* and *CNPq* and authorization from the Aeronautical Command. Data collection was followed by six months of observation, accompanying the work of air traffic controllers in air traffic control rooms and air traffic control towers in São Paulo and Rio de Janeiro. This involved taking notes and collecting statements in the work-spaces themselves and also outside working hours, as analyzed in Itani (2009a, 2009b, 2014). The study with oil industry workers and specifically with offshore oil platform workers started in 2010, when statements were collected.

The studies into working conditions centered on work processes, such as how they are established, the way they are organized and managed and how they are experienced, focusing on three main points: 1. Time dedicated to work: schedules, shifts, working days, rest periods, time on-duty, time on stand-by, and work rotation schedules; 2. Work content, such as how it is organized, established and understood by the worker; 3. Environment – work as it is managed, the rules and conditions under which it is carried out, such as relationship with bosses, the physical conditions under which the work is done, systems and equipment. Dangers and risks were also looked at, based on information about accidents, illness and time away from work.

## 2. Experience and the social production of health

Considering work experiences is a perspective that enables us to understand facets of working conditions as they are experienced by others. We had recourse to the analysis perspective of de Gianini (2013) when it came to thinking about this experience (which is not merely personal, since it includes others), because of the different ways in which individuals communicate as people who find themselves in similar situations. In the everyday way people have of saying things and their availability and reflections, the submerged roots of an individual experience become entangled with these other experience. There is a constant interchange of voices and expressions, a common feeling, which transforms small, everyday stories into an experience, a way of understanding that is also common and collective and that is also included as an experience guided by an emancipatory interest. That is why experience can be apprehended within its own territory where it is made possible, which is the territory of everydayness.

Intertwined with this experience is a singular social condition, which is that of the worker within a spatial daily structure, which is the work space. Therefore, the words workers use to express themselves are not passive. They also enable us to reflect on their identity, on what they are doing and what their prospects are. This experience is

constructed over the habitual cycles and is also considered to be a routine. This identity condition depends on this order, on a space-time continuum, like a symbol of human singularity, as Gianini (2013) remembers; and like the result of other lessons, which create references with their own meanings, expectations and prospects. So when people express themselves in statements, they also reveal an experience that is common in its meaning.

On the other hand, health is considered to be the result of a continuous and cumulative process of care. This care is developed by way of the living conditions that result from a set of public policies that are collectively developed for distributing mains drinking water, sanitation, transportation, electricity distribution, the control of zoonoses, vectors and other aspects. Organisms develop with a complex, homeostatic system that is in a constant process of internal and external regulation. This system has forms of equilibrium that have a complex dynamic that developed within the conditions that individuals and groups have at their disposal and through the domination they can have over these living conditions. These are also seen in care actions and care practices, like regular meal, rest and sleep time habits, for example. They are also customs that make it possible to look after oneself, which Foucault (2008) refers to as governability, by the government of self, of one's tensions and drives, and the government of others. These practices also include the government of affective relationships. In this sense health is the result of a process that is developed cumulatively, the result of daily care practices that materialize in collective bodies and, because of this, are understood as a process of social production (Itani, 1998).

Within the working spaces health depends on promotion actions and management policies for the conception of processes and the elimination and control of the risks of the work process and work organization. Within the production processes, the organization and operation of systems and equipment must enable the development of healthy living conditions at work. These work spaces are environments that need to provide this health production process, with working conditions that are free from hazards and risks. They must also lead to the development of socio-professional relationships that are also within the understanding of workers in their socio-professional world.

### **3. Experience with time**

Experience of time is always lived, but not always analyzed. The experience of industrial society started being clearly demarcated as time between work and life by Thompson (1998). The equilibrium relationship between the time of nature and social time, between the biological time of the way that organisms, animals, plants and the soil function with social time, the time of production, has changed. Production and communication time in the world has broken with the biological time that regulates the rhythms of organisms. The divided and fragmented time of contemporary life does not even allow for the existence of the narrator, as analyzed by Benjamin (1985). But what is the worker's experience with time like? Is time a properly human production? Is it its creation, its imaginary product in the multiple temporal experiences between the past and the future, between memory and history? Or is it a scientific product of an expanded or compressed time that is relative to a certain chosen point of reference? Or is it even an intense and continuous flow, only measured by our technological instruments of precision?

Based on Spinoza (1988) it might be said that time has no essence. It participates in a peculiar way as the basis and foundation of all human relationships, as well as man's relationship with the world. It is the social construction of a common time that guarantees that men participate in the same collective body. Anxieties, desires, feelings, the imagination of social order and disorder are directed and ordered by it. This is the reason why fear and hope are strictly temporal feelings. We are afraid of something bad when we don't know whether it will happen or not; we are afraid of future contingents. We hope for something good when we don't know whether it is going to happen or not; we are hopeful about future contingents. Between fear and hope, what is common is that we don't know what is going to happen in the future, which is why we are fearful or hopeful (Itokazu, 2008).

Time doesn't have its own reality and so it doesn't have its own existence. There is no essence in particular (Spinoza, 2002). It's something we construct. Therefore, it can also be something we dominate. In other words, its nature depends on how we face up to the power of individual and collective human action, which we cannot fail to perceive and feel in the order of time. It is precisely because of this that we believe that it exists independently of us. We need to perceive it in the order of time, even though it doesn't exist, because it's the only way we have of discovering and unveiling the feeling of existence itself. The experience of time is an experience that includes affection, the feeling of existence and of a possibility of synchronizing the process of collective existence (Itokazu, 2006; 2008), and that collectively marks the synchronization of existence.

On the other hand, the experience of time is human and, therefore, social and historical. It results from a learning experience, but one that is instituted and instituting at the same time, as analyzed by Castoriadis (1975). The greater the configuration of interdependence that links men together and the richer and more complex such relationships, then the more this notion of time becomes an indispensable notion of individual customs, as analyzed by Elias (1992). This experience is social and cultural, because it is included as learning in a given society as part of imaginary meanings and, as a result, it is "identitary" (Castoriadis, 1975). It becomes an element of identity when it is shared and, because of this, it is collective time, because it is what connects us with others.

So there is a relationship with time that is developed by way of various processes. First, it is constituted as a relational symbol. Secondly, it is presented as individual time, a time of self-discipline and of habits that result from internalizing acts included in social rules. Thirdly, it seems to be collective time that becomes a social fact, forming part of the social codes, as understood by Elias (1992). But time is above all creation, inseparable from the being that exists, in fact, by virtue of time, as analyzed by Castoriadis (1975). As creation it is both objective and subjective at the same time. It is understood, therefore, that temporalities are time perspectives created by the individual; a form of creation between different points in its synthetic form, so imaginary time may appear quite real. It might appear to be multiple, endowed with meaning, with intra-world transformations, representations and feelings. This meaning is like human creation, which involves the imaginative capacity, like power, coming not only from the act of creation, but from its source and forming a magma (Castoriadis, 1975) with that of reproducing. It is not created by a specific subject, but it is on this basis that an immanently complex tissue of meanings can be created that is impregnated with and guides the subjects. This tissue guarantees the possibility of human life and society.

#### 4. Experience with time and health production

Aviation workers, pilots, air-traffic controllers and offshore oil rig workers suffer constant alterations in their work schedules, and places too, in some cases. All these groups form part of those workers whose working hours, places and different work roster groups alternate; they experience changes in work schedules, places and teams. Some points of these experiences of pilots and air traffic controllers are worth relating.

##### 4.1 Experience of the pilot

Those workers who fly aircraft, above all those who are on international night flights, experience a constant alteration in working hours and special shifts; they are permanently being displaced. When they are on international flights they work for hours on end in different time zones and spend four or five days away from home in different places. They pilot one of the fastest means of transportation: in just a few minutes they travel many kilometers, and this alters different factors that must be controlled. With every gesture, action and decision taken pilots experience a temporal dilation, given the way the system in operation accelerates around them.

The pilot's working day is established by way of a roster that may be altered on a weekly basis, thus preventing the planning of their personal, family and social life. According to Walter, one of the pilots, the roster is frequently altered and programming their life, to play soccer with their children, for example, can only be done when they know the next roster, which is published a week in advance. From one week to the next everything can change. He enrolled three times to have saxophone lessons and was unable to have more than two lessons each time.

Three aspects can be listed from this pilot's experience: the rhythm of the organism; the pace of work and the quality of rest; the difference between family and social life time and work time. In the first aspect, the rhythm of the organism is regulated by three synchronizers, like light, temperature and social interaction. A pilot experiences frequent alterations of schedules, thus constantly breaking these synchronizers. The second aspect is the pace of work and the quality of the rest time. When they are flying they rest in the workplace, in the aircraft's cockpit, and then in a different place, in a hotel and in a different country. The third aspect is that of the difference between social and family life time and work time.

This an experience of different temporalities in different spaces. There are those who organize strategies to defend their organism from the constant alterations in rhythm, time and displacement. Such is the case with pilots who try and organize activities when they are away from home to fit the times with which they are accustomed. These ways relate to respecting meal times and, whenever possible, rest times. Other routines are created to maintain the rhythm of their organisms, as related in the statement given by Captain Barros:

*"...I don't have much of a problem with time differences. Everybody talks about it. But I have a strategy and I've lived it for the last twenty or so years that I've been in aviation. Wherever I am I never change my watch. If I arrive in Frankfurt and there it's midday, but by my watch it's 7 a.m. in the morning I'm going to have my breakfast. Sometimes I go out for dinner and everything's closed. No problem. I go back to the hotel and I order something for dinner. I do what I would be doing here at home (Captain Barros)."*

If time and place are reference points of an individual's identity, frequent and continuous alteration is also an experience of alterity. The international pilot experiences non-place in different places, an experience of continuous 'deterritorialization' (Itani, 1998). In this sense, maintaining a routine, or at least the pretense of a routine, also represents a form of being, a form of escape from radical, temporal, spatial and identity alterity, in the sense analyzed by Castoriadis (1975).

But this strategy of maintaining the same pretense of a rhythm may also be preservation, a self-preservation possibility, as a strategy for reducing the risks to health caused by the constant breaking of biological and spatial rhythms. But science has found that there is a price to pay for living under different temporal conditions, above all when activities are undertaken away from the place where one's own living space is located. Being continually out of step with the rhythm of life of the places where one lands is a risk because of the limited experience with the rhythm and daily life of that place. A fourth aspect can be added to this experience, which is that of living as a stranger, which in fact one is. Co-existence with others and with the universe of these places, which is always a restricted experience, makes the person increasingly foreign to the place and people (Itani, 2009). This strategy may be positive for the rhythm of the organism, but it causes damage to other aspects of the interaction. Given this diversity, there are those who use some object - a familiar instrument - that may give the feeling of a temporal place that is familiar to them; it can be a book.

*"... I spent my life packing suitcases. At home, in hotels... From here to there and from there to here. I just couldn't forget the book I was reading. I can't remember how many times I had to buy new pajamas (Capt. Cont)."*

## 4.2 Experience of the air-traffic controller

The worker who exercises their functions within the air-traffic control center is on alternating shifts and they change their working hours on a daily basis. On the first day, they are on the morning shift, on the following day on the afternoon shift and on the third day, the night shift, and then they have two rest days. On return from the rest days, they begin on the morning shift, the next day the afternoon shift and then the night shift, leaving in the morning for two rest days. This means that they do not have two days with similar schedules.

The contradictions begin with the way the working hours are counted, considering one morning (1 M), one afternoon (1A), one night (1N) and two rest days (2R). By analyzing the schedules and shifts and counting the days and hours, we can identify the differences. If we consider March 1 as the first day of the cycle, starting work at 6 a.m. and leaving at 2 p.m. the following day, March 2, they begin the afternoon shift at 2 p.m. and leave at 10 p.m. On March 3 they begin the night shift, starting at 10 p.m. and finishing at 6 a.m. on the following day, which is already March 4. They then begin their rest days, starting with the day on which they have already worked and continuing on the following day, March 5, then returning to work on March 6 at 6 a.m. On March 7 they work from 2 p.m. and on March 8 they work from 10 p.m. until 6 a.m. on March 9. They rest on March 10 and begin again on March 11. We can see that these working days come in cycles of ten days, and not seven days as weekly working hours are normally counted. In this cycle of ten days they have two rest days, one in the first part of the cycle and the other in the

second part. After a month they will have undergone three cycles and had six rest days in thirty days.

We see them, however, preparing ways of overcoming this rotation by creating other temporalities. Taking advantage of the fact of working alternate schedules there are those who have created other temporalities, such as returning to studies and other activities:

*"...I've been here eleven years. I came to São Paulo to study. I got into USP, but my parents couldn't support me. So I joined the air force. I went into air-traffic control, which had different working hours. This allowed me to study. It took some years, but I graduated. Now, I'm a pharmacist and a flight controller. I have a roster here and another in the hospital... (Cv. L.)."*

He retains in his memory a decision period at a moment in his life. These are words expressed as the before and the now. The before, the time when he decided to go to São Paulo to study, and a later time, when he decided to enter the air force; and the now, of being in air traffic control and being a pharmacist. There is also the control time and the pharmacist time in the hospital, forming different temporalities that are expressed differently.

Distinctions are made between time-space, which can be created even after years of work, and life-space, which is different from the workspace within this alternating roster. This also seems to show that they are clear that there is 'living', even if the calendar is used as a form of identity. An attempt is made to alter what is possible within the given conditions, like organizing rest days to attend and experience annual festivities:

*"(...) Yes, there's no social life, we really don't have one. Sometimes it's good and sometimes it's bad. It's years since I've enjoyed Carnival, because I always work at Carnival (C.V. EM)."*

*"... Next year I want to relax on New Year's Eve, because I always work on January 1 (C.V.ME)."*

Likewise, we note in the testimonies that people are clear about the possibility of having another life that is different from the one they lead. They know they can change their current life situation:

*"... I want to live in the countryside where the quality of life is different. How much time do you think I take to get from my home to here? (CV.MI)."*

Experience of time also differs depending on gender. For women who are working in air-traffic control the question of schedules that involve alternating shifts is clearly expressed as a problem, since it affects their life's routine with its family activities:

*"... In the beginning I thought it was an advantage working with this roster because I had three days of rest. But after, with the children growing up one of the problems is the lack of routine with them. On Mondays I start work at 6 a.m. and leave at 2 p.m... On the next day I'm working from 2 p.m. until 10 p.m. and on the following day I work over night... (C.V.M.E.)."*

The question equally affects one and the other in the same way. But looking after the children is undertaken as part of a specific temporal dimension that is based on a routine of family activities and that is much more frequent in the experience of the women. When taking care of the routine of family life in their temporal universe of life another dimension of time is created.

### 4.3 Experience of the offshore oil worker

Offshore oil workers experience work in continuous 12-hour shifts, followed by 12 hours of rest. In the period in which they are on the roster and based on the rig, rest is in



the same workspace, shared by shift colleagues who are also resting. For 14 consecutive days they are away from their social life and family existence space. After this period they spend three weeks at home. When they leave the rig to rest at home they break this rhythm of working hours and the experience of resting in the work environment.

The rhythm of work jeopardizes the quality of their rest, above all when they are on the rig. After 12 hours at a certain rhythm of work they spend 12 hours resting, but in the same workspace, confined with their shift colleagues. They break with their social learning schedules and experience very different meal and sleep times. They experience the distinction between the time they are on board the rig, on the rig roster, and the time they are off duty on the rig. This coming and going takes place constantly with activities that are replaced in the rest periods at home, which are unlike the periods when they are on the rig.

These work experiences represent the limit of this health production. They are experiences that bring different aspects of space and time. This seems to make it obvious that for each work relationship it is possible to think about a new space-time relationship experienced by the worker. So this proves that we are no longer dealing with the homogeneity of chronological linear time, or even with the temporal calculation of different work rhythms, but the experience of multiple simultaneous temporalities from another space-time perspective.

## **5. Temporalities and survival strategies**

To reflect on these experiences of time at work do we not need to abandon our understanding of an homogenous, stabilizing and synchronizing time of production processes, which measures the amount of work and its rhythm, in order to reflect on these multiple temporal experiences, these different modalities of rhythms and experience times of the worker and try and introduce some understanding of their relationship with health production?

In these three groups of workers we see different experiences. The pilot experiences different spatial temporalities. The air-traffic controller experiences temporalities that involve the overlapping of time because of spatial exclusion. The oil worker on an offshore oil rig experiences different temporalities, one of spatial exclusion and the other of reclusion.

The international pilot lives three or four days a week away from his place of social and family contact. They are away from their life's locus, which also includes their habits at regular hours; they live a permanent alterity of time, place and habits. The air-traffic controller has a different schedule of working hours every day. These schedules take over the possibilities of organizing regular daily habits. The offshore oil worker is away from home, from their contacts, without the possibility of developing their life's practices and habits.

One of the aspects of this experience is that of the alterity of time and non-regularity. Very little is regular in relation to patterns of hours, weeks, days of the week, or months, as part of the customs that made the civilization process of man and his culture, as was analyzed by Thompson (1967 and 1993) and Elias (1992). Working hours that are timed and marked by established schedules are part of another learning experience in the society of work. But the non-regularity of schedules may also be the experience of the alterity of time, which affects the life of the worker both as regards the biological

functioning of their organism, as analyzed previously, as well as their physical, social and mental condition. It is the organization of life, and its activities and daily practices that are being questioned.

The experience of these pilots is that of fragmented time and alterity time. Rig workers in the oil industry also experience fragmented time. They are desynchronized workers and exposed to damage to their health because of the non-regularity of their times of rest, sleep, food, and family and social life. Each of the groups lives a domination limit situation, with rules of irregular working hours. They have nothing in common. The solution for the case of the pilot is different from that of the controller. In the case of the experience of these aviation workers we see that there appears to be no separation between the time dedicated to work and that which is not. In reality, the whole of the life of the worker is taken over by a complex organization of rules, norms and rosters.

Each one lives a different imaginary order because they need a common social tissue, as a survival manifesto. But we find survival strategies in this experience of alterity. Seven items of these strategies are indicated. First, there is clarity between what they do and the conditions to which they are submitted, as we see from what they say:

*"... It's very stressful. And I'm not going to say that it's because of the volume of work. It's because of the working conditions. All this is what kills you. A shortage of personnel... ( C.V. K)."*

*"... Conditions? Very frequent equipment breakdowns. When you're talking to the aircraft the frequency drops. The radar stops working; it switches off. The telephone doesn't function; it gives no sign of life. All this kills you. It's worrying, isn't it? (C.V L)."*

This declaration of a bad situation infers an understanding between what is not a given and what can be changed, above all improved. This is also seen in the details that go to make up what they consider to be something negative in the situation and that is not considered part of their work.

Secondly, there are different temporalities:

*"... Each day is different from the other. Sometimes it's calm, very calm. And sometimes it's very hectic. When it's raining there's another state of mind. It's a disturbing service. But this is also what makes people like it (CV.AB)."*

These are temporalities that are created as different groups, between those moments of calm, stable weather conditions, few flights, even moments when there is a lot of flight movement, to those moments that are hectic, frantic etc. This distinction is a creation that allows people to organize and prepare themselves in the sense analyzed by Castoriadis (1986). This preparation and organization process is also included as a protection for the organism against different rhythms in the same space. We see the development of synchronized acts in this process, which are identified, particularly at times of greatest movement, as variation changes. We see this in the case of air traffic controllers. These actions, which need to be carried out jointly, are created with a common understanding.

Thirdly, they know precisely what the best conditions are. Their domination of the rhythm is seen in their criticism of working conditions, which seems to be well founded. Pointing out certain items of their working conditions that are not the best can be noted in the way they appropriate the workspace as a place in which they spend some time of their life, and which is manifest by what they say could be another workspace:

*"... There could be windows. We're in a confined space, in a completely dark room. The room's very cold. You don't know if it's sunny or raining. You're oblivious to everything. If you want to see the sun you need to go down and open the front door. Those things like... where*

*you can see outside, that would do us some good. Having contact with light. You're a prisoner between four walls; you have nowhere where you can go and look out... ( C.V M.L)."*  
*"... And also background music. It wouldn't interfere and would make you feel less stressed. That could be possible. That ugly, untidy room with its black ceiling... (C.V M.E)."*  
*"...That rest room. They could look after it. They just don't care. We complain. There could be a place for us to really rest... (C.V L)."*  
*"...Because it's a highly responsible job. It could be a partnership and not this disproportion like it is now. There's a lack of support. Everybody's dissatisfied. There's a lack of interest and sensitivity. There needs to be collaboration and integration in the sense of the work. They need to take into consideration what each person needs... (C.V M.E)."*  
*"... You're seen as a tiny part. You just have the right to work... (CV, AB)."*

The statements express that which can affect the daily work morale and the creation of the perspective of a workplace. This appropriation can be analyzed as the creation of another temporal space (Castoriadis, 1986).

As a fourth item, we find a search for damage prevention. The care perspective involves preventive damage control, which may be more effective because it derives from a process that is internalized by the individual. Nevertheless, when working conditions become insupportable they have recourse to alternatives and possibilities for escaping from exposure to the risk of greater stress. They look for ways of establishing equilibrium and getting a break from that workspace:

*"...I've been off work for 60 days. Once a year you have to carry out a health inspection. Laboratory exams and various eye tests, ear nose and throat, a dental check-up; you undergo everything. Even a psychiatrist. They ask you everything. And the doctor saw that I was coming down with depression. He gave me medication and I'm off the roster... (C.V.ME)."*

The fifth item is that for prevention they need to know what is good for or harmful to the organism. Among the statements we identified a certain domination of the functioning of the organism itself and how it reacts to perverse conditions arising from these alternate schedules. Within this we found knowledge of what measured time means when trying to escape from the prison of work schedules:

*"... I work three days – morning, afternoon and night and then I have two days off. It's always like that (...) in order to have a week away you can come to an agreement with people, so you get away for a bit, relax and come back with your head in order. You replace your energy in order to continue working (C.V. AB)."*  
*(...) What I really don't like is working nights. Overnight... because it changes your whole biorhythm. On the day I get the overnight shift I try and sleep in the afternoon. I mean I sleep 4 or 5 hours to be able to stay awake at night. But then you become weird; everything changes. Night work is very tiring... (C.V. DM)."*

As a sixth item we found a distinction between the fatigue discourse and the relationship with the rhythm of work. If the fatigue discourse expresses an evolution in the social relationship with time, we note an understanding of the difference between day work and night work. This difference between working by day and working by night is not in the rhythm. The declaration about the negative aspects of night work involves the difficulty they have in understanding availability. This is a time that is not justified; time that is nonsense and collectively marks the lack of synchronization of existence, as analyzed by Itokazu (2006; 2008). It might be a different space-time rhythm that is perceived as being more tiring. During the day there is more movement of people and a greater number of flights. This requires greater attention. At night, the movement is smaller, which is considered to be tiring.

Finally, the seventh item indicated is the observed difference between the indicated conditions and the pleasure of working, which is very marked among aviation workers. In some cases they declare a passion for what they do. We saw that there are activities that are prominent within the circle of reference and when appropriated this allows for a sense of daily action to be valued. And that has a signification, in the sense analyzed by Castoriadis (1975) This 'liking' enables people to build up an emotional capital, a form of energy that can boost this action. This energy enables the activity that is carried out to strengthen the positive image. It may also be reported as an experience of a project that is considered to be collective:

*"... I like my work one heck of a lot... (C.v.L.M.)."*

*"...I like the work... (C.V.M.E)."*

*"... It's part of my passion. I always dreamed of going into aviation. I did the courses. I put a lot of effort in. I like this a lot... (Capt. E B.)."*

*"... I like what I do a lot and also the company. I competed with a lot of people to get where I am. It's important work...(Rig worker 1)."*

*"... I'm proud to be an oil worker...(Rig worker 2)."*

*"...I started by chance. I did the course when I was doing an engineering course. But I came to like it and now I've been working in flight control for 21 years (Cv. ME)."*

This energy can be considered by the signification created in their daily work. In the case of aviation as the provision of air transport service, the passenger may be identified as "another person" who is benefiting. Even though the passenger is anonymous they are the people who can justify their labor, with whom it is possible to identify and to whom they direct their efforts.

There is also the universe of time created by women when they distinguish between the time caring for the family routine and their children and the functioning activities of the house. The experiences of these shifts are differentiated between in the statements, above all by those women who have the responsibility of looking after children. They seek to adjust their life's schedule to the children's routine, which is necessary for producing children's health. But the alternating shifts do not facilitate the task and many women give up their functions and prioritize their maternal function, which is considered to be more important in this universe.

## 6. Final considerations

In the experiences of these workers in aviation and the oil industry we can see an incongruent experience of simultaneous temporal experiences. There is homogenous time, calculated by the measure of the hours worked, which is very different from the acceleration or deceleration of the rhythm of this same work. There are different experiences of time as a feeling of existence, a desire to prolong the time of a calm and affective life.

In these different manifestations of the experiences of the workers who were analyzed we see a continuous experience with the non-place, as in the case of pilots. We also found among both pilots and air-traffic controllers that work takes over the whole of the life-time of the worker. The pilot has no control over his roster and so he needs to wait for its publication to be able to establish the commitments of his social and family life. The same happens with the air-traffic controller. These are singular experiences and refer to a specific condition lived as a worker in their life and work spaces. It is the experience of a

group of workers who live in the same workspace under the same conditions; a shared experience.

However, it cannot be said that there is total submission or even a lack of knowledge of the domination process to which they are submitted by measured time. The extracts taken from the statements show an awareness of this process, above all in the attention to working conditions because of the ways in which they look after their sleep and life routines. Many resist certain established norms in different ways, using different strategies that enable them to regenerate their own energy. They are aware that they need to struggle against work time, by making it follow in a more rhythmic pattern so that they can produce a situation in which, finally, they have some time for living. In the case of the pilot this means dominating time by way of daily activities, without losing notion of the relationship of time in the workspace; this can also be considered to be a way of resistance. There are those who subvert what is established and use time in their favor, as in the case of those who studied during intermittent periods.

This resistance, however, does not mean that their perverse working conditions are modified, or that conditions change and these workers are no longer exposed to damage and injury. But we see individual attitudes and collective practices that enable them to escape from this imbalance and that contribute to reducing the effects that could be very much more perverse and harmful. They establish intangible, unaccounted-for effects that arise from the practices they adopt for subverting their daily routine. There are those who dominate the notion of what is harmful and bad and what is difficult to survive and support in their work conditions. They create strategies for maintaining a certain positive, collective morale; an action that can be considered a power of life is that of persevering with time as a survival strategy. Several strategies can be understood as ways of appropriating time. Time can be experienced as a way of subservience. But domination over, or knowledge of the enticements of time can also be used as a path or instrument for freeing themselves from its subjection. This may be a liberating possibility, such as the case of the pilot who does not change his watch to the time of the place where he is, even though others consider him to be mad. A temporal problem can be appropriated in different ways, whether it is singularly or collectively constructed.

### Acknowledgments

Ethical procedures were followed and anonymity is guaranteed.

Our thanks to the *CNPq* and *Fapesp* for their support in developing this research.

Our thanks to Robert Dirham for his contribution towards improving this text.

### References

- Akersted, T. (2007). Altered sleep/wake patterns and mental performance. *Physiology & Behavior*, 90(2–3), 209-218.
- Benjamin, W. (1985). O narrador. In Benjamin, W. Obras escolhidas, v. 1. Magia e técnica. São Paulo: Brasiliense.
- Castoriadis, C. (1975). *l'institution imaginaire de la société*. Paris: Seuil.
- Castoriadis, C. (1986). *Domaines de l'homme*. Paris: Seuil.
- Elias, N. (1992). *Time: an essay*. Oxford: Blackwell.
- Ferreira, L.L. et al. (1992) *Voando com pilotos. Condições de trabalho de uma empresa de aviação comercial*. São Paulo: Apva.

- Fischer, F.M., Moreno, C.R.C. & Rotenberg, A. (org.). (2004). Trabalho em turnos e noturno na sociedade 24 horas. Rio de Janeiro: Ateneu.
- Foucault, M. (2008). The government of self and others. Paris: Gallimard/Seuil.
- Gianini, H. (2013). La "reflexion" cotidiana. hacia una arqueologia de la experiencia. Santiago: Universidad Diego Portales.
- Itani, A. (1998). Trabalho e saúde na aviação. São Paulo: Hucitec.
- Itani, A. (2009a). Saúde e gestão na aviação. A experiência de pilotos e controladores de tráfego aéreo. *Psicologia e Sociedade*, 21 (2), maio/ago.
- Itani, A. (2009b). Com a cabeça no ar. São Paulo: Hucitec.
- Itani, A. (2014). Work experience. *Psychology*, 5(5), 421-430.
- Itokazu, E. M. (2006). A filosofia de Espinosa para além do corpo-máquina: o paralelismo em questão. *Cadernos Espinosanos (USP)*, xv, p. 111/6-139.
- Itokazu, E. M. (2008). Tempo, Duração e Eternidade na Filosofia de Espinosa. Tese doutorado. São Paulo: FFLCH USP.
- Itokazu, E. M. (2012). Au-delà du temps-mesure: la question du temps chez Spinoza. in: *Ontologia e temporalità*. Milano:Ghibli.
- Jones, C.B., Dorrian, J., Rajaratnan, S.M.W. & Dawson, D. (2005). Working hours regulations and fatigue in transportation: a comparative analysis. *Safety Science*. 43, 225-252.
- Loterio, C.P. (1998). Percepção dos comandantes de Boeing 767 da aviação civil brasileira sobre as repercussões das condições de trabalho na saúde. Dissertação de mestrado. Rio de Janeiro: Escola Nacional de Saúde Pública Fiocruz.
- Postone, M. (1993). Time, labour and social domination. Cambridge: Cambridge University Press.
- Reinberg, A., Vieux, N. & Andlauer, P. (eds) (1991). Night and shift work: biological and social aspects. Oxford: Pergamon.
- Ricoeur, P. (1983) Temps et récit. Paris: Seuil.
- Spinoza, B. (2002). The principles of cartesian philosophy. Indianapolis: Hackett.
- Spinoza, B. (2005). Ethics. New York: Penguin.
- Thompson, E.P. (1967). Time, work-discipline and industrial capitalism. *Past and present*, 38, 56-97.
- Thompson, E.P. (1993). Customs in common. New York: Penguin.
- Williamson, A. & Friswell, R. (2011). Investigating the relative effects of sleep deprivation and time of day on fatigue and performance. *Accident Analysis and Prevention*, 43 (3), 690-697.
- Wright Jr, K. P., Bogan, R. K. & Wyatt, J. (2013). Shift work and the assessment and management of shift work disorder. *Sleep Medicine Reviews*, 17 (1), 41-54.