

SETTORE TECNICO



CORSO
UEFA PRO

**TACTICAL PERIODIZATION
FOOTBALL ORGANIZED BY
THE OPERATIONALIZATION OF A
GAME MODEL**

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To my family,
for always supporting me.

Special Thanks

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Synthesis

In football training methodology, the player is considered an indivisible unit. It's therefore necessary that the training includes a functional interconnection of the four dimensions that make up football performance from a technical, physical and psychological standpoint. These, however, have been constantly reduced and 'impoverished' by a mechanical vision of Cartesian origin, whose methodological aim is to maximize them, in separate form with the belief that there is a compounding effect on the (overall) competitive performance. Upon examining the training methodologies and the related planning present in today's elite football, it becomes apparent how limited the working methods are with means and resources so ever dependent on physical dimension.

In this paper, a study was conducted on the bibliographic material relating to a new methodology studied in the last forty years at the University of Oporto (Portugal), whose concepts want to go beyond the limits of planning and programming for the preparation of football teams.

The complex nature of situational team sports highlights the importance of the tactical dimension as a key to reading, analyzing and responding to this complexity. The theory considers tactics to be the nucleus of competitive preparation and as such the central element from which the remaining performance areas depend on. This is where tactical periodization is born. It's a new methodology focused on a vision closer to the game. Tactical periodization is faithful to the needs of team football. It is achieved through the attentive choice and operationalization of a specific game model. It also translates the theoretical model (based on game principles) into procedural operations that manifest themselves in the form of observable and reproducible behaviors. Thus, training becomes a space in which it is possible to 'simulate' the conceptual model of the game that one wants to achieve in the match without the need to consider analytically the inseparability of the components of a complex sporting practice such as football.

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Introduction

There are several factors that affect the performance of footballers and even more so of football teams.

This places us in front of numerous methodological questions on training, which compel us to constantly identify challenging situations and a constant reflection on their resolution.

The planning and periodization processes are limited due to methodological factors for those who work in elite football on a daily basis which are mainly linked to a misunderstanding of the needs within football. Today's training plans continue to be focused mainly on the physical domain compared to the tactical one. To the detriment of the development of a conscious game identity they prioritize the development of a set of physical skills.

My thesis today aims to outline the methodological concepts commonly practiced and known in today's football, and subsequently to illustrate a new type of periodization that will highlight the stark differences as it centers around the tactical domain. As such, it puts utmost importance on the tactical dimension, by virtue of establishing a game model and a process guided by dynamic planning, in which the physical component of training, as well as the other focus areas, will be tied in, however, under the influence of the tactical dimension.

Therefore, the objective of this thesis owes the substantial differences between the methodologies used in football and the tactical periodization (also known as TP), where and why TP was born, the influences that TP has on the components on performance in football, the creation and organization of a game model, the methodological principles that regulate the training, the structure and the contents of the Morphocycle, the physical focus area according to TP, the way in which this methodology faces the new proprioception, all seen through this new approach from Portugal.

CHAPTER 1 Football as a complex phenomenon: dimensions that interact and do not add up

"The match is the environment of uncertainty, a fog that spreads across two thirds of the game's events: only intelligence that blends with experience can solve the riddle". (G. Giacometti, S. Venturi, R. Sassi, 2013)

1.1 What is football?

Football is a team sport in which two open and adaptive systems face each other, each made up of eleven elements that interact and cooperate with each other in a competitive setting (the pitch). They adopt common behaviors in order to achieve a goal of collective interest which by virtue of their characteristics influences how a team both operates and performs.

With this simple definition it is evident that this sport is something more complex than a simple kick to a ball. Furthermore, considering that the game is regulated by a series of rules and by two opposing sides who, in addition to trying to achieve their objectives, will also try to organize themselves to prevent the opponent from achieving a working system in every which way, you can understand how the course of a match is non-linear and unpredictable.

"If a football team is a system, the game must therefore be like a system of systems, a ' complex system' as it expresses the cooperative relations between teammates and the opposing relations with the adversary. In short, it is the battle between two systems (teams) for a final goal (victory)." (Gomes, 2010)

Football is by its nature a complex and unpredictable phenomenon, which is why there is a need for the coach to propose identifiable references to game situations, or in other words, to transmit to the team a clear style of play allowing

it to develop a sense of stability and organization. The goal is to confidently address the unpredictable challenges as a direct result of the complexity of the game.

A need arises which demands that there be effective methodological planning when it comes to training in football.

1.2 Football training

Before explaining concepts on which methodological training plans are based on and physical periodization are applied, it is necessary to clarify what is meant by 'training', 'planning' and 'periodization'.

TRAINING

In sport, by training we mean the process carried out by the athlete and directed by the coach, which aims to improve sports performance. The goal of training is to propose to the athlete, in an organized way, the necessary means that allow him to improve in practice so as to improve the performance in competition. A training session is comprised of a 'mix' of focus areas, of physiological, biomechanical, psychological, pedagogical, biochemical and anatomical impact validating the term 'training science' in its own right.

It is important to underline that a training must be proposed in an 'organized way' in support of a planning and periodization process rooted in training science, of which Matveev is considered the founder.

PLANNING

Planning the training process allows us to develop a method that defines the goals to be achieved, with a series of goal posts in terms of a step-by-step implementation supported by continuous analysis.

This process begins with the analysis of the athlete's characteristics and his or her initial performance level and ends with the period in which the athlete must produce maximum performance, i.e. the competition period.

The quality at which these performances will be expressed is proportional to the degree they master/ successfully combine the physical, technical, tactical and psychological components.

Designing a training plan is only the initial aspect of planning. The continuous analysis and verification of both the procedures used and the (partial) results obtained during each stage of planning represent the second fundamental aspect.

The most important features of training planning are:

- adaptability;
- planning based on specific competitions ;
- periodization of the 'physical/ athletic load'.

PERIODIZATION

To periodize means to determine, vary and distribute the physical work loads during training over the span of a sports season in monthly, weekly and daily cycles in an effort to efficiently manage the sessions, the work load/ recovery times as well as the resources needed to achieve predetermined monthly goals.

1.3 Current concepts of football training

Traditional training methods include:

- the separation of the physical, psychological, technical and tactical components of training due to a mechanical and reductionist view;
- training logic very far from the real needs from the conditions and situations that occur while competing in a game;
- sessions are divided into parts whereby the training components are taught separately and maximized from an analytical lens aimed at obtaining an overall transfer in terms of performance during a match;
- analytical exercises that are not specific to the game, but rather to maximize the individual competitive components;
- the game is broken down into single technical qualities or tactical movements that the coach has implemented in training in order to improve execution;
- the decontextualized training of individual game actions aimed at in-game execution with little to no consideration to the complexity of the game;
- centered around the physical component with a season-long view of the training cycle according to athletic goal-setting;
- conditional work carried out without a ball;

Training through the integrated method includes:

- attempts to combine the physical, psychological, technical and tactical components of training but always according to a reductionist logic;
- training logics which come near to the game, however, they remain far from the real/ complex conditions a team encounters;

- division of the training session into parts which, while promoting the integration of all dimensions of the game, have the purpose of developing a single skill;
- specific analytical exercises with respect to football that use the ball to maximize the individual components;
- a game is broken down into individual situations that the coach transfers into training with the aim of perfecting the execution;
- training standardized game sequences, not taking into account the unpredictability of the game, which as a result thereof, are difficult to be transferred back into the game;
- centered around the physical component with a season-long view of the athletic training cycle of a player;
- training carried out with the ball in which the main focus remains the physical domain similar to the classical methodology, however hidden by the use of the ball.

From a conditional point of view, football training has evolved over time which has allowed it to take on certain characteristics that can be found in the work currently proposed by most of the Italian professional teams. It provides:

- an opportunity during pre-season to present a high volume of conditional training comparable to a container being filled with large volumes of aerobic and anaerobic work loads;
- the development of resistance in form of pre-conditioning for the subsequent improvement of the technique and other conditional skills;
- carrying out specific physical-technical or physical-tactical training after having obtained a good physical shape thanks to comprehensive (holistic) athletic training approach;

- viewing the competitive period as a period of conservation and not one that merely increasing the athletic form of the team;
- the gradual reduction in volume and the increase in terms of intensity in training in the macro-cycle and in the micro-cycle ;
- the use of on-field tests to evaluate and monitor the evolution of the form of players individually.

1.4 The four dimensions of the game

“Limiting the study of movement to merely to motor skills is a mistake; what would lead us to consider motor skills as an instrument, only aimed at execution. Today we know that this isn’t the solution.”

(Ajuriaguerra , 1974, quoted by G. Giacometti, S. Venturi, R. Sassi, 2013)

“A method is not valid if it does not include complexity. We need a method that helps us to think about the complexity of reality, instead of dissolving and mutilating it”.

(E. Morin)

“The nature and diversity of the factors that contribute to sports performance make football a multifactorial structure of great complexity” (Dufor , 1991 quoted by Faria, 1999). It requires a framework that allows for various factors in terms of their specificity.

As per my research, most training manuals refer to the technical component of tactics and the contingent development of physical qualities. "A constant decomposition of the athlete's effort into a fixed number of plots, trying to understand the complexity of the whole through the multiplication of the pseudo constituent parts". (Smith, 1988 quoted by Faria, 1999)

In this context, the appearance of physical, technical, tactical and psychological training takes shape. It affects the knowledge of individual aspects, with the idea that the better you know each part, the better you know the whole.

Despite this, the game is considered as something more than the obvious set of factors on which it is based. "The order or organization of the whole or a system transcends what can be 'offered' by the 'whole' of its parts, when these are considered isolated from each other". (Frade 1985, quoted by Faria, 1999) "The whole is in the part that is in the whole" (Morin, quoted by Moigne, 1994).

As reported by Moigne (1994, quoted by Faria, 1999), "the more one pretends to classify by breaking down intertwined concepts, the more the intelligence of the knowledge built by the deliberate interaction of these concepts is impoverished. A less singular and more general concept of interactivity is needed (interactions of the whole with the parties and of the parties with the other parties)".

"A relationship of interdependence must necessarily exist between training and competition. The competition reflects the processes and results of the preparation as well as the preparation uses methods and means appropriate to the objectives". (Faria, 1999)

There is therefore the need for the athlete, the footballer to be considered as an indivisible functional unit. Consequently, the entire training process must avoid the separation typical of analytical work, focusing instead on the simultaneous training of the four dimensions that constitute football performance specifically- one that favors the development of the overall performance and that holistically reproduces the real conditions occurring in the game.

"Providing a training process for the sum of technical, tactical and physical qualities, will result at best in an internalization of motoric behaviors which remain inadequate to the reality of the game because they compete with one another. They will depend on different signals and stimuli from those that characterize the training situations." (Queiroz, 1982)

CHAPTER 2 The Tactical Periodization

2.1 The birth of a new logic

Tactical periodization was born from the brilliant mind, Professor Victor Manuel da Costa Frade, born in Vila Franca de Beira on 29 September 1944, also known as Vitor Frade.

This methodology proposes a different point of view compared to the previous training logics which until then had dictated the theoretical and methodological guidelines in almost all sports. Born about forty years ago and developed in Portugal at the Faculty of Sport Sciences of the University of Porto, tactical periodization has become known thanks to the sporting results obtained by coaches who have fully or partially applied the principles, such as José Mourinho , André Villas-Boas, Carlos Queiroz, Paulo Sousa, and Vitor Pereira.

The name is comprised of words well known by anyone who works in the sports field, which however they take on a completely new interpretation as per Oliveira (2007): "Periodization' stands for the time needed in order to achieve the style of play desired. 'Tactics' stands for the in-game decision-making, and as such, is a tactical characteristic. The decisions, be it individual or collective ones, are differentiated based on behavior patterns (interactions) and for this reason they should not be considered abstract but rather be constructed into the inter-relational or intentional behavior matrix, and, consequently, must be contextualized and specific to the team."

For Maciel (2010, quoted by Tamarit , 2013): "the name tactical periodization is justified because it is a periodization, or rather the time it takes to acquire the knowledge and evolve in a specific collective intentionality of a style of play, or of a certain 'tactic' throughout the season."

For Frade (2010, quoted by Tamarit , 2013), who first introduced tactical periodization: "the choice of the name 'tactical periodization' is a provocative one since there is a periodization, or the use of a certain time to complete a certain

framework, however, if this periodization is 'tactical', time is used to reach a tactical goal. In fact, the meaning of tactics does not coincide with what is normally attributed to it, but it turns out to be a purely organizational and intentional aspect of the game, which involves the assimilation of principles within the dynamics of a team's game. If this game requires quality, it will take longer to build. So with regard to the name I initially gave it, which is precisely this, tactical periodization, I knew that it would provoke critics as they would claim that periodization is not tactical. And this is my intention, that it appears in a different way, since according to the line of thought all the periodizations that are being applied are a function focus on the physical dimension and of the conditional capacities. This, however, is a function of an overarching tactical dimension."

2.2 The overarching tactical dimension

"The overarching tactical dimension stands for the great coordinator of the entire training process". (Mourinho)

"Tactics is not a physical dimension, it is not technical, it is not psychological, but it needs all three to manifest itself". (Frade, 1996)

Tactical periodization respects the principle of the inseparable integrity of the game, incorporating in each exercise the four dimensions that make up football performance.

La TATTICA come una delle quattro dimensioni del gioco:

- Dimensione Tattica;
- Dimensione Tecnica;
- Dimensione Psicologica;
- Dimensione Fisica.



Drawing by Oliveira, modified by Vulcano (2015)

Even though acquiring the knowledge and developing the football skills must necessarily be treated holistically, the four dimensions that make up the performance cannot be evaluated in equal measure. A hierarchy is necessary in accordance with the exercise that is being considered. If the game model (which will be addressed in the following chapters) is the reference of the whole process, the tactical dimension will always serve as the guiding light of the exercises while the other factors will emerge proportionate to the specific attention they merit.

Professor Vitor Frade (1996, quoted by Tamarit , 2007) states that "tactics are not a physical dimension, nor a technical or psychological one. Tactics needs all three dimensions to manifest itself". Amieiro, Oliveira, Resende and Barreto (2009) share the same opinion: "Any technical or physical action always has an underlying tactical intent."

The tactical factor appears as something that is above the other dimensions, not distinguishing itself from them, but incorporating them. Tactics is therefore to be considered an overarching dimension that guides the entire training process and assumes central importance, as it defines and also applies all those aspects that the coach wants the athlete to put into practice (as per the game model) during the competition, specifically in the various phases of the game (ie the offensive

and defensive phase, as well as the positive/attacking transition and the negative/defending transition).



La TATTICA come SOVRADIMENSIONE del gioco da cui dipende lo sviluppo delle altre dimensioni:

- Dimensione Tecnica;
- Dimensione Psicologica;
- Dimensione Fisica;
- Dimensione Strategica.

Drawing by Oliveira, modified by Vulcano (2015)

This highlights the importance of having a clearly defined tactical culture in each of the four phases and, based on these moments of football in an effort to deliver maximum consistency (application/ delivery of the game model).

2.3 Tactics: definition of a special one

Let us now explain through the words of the Portuguese coach José Mourinho (quoted by Amiero , Oliveira, Resende , Barreto, 2006) what the vision is when it comes to a overarching tactical dimension and the application thereof in a periodized manner.

"Tactics represent the set of behaviors that you want to get from the team, what the team must put into practice regularly. This set of principles shapes the game

model". "It stands for a specific behavioral culture that requires training and it is an asset that is built over time."

"The most important thing in a team is to have a specific game model, a set of game principles, to know them thoroughly, to interpret them well, regardless of which eleven I choose to play".

"Playing as a team means having an organization, certain rules that ensure that in the four phases of the game all players think about the same goal simultaneously. Such an end goal can be achieved with time, work and tranquility. One thing is for a player to acquire the knowledge and try to do what I want and another thing is to get them to do it as a team. For this we need time."

It is evident how this methodology greatly differs from traditional methodologies. In fact, it considers the dynamics of behaviors and relationships that the team must instill through experiential training in order to be able to perform them in the game according to the situations and moments of the game. This is in sharp contrast to the status-zuo in which tactics are confined to closed and pre-set mechanisms trained in a decontextualized form. In other words, the contextual interference in a game will prevent them from expressing themselves consistently.

2.4 The idea of play: an adaptive concept

The game that a team expresses is not a spontaneous, nor a natural phenomenon. The confident expression of a team is not the result of luck, nor is it an abstract conscious effort of self-organization. These traits are found on the courts where street football is played among children and young people to express the essence of the playful aspect of the game. The game of a professional team is the result of a structured approach, in which the coach transfers his idea of the game. The game model is obtained thanks to the coach's research in pursuit of a precise way of interpreting the game, in which the coach identifies specific intentions based

on his football culture. The game of a team goes beyond an organized process. When it comes to a coach's game model nothing happens randomly. At the moment of its construction, the coach knows what he wants to achieve and how he wants his idea of the game to be realized.

This justifies why different ways of playing football and playing styles exist. Each coach gives birth to and systematizes his own idea of the game. The coach will have to define the behaviors that the team will apply in each of the four phases and will have to structure the game in principles and sub principles.

"When the coach with his game idea will find himself having to face a new setting: a new country with its culture, a new club with its history and goals, new players with their own ideas and experience, this game idea will be strongly influenced by these factors. The intelligent coach will model it according to the circumstances, maintaining the fabric of his game idea and remaining coherent (with the sole intention of being efficient and effective) within the new setting you are exposed to. When these two factors, namely the coach's game idea and the environment, enter into interaction, the game model is formed. That is the game that the coach wants his team to play (beyond the ideal), taking into account the reality the team encounters. This will be the game model at inception- the idea of a collective game identity- not merely owned by the coach- among all those who are part of the team, ie collective game ownership". (Tamarit, 2013)

We must therefore be aware of the diversity and adversity that we can run into. Since football represents an evolving dimension in constant change, the game will require the willingness to changes and adaptations to the original idea of the game we wanted to realize initially in order to make sure that it evolves and adapts to different situations, both in the short and long term.

Consequently, making adjustments should not be considered an error or a loss of identity. Indeed, it is useful to modify some marginal aspects (sub -principles and sub-sub- principles) to better equip the game model and to support its course based on the needs of the team. This ensures that the game model is never considered finished. A game model is never stagnant.

2.5 The team as a non-mechanical mechanism

"The development of the tactical attitude is the premise to develop the ability to decide and decide quickly, this being dependent on the attitude of conceiving solutions".
(Gréhaigne , 1992 quoted by Faria, 1999)

As Tamarit (2007) states "through systematic repetition in a process based on specificity, we create the habits that will allow the principles and sub -principles to emerge that make up the intended game model, which allow for an anticipation of the desired action".

"We try to get the player used to solving problems according to his own logic of behavior in the 'here and now'. Therefore, it cannot be mechanical". (Gomes, 2006 cited by Tamarit , 2007)

The purpose of tactical periodization, as a result, is not to have a team that re-proposes plays mechanically or sequences of pre-determined schemes. The goal is to provide the team with clear and hierarchical rules, models of behavior with unified and unifying principles, which allow the players to develop a common thought process. It evolves into a form of team thinking. A functioning logic is created that will lead to saving time and energy in the analysis and decision making and consequently to an anticipation of the action to which they can relate to.

"This is due to the affinity that players have with collective principles, which, promote a logic that makes certain behaviors emerge and that the team leans towards. This occurs in the decision-making and intentionality in-game and not as a pre-established scheme. There is no equation to resolve a complex situation. It will therefore be easier to resolve situations depending on the ability and the amount of the players that assimilate the habit ". (Tamarit , 2013)

The football match is an unstable setting in constant change and being able to read it helps to consciously manipulate unexpected situations that manifest themselves. That does not mean that they are unpredictable. Having determined that a football team is a complex adaptive system- a system capable of adapting and changing based on the experience (characterized by the ability to evolve)- we can deduce that experiential and qualitative training will help players in learning 'football' as well as the unpredictability of the situations that present themselves.

Football is not subject to rules, it has no pre-established and exact formulas that solve it. It is governed by an in-game theorem: tactical periodization.

For this reason Oliveira (2006) states that "the principles of play can never be understood as ends in themselves , a stereotyped sequence of actions that ends in the manifestation of an unconscious solution (a closed mechanism), but as the beginning of a behavior that the coach expects from the team in collective terms as well as from the players in individual terms."

It is therefore evident how the principles of the game take the form of a compass, of lines of thought that orient the players' behavior on the pitch, going beyond the mechanical concept and transforming it into a 'non-mechanical mechanism'. According to this new vision, the players are directed towards people through the decisions inherent to the situations identified without constraining their development, so that the perceived and imprinted actions are free and unpredictable in the outcome. They are guided by the collective understanding of the team, towards common and shared objectives.

"Tactical Periodization therefore creates non-mechanized mechanisms that do not allow the robotization of the team through an excess of organization, which usually creates a conditioned, forced style of play". (Tamarit, 2013)

2.6 The element that strengthens the organization: creativity

"We cannot have creativity without intentionality".(Portoles , 2007 cited by Tamarit , 2009)

"Work, application, team play, mutual help: this is what we need. Fantasy is a surplus, it comes when you know. If you don't know, there is no fantasy." (Sacchi, 2008)

A football team is a whole system in continuous reorganization, a phenomenon in constant search of its homeostasis, its balance within the entropy of the game of football.

What is accomplished with tactical periodization is the conscious manipulation of team play, through the organization of a game model and the application in training of its principles and sub -principles which manifest themselves in the game with constant and regular team behavior. This characterizes the game as something scientific. However, since football is a sport rich in independent variables, within these regularities there is an uncontrollable and unexpected part, namely the part of detail (sub -principles) and creativity. This does not appear in conflict with the regularities of the intended game, but rather it exemplifies an interdependent relationship since the principles of the game model are not rigid and closed rules with knowledge of cause and effect, but adaptive references to a constantly changing context.

"If the team responds mechanically and only finds the solutions you give them, this very clearly reflects on the way they are training." (Carvalho , 2010 cited by Tamarit , 2013)

The organization of the game alone, therefore, does not appear to be functional, which is why players must feel free to be able to create and express within the principles they relate to.

Consequently, a game model will have to be built that promotes and emphasizes creativity rather than limiting it, which makes it an empowering factor by envisaging it as a real sub -sub- principle of play in a sort of disorder created within the order.

"There is creativity in decision making, an originality in the search for solutions by the player, however, always with the intention (game principles) to adapt himself to the circumstances." (Tamarit, 2013)

This 'creative organization' must be sought in contextual and experiential exercises that promote a continuous search for solutions and are implemented within a training logic that applies the chosen game model, thus standing for a specific quality, namely creativity, not to be misrepresented as an abstract quality.

Creative intentionality is hardly obtained if the training is merely analytical and decontextualized within the game. "In this way, the game situations with their inherent variability, alternation and uncertainty, determine the direction of the behaviors adopted by the players, for which they are required to have a permanent tactical attitude."

(Garganta, 1995)

CHAPTER 3 The Game Model

3.1 Definition of Model

“This method must provide the operational principles to think independently.
After all, method means pathway”.
(Morin , 1999)

It is irrational to think about tactical periodization without taking into consideration the game model adopted. So, before periodizing it is necessary to define this same model.

Generally speaking, a model is “a convenient system of reference points that reduces entities / phenomena otherwise not representable in an empirical description”. (Treccani, 2015)

As a game model, on the other hand, "we must understand the hierarchical set of behavior principles, from which the sub -principles and sub-sub- principles of the team derive". (Tossani , 2009)

The game models methodically and systematically describe a system of relationships that are established between the different elements of the team in a given game, clearly indicating the tasks and the technical-tactical behaviors that a coach wants from his players, in accordance with the their level of aptitude and skill.

They determine the actions that the coach expects the team to manifest in the four phases that make up the cycle of the game:

A phase of possession (P):

- Organized Attack (AO);
- Attacking Transition (T+);

In the Non-Possession Phase (FNP):

- Organized Defense (DO);
- Defensive (T-) transition.

Through a systemic vision of tactical periodization an attempt is made to reduce the complexity of the game, and as such, to produce a specific game model to obtain a improved performance.

3.2 The cycle of the Game Model

"The modeling of complexity allows interested the athlets to own it from a cognitive standpoint building their own intentional intelligence".

(Le Mogne)

Care must be taken not to confuse the game idea with the game model. The game idea is a fundamental prerequisite on which the resulting game model is based. The game model takes shape when the study of the game idea as a prior intention meets the circumstances of its implementation, which at times are not ponderable and consequently lead to a 'remodeling' of the game model. It is therefore important to have a preliminary idea from which to start, a game "intention " with which the players can identify, even if this may not correspond to the actual game they will play on the pitch.

3.2.1 The Game Model as a prior intention

"The game model is created first as a mental representation in the players and then develops on the pitch. Decisions and interactions between players are primarily anticipated as images" (Gomes, 2008)

Are the game idea and the game model as a preliminary intention the same thing? The answer is no. The game idea is the kind of football the coach has in mind, an ideal form of play. It is critical that the coach studies and reflects on the type of game he/she expects to represent and structures it according to the fundamental without interrupting its line of thought. The coach also creates his own, sub-principles and sub-sub-principles. This is done by respecting the way in which the team must attack, defend and how the coach intends that it transits from the attacking phase to the defensive phase and vice versa.

Upon the hiring of the coach by a new club and he/she will find himself having to approach a new context. The idea of the game will be strongly influenced by everything that surrounds the sporting aspect. The coach will have to intelligently model it according to the circumstantial needs, maintaining the matrix of his idea, however, satisfying with the intention of being efficient and effective, the needs of the context in which it is inserted.

The game model as a prior intention is therefore conditioned by the interaction of various factors such as:

- Culture of the country;
- Culture and history of the Club;
- Corporate structure and objectives of the Club;
- the coach's idea of the game;
- the playing system;
- Characteristics and level of the players;

- Exceptional factors such as religious customs, commercial pressures, weather, injuries, series of positive or negative results, recruitment during the current season, etc.

"It is therefore necessary to know the culture of the club, to know the culture of football in this country, and only after having a perspective and a plan that integrates with all the factors, to highlight if there are things in conflict with the ideas of the coach and what is presented in reality. After all, it is the coach who has to go towards reality by modifying and shaping his ideas as the opposite turns out to be much more difficult, if not unlikely." (Tamarit , 2013)

The Game Model is therefore something unique and unrepeatable, a structure tailored to the context in which it is made and therefore cannot move from one team to another together with the coach.

3.2.2 The game model as intended when put in action

""Action creates the organization that creates action"

(Edgar Morin)

"The game model is everything: it is the constant evolution of the game idea within the context and that is what happens in its realization"

(Vitor Frade)

The idea of the game that inserts and adapts itself to any given setting is realized in the game model as a prior intention. When it is implemented in the form of a game during training, in matches and in everything that happens during its development in the 'here and now', it passes from intention to action.

This passage from 'intention' to 'action' will produce an unforeseen act and will end up changing the prior intention and the game model in some of its details, producing results different from those expected at the level of the sub-principles and sub-sub-principles, giving it a unique configuration while maintaining its conceptual matrix. The coach is therefore faced with a new analysis on the game model that is conditioned by the way in which the team expresses the prior intention that inspires their game on the pitch.

He will have to reflect on the substantial differences that emerge between the game model as intended initially compared to the game model that is put into action. In the ideal game model there is absolute harmony between what was intended initially and the intended action, but since this hypothesis is not feasible, it will be the task and responsibility of the coach to make sure that game's 'intentions' correspond as much as possible. For this to happen the coach will have a key role in participating in the exercises in training and creating emotions and feelings in the 'here and now' of (study by the Portuguese neuroscientist Antonio Damasio).

"The coach will have to be very focused and have a great sensitivity towards everything that is happening since even the smallest aspect can have repercussions on the outcome of his work directing the result towards success or failure." (Tamarit, 2013)

We can therefore consider the game model as something that cannot be completed, but rather a set of reference points that is built and will never be completed, a phenomenon in constant remodeling according to what is called the cycle of the game model.

(Prior intention > intention in action > leads to a new prior intention).



Drawing by Tamarit (2010), modified by Vulcano (2015)

"Nonetheless, no matter how a game model is developed, it will put into question systematically. That is, it must be built progressively, de-constructed and the be re -built ". (Castelo, 1994 quoted by Faria, 1999).

"The legitimation of symbolic models does not coincide with an experimental and iconic analogy. It goes through an analogy of simulated behaviors, simulations carried out above symbolic models. The simulation of models is not a neutral simulation: it affects the models themselves. All knowledge is structurally circular and auto-referential."(Le Moigne, quoted by Tamarit, 2002)

The strong influence in the 'here and the now' in the development process should be emphasized since the coach will have to pay lots of attention to everything that happens during training and matches. This because the intention put something in action can bring out, due to the influence of single actions on the system, an evolution of some aspects of the game model. These can be details and skills of the team not foreseen and which go beyond the sum of the single parts that form the system. They can enrich the system. According to the axiom that "the whole is greater than the sum of the individual parts." (Aristotle)

Contrary to what one might suppose, it turns out that tactical periodization, the fundamental unit on which the training is centered around the player, not intended as any repetitive part of the whole, but rather a fractal which contains within it the characteristics and references of the collective it contributes to forming.

CHAPTER 4 Training seen through the eyes of tactical periodization

4.1 The game-training link

"This way, the game model and its principles determine the exercises to be adopted, expecting its own degree of complexity, difficulty of realization, needs at the motoric skill level, the degree of adequate provoked stimulation and its specificity".

(Bondartchuck , 1992)

"The organization of the training process must start from the original reference point: the game model of a team". (Tschiene , quoted by Garganta 1997)

Football has very special properties that require highly specific preparation and training. It is therefore important to have a broad knowledge of the characteristics and needs of football performance, so as to be able to achieve adequate preparation for trainings. The nature of this sport affects the attitudes of the players, expressed in tactical-technical aspects and in functional energetic aspects. During the game it is critically important to determine the objectives, the resources and the most appropriate training methods.

"The most important and difficult task of training is to correlate the didactic logic with the logic of the game; a systematic analysis of the structure of the game is necessary in order to clearly and unequivocally define its internal logic." (Teodorescu , 1983 cited by Faria, 1999)

"The intervention process (training) must occur from a methodical and organized reflection of the competitive analysis of the game's contents, adjusting and adapting itself to this reality (Castelo, 1994 cited by Faria, 1999).

The goal of training is therefore to simulate the game of the trained team in the most authentic and relatable way possible.

4.2 The concept of simulation

By simulation we mean a realistic model that makes it possible to evaluate and predict the unfolding of a series of events or processes of specific conditions conducted by the analyst.

"Simulations are a very powerful experimental analysis tool used in many scientific and technological fields dictated by the difficulty or impossibility to reproduce them in the real laboratory of the actual conditions based on the great calculation possibilities provided by information technology and processing systems. The simulation, in fact, is nothing other than the transposition in logic-mathematical-procedural terms of a 'conceptual model' of reality. This conceptual model can be defined as the set of processes that take place in the system in order to understand the operating logic of the system itself. As a result, it is comparable to a sort of virtual laboratory which often also allows a reduction in study costs compared to complex experiments carried out in a real laboratory." (Wikipedia, 2015)

The simulation, therefore, can also be used in sport as an analysis of complex dynamic systems, and is nothing more than the transposition into training of a 'conceptual model' of reality. This model (processes) of play as a prior intention, can be like the set of behaviors (processes) that take place within the game (evaluated system) in the various phases of the game and whose entirety allows us to understand the logic of its application (coherent relationship between principles, sub-principles and sub-sub-principles of play) and of the system itself.

The simulation, therefore, allows the analysis of reality and a high level of mastery of the complexity of the system detail with ease. This means that a large number of useful information can be obtained from it. The price to pay for completeness is obviously time. The operations of construction and analysis of the game model are in fact very long, so that there is the possibility of obtaining a model (of game as previous intentions) adhering to reality (Game model as intentions in Action).

This is the concept behind the logic of the specificity of training in Tactical Periodization. A simulation of a portion of the game, for example, allows you to predict and evaluate the behavior of the players in the face of requests and constraints from the coach.

4.3 The methodological principles

The training logic of tactical periodization is based on three fundamental principles, which must be understood collectively as one the same as if they were a single principle. They are: the principle of propensities, the principle of complex progression and the principle of horizontal alternation in specificity.

In order for there to be an adequate articulation of meaning "there is a need for the methodologies to manifest themselves in an interdependent form". (Maciel 2010, quoted by Tamarit , 2013)

To direct these three principles there is the overarching principle of specificity (principle of principles) which places the condition that everything that is proposed and carried out during training is carried out in relation to the game model.

To respect the overarching principle exercise it its specificity, the proposals of the time must develop all the dimensions of the player, such as the cognitive, coordinative, socio-affective, emotional-volitional, creative-expressive,

conditional and at the same have the pedagogical purposes useful for improving the aspects of the game.

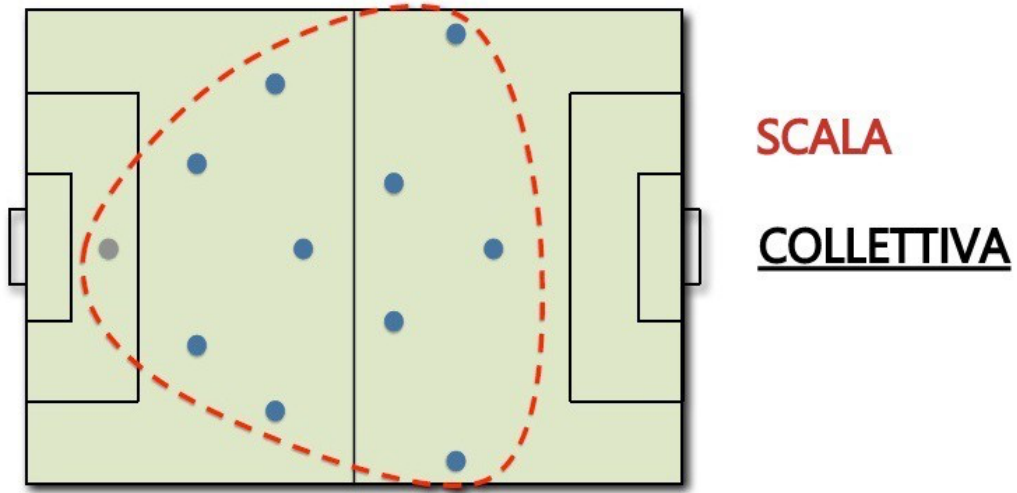
Therefore, there must be a specific type of application for the development of the game model and the dimensions of the player, each coaching proposal must be structured on a contextualized basis with the perennial aim of imprinting into the brain those dynamics of behaviors that improve the execution of the team's game. For this to happen effectively each exercise must necessarily have a series of characteristics:

- Players who fall within the objectives and purposes of the exercise within the game in its complexity. To make this happen it will be essential to have a overall understanding of the game via mental images and experiences of the game itself. In tactical periodization, this aspect will be focused on during the first training week in order to establish the 'how to do' as well as the 'knowing how to do'.
- Players can stay focused while practicing. It will be possible to obtain an exercise that will be carried out in specific tactical settings and at maximum intensity for its entire duration.
- The coach will have to intervene in an appropriate form on the interactions that are sought in this exercise. Through his intervention he will his demands in terms of expectations and create both positive and negative emotions and feelings based on the interactions that the players will highlight during application.

By respecting these aspects we will have 'potentially specific' exercises.

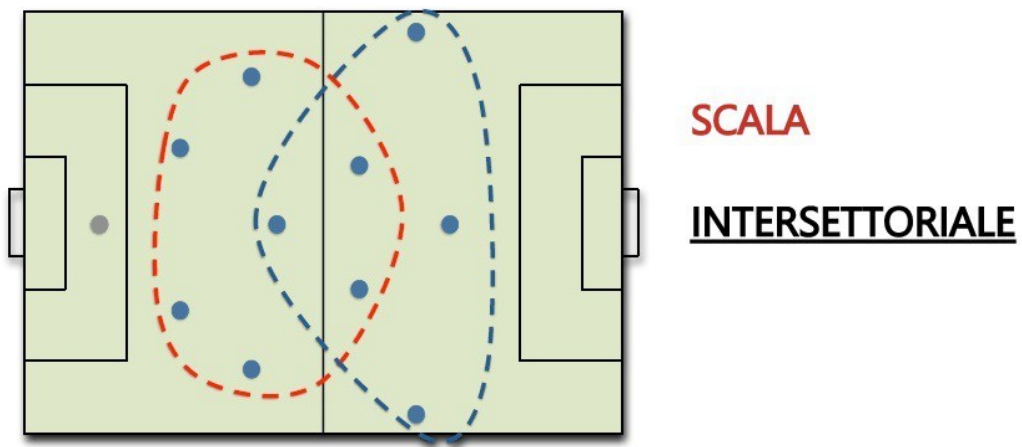
The exercises that will be used in the application of the game model in accordance with the different levels of organization, will have to assume different dimensions and scales based on the planning (macro, meso or micro) and the type of principles (overarching-, sub- and sub-sub principles) that will be chosen in training, according to the specific method in terms of horizontal alternation:

Collective scale:



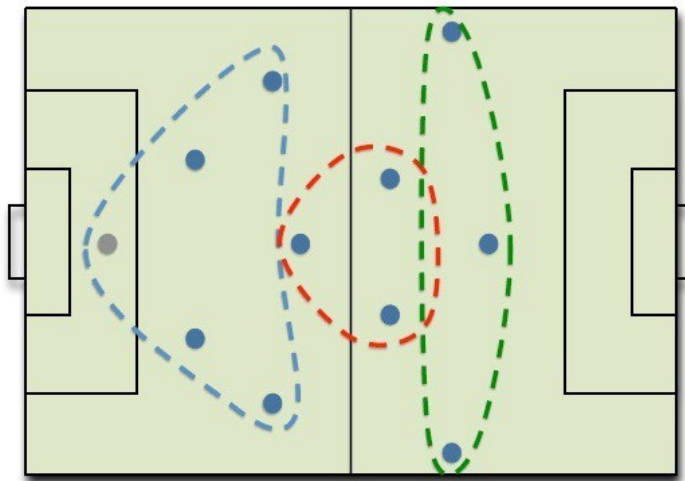
Drawing by Oliveira, modified by Vulcano (2015)

intersectoral scale:



Drawing by Oliveira, modified by Vulcano (2015)

sectoral scale:

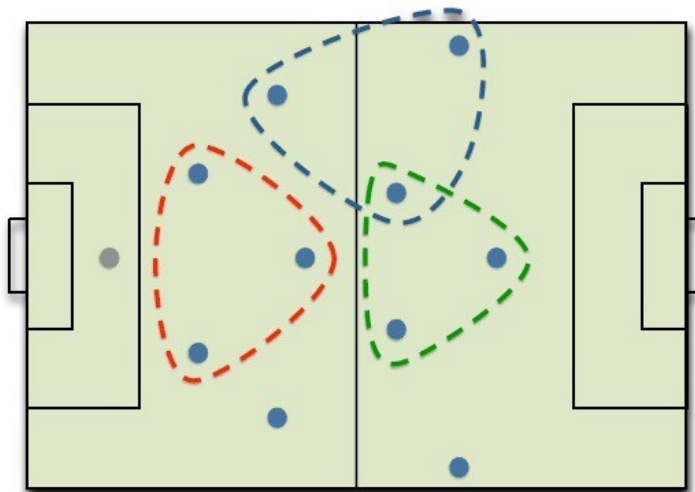


SCALA

SETTORIALE

Drawing by Oliveira, modified by Vulcano (2015)

group scale:

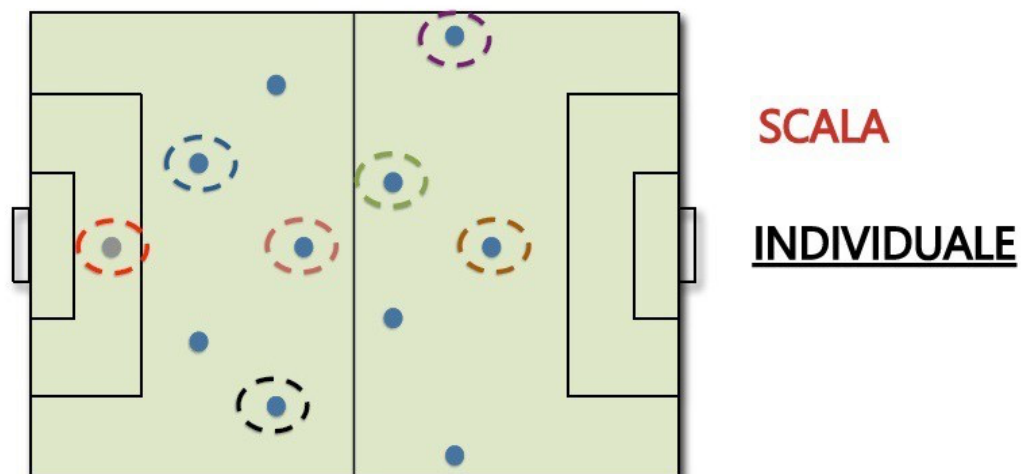


SCALA

GRUPPALE

Drawing by Oliveira, modified by Vulcano (2015)

Individual scale:



Drawing by Oliveira, modified by Vulcano (2015)

The tactical specificity that permeates the entire process allows us to obtain specificity at all levels and in all the dimensions that make up the performance: physical, technical, psychological and, at times, strategic.

"This model of preparation and of players refers to a tactical preparation that constantly takes into account the type of stresses that the model and its principles require, as well as the type of players with characteristics and skills 'appropriate' to the needs of the model itself." (Frade , 1985 quoted by Faria, 1999)

4.3.1 The principle of propensities

Respecting the principle of propensities means creating and manipulating attentively the exercises with the aim of shaping game competitions whose objectives and rules will allow the constant manifestation of situations in which

the desired behaviors and actions will be realized. Thanks to the repetitiveness with which these interactions occur, players will be able to 'live' them a large number of times by acquiring them at all levels.

The management of these drills is a crucial aspect for there to be the transfer from training to the performance of the team in the match. The tasks of the coach must be carried out with respect to the execution of the exercise in three moments:

- before the execution creating favorable and effective competitive drills;
- during the execution intervening in the 'here and now';
- after the execution through feedback.

This principle is what allows you to have a systematic repetition of contextualized situations and not a systemic repetition of pre-established schemes, which is very important for the learning process and for the assimilation and imprinting of the game model's principles.

Maciel (2010, quoted by Tamarit , 2013) reinforces this concept by stating that "learning derives from the assimilation of 'non-mechanical mechanisms', that is, through the 'living' of open, non-deterministic but probabilistic contests. The purpose is therefore not to quantify the number of actions, but to create a competition of exercises that establish a certain dominance of the game related to our form of play, without ceasing to take into account the type of commitment and muscular effort that characterizes that day of the morphocycle. "

It is therefore a matter of referring to the competitive condition and not to behaviors with the aim of creating intentions and habits to create conscious and then subconscious understanding of a set of principles that constitute a form of play. The true systematic repetition, therefore, materializes in the realization and living of the Morphocycle.

Following the principle of propensities, the manifestation and strengthening of the properties of the game model is facilitated, in accordance with the day of the Morphocycle (thanks to the principle of horizontal alternation in specificity) both on a tactical, physical, technical, psychological and sometimes the strategic level. To allow this, it will be essential to obtain a reduction without impoverishment of

the game which will guarantee the desired dominance for each of the training units. This 'reduction' will be both quantitative in terms of the existence of three variables: space, time and number of players that determine the complexity of the exercises as well as qualitative aspects in play.

The complexity of the exercises is the second principle of complex progression which in the short term will have to be manipulated according to the Morphocycle of the specific training day. In the longer term it will have to take into account a gradual progression of the complexity.

"The configuration of the exercises and the way in which our way of playing is trained (without losing specificity) requires that the coach manipulates the variables of space, time and number of players which, despite being quantifiable variables, should not be considered universal in terms of differing players, nor differing teams. Rather they will have to be adjusted on a case-by-case basis in order to safeguard a complex progression. (Vitor Frade , 2010 quoted by Tamarit , 2013)

4.3.2 Linear thinking and complex thinking (in relation to the principle of complex progression)

Starting from the assumption that the principle of complex progression refers to the non-linearity of the team development process (complex system), we present some brief and simple considerations on a topic that deserves to be studied in depth: the differences between linear and complex thinking.

"The concept of linearity is often used to define an idea or a phenomenon (whatever its nature) that is extremely simple, evident, and has a regular development, without unexpected events. It is used to refer to a gradual process without giant logic leaps in order to ensure there is a natural incremental progression.

Linear thinking is distinguished from complex thinking because it tries to explain phenomena, through a linear modulation, according to the logic of:

- causality (cause-effect relationship);
- principle of non-contradiction (sequential links);
- hierarchy (priorities and subordinations);
- order (logical - temporal - space).

and through these logics he tries to reduce them, simplify them, categorize them". (Wikipedia, 2015)

This sequential cause-and-effect view of linear-rational (also called mechanistic) thinking has guided training theories to this day.

A phenomenon is considered linear when to understand it, it can be broken down into the dimensions that compose it. They are independent of each other. A non-linear phenomenon is when they are inter-related between the dimensions that compose making it impossible to separate one from another or to understand the phenomenon step-by-step.

The concept of complexity is used to define an idea or a phenomenon (whatever its nature) which is not simple and evident in understanding and which has an irregularity and a victim of unforeseen events. It is used in reference to a process whose development, although imaginable, is not predictable due to logical leaps and events that interfere in the progression. "Complex thinking, therefore, is distinguished from linear thinking, because it tries to understand phenomena and not to explain them through a set of contributing causes and by providing for a

reticular modulation. Complex thinking is a living thought. As Heidegger said, it is 'thinking thought' ". (Wikipedia, 2015)

The non-linearity of interaction between the components of a system derives its aptitude to exhibit inexplicable properties on the basis of the laws that govern the individual components themselves, as explained by Bridgman (1927 from Wikipedia, 2015): "The emergent behavior of a system is due to non-linearity. The properties of a linear system are in fact additive: the effect of a set of elements is the sum of the elements considered separately, and as a whole new properties don't appear other than the ones that are already present individually. But if there are then new / elements combined, which depend on each other, the complex is different from the sum of the parts which results in new effects."

In football, the complexity of the system (team) does not mean only its intrinsic properties rather than objects (players), but the properties of the set made up of the players, the observer and creator of the game model (coach), and the Game Model itself..

4.3.3 The principle of complex progression

The principle of complex progression has repercussions on the non-linear, and therefore non-predictable development of the team.

This progression occurs on two levels: a general level and a specific level.

These levels, although described individually, interact with each other.

At the level this type of development is related to the hierarchization of principles and sub -principles that has occurred and is taking place in the game model (remember that it is subject to the continuous construction-analysis-remodeling cycle).

It consists in giving precedence to what is considered a priority for the evolution and evolution of the game throughout the season.

From the first week of training in which you want to instill the type of game to the team you will want to respect this principle. It's a snapshot of the game model. Subsequently we will pass, respecting the priorities given by the previous and evolving hierarchy, to the development of the principles and sub-principles of the game that will shape the identity of the team.

To fully respect this principle we will go from a less complex and less detailed training that allows the imprinting of the greater game principles to a more complex training that gradually implements new details; this happens consciously through the implementation of sub- principles and less consciously thanks to the non-linearity of the development of the collective system.

The goal is to introduce the game identity on general terms and then quickly consolidate the matrix through more exercises with a lower cognitive load. The training will then be directed towards the hierarchical development of the principles and sub-principles of the game gradually increasing the complexity of the exercises and raising the level of tactical-technical detail in a more specific manner towards the game model (sub -principles and sub- sub -principles).

The contents of the training process, therefore, start from the general to progress towards the particular and from the simple towards a more sophisticated and complex level of organization. In doing so, we must pay attention to the relationships that exist between the various game principles.

More specifically, it will be necessary to manipulate the complexity of the exercises that are proposed in the individual training sessions. Discontinuity is a must by alternating between exercise time and recovery time in accordance with the day of the morphocycle in which the training itself is occurring. This effort-recovery based alternation focuses not only on the physical dimension as per conventional methodologies, but also on the emotional (cognitive) psychological effort-recovery based alternation. This calibration in terms of complexity based on the morphocycle is aimed at allowing players to prepare for the game in the

best overall shape possible. The complexity of the exercises depends on the relationship between many variables, including:

- complexity of the principles, sub-principles and sub - sub -principles of play and their relationship;
- number of players involved;
- space;
- main muscle contraction system: tension, duration and speed of muscle contraction;
- duration of drill;
- recovery time between exercises.



Drawing by Oliveira, modified from Vulcano (2015)

4.3.4 The principle of horizontal alternation in terms of specificity

During the morphocycle it is necessary to efficiently calibrate and alternate effort and recovery, especially in a dense match schedule, in order to recover from the psychophysical stress that the previous game produced and to be ready for the upcoming one. The objective is to restore optimal physical conditions in order to improve the psychophysical state which will, in turn, allow for a better performance in accordance to the game model.

The principle of specific horizontal alternation affects the bioenergetic and biochemical aspects in training and distributes the different contraction systems in the various days of the morphocycle.

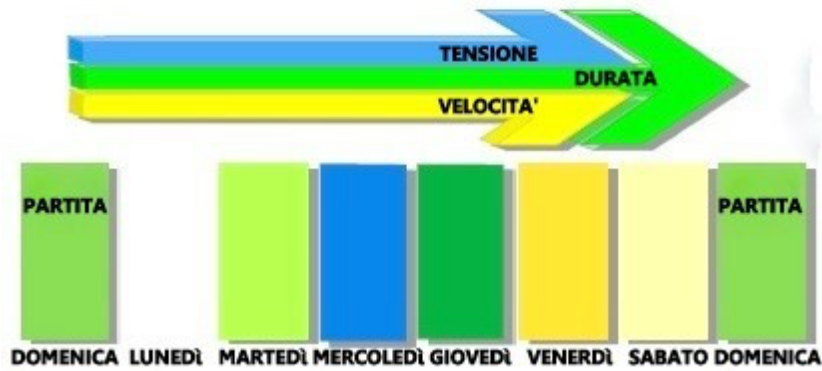
TIPOLOGIE DI REGIME DI CONTRAZIONE:



Drawing by Oliveira, modified by Vulcano (2015)

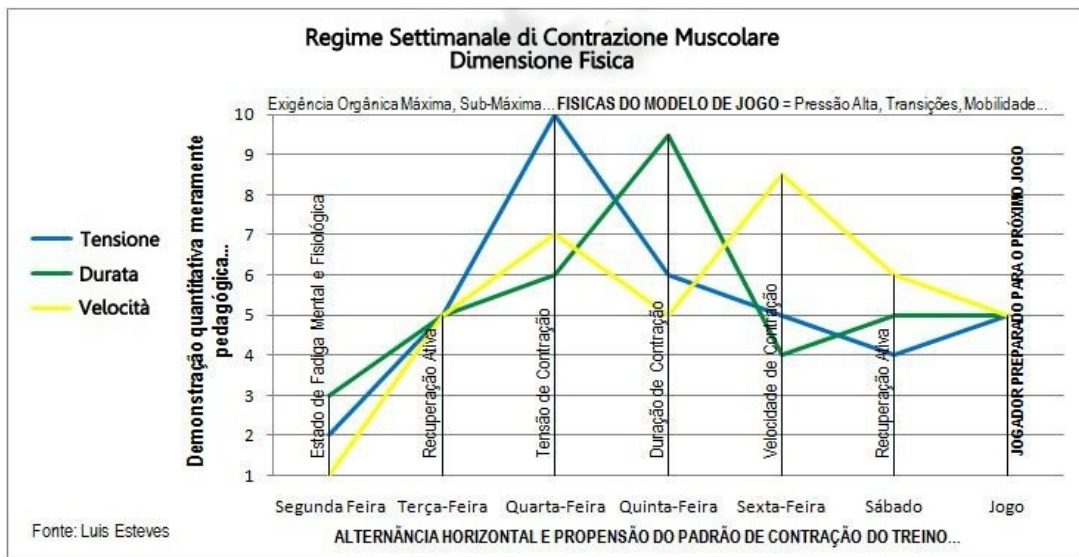
In football these three contraction types interact to create a unique dynamic: the dynamic effort specific to the game of football. These dynamics will be connected during training and will appear in a systematic way. It is possible, however, to lay a higher emphasis on a single contraction system compared to others based on the specific training demands of the coach.

PRINCIPIO DI ALTERNANZA ORIZZONTALE



Drawing by Oliveira, modified by Vulcano (2015)

It will be necessary to recreate a greater or lesser cadence between exercises depending on the day of the morphocycle in which you are training and on the relative muscle contraction system involved.



Esteves drawing , modified from Vulcano (2015)

The physical development resulting from the alternation between effort and recovery will not be just a generic one, but a physical development specific to the game identity. In fact, variable muscle contraction and a metabolism specific to a

game model, greatly differs from a generalist view in terms of physical training. This conventional approach derives from athletics.

"The differentiation in the contraction systems involved in the different training days is determined by taking into account the fractalization of the cycle of the various dimensions that make up the game. The key components of the morfofocycle are:

1. the level of complexity of the greater principles, the sub- principles and the sub-sub-principles.
2. The contraction systems must be proportional to the time we play, which is understood as a part of a whole that is the morphocycle ; act of our playing in the different days that make up the morphocycle;

the strategic dimension and its distribution in the various days that make up the morphocycle ". (Maciel 2010, quoted by Tamarit 2013)

MORFOCICLO (Domenica-Domenica)			Partita	Recupero	Acquisizione Modello di Gioco	Recupero	Partita			
			Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Tactical Dimension:	Complexity of the Play:		Qualitativ E Evaluation	Passive Recover y	Active Recovery	Medium Fraction of the Play	Large Fraction of the Play	Small Fraction of the Play	Predisposition for the Game	Qualitativ E Evaluation
	Level of Organization:				Sub- Principles	Sub- Principles, Sub- principles of Sub- Principles	Great Principles, Sub- Principles	Sub- Principles	Sub-Principles	
	Organization:					Sectoral, Intersectoral	Intersectoral Collective	Sectoral		
Physical Dimension:	Sub dynamic:		Active Recovery		Tension (Specific Strength)	Duration (Specific Endurance)	Speed (Specific Speed)	Active Recovery		
	Muscle Contractions:	Tension:	-	+++	++	+	-/+			
		Duration:	-	-	+	-	-			
		Speed:	-	+	-	++	-/+			
Psychological Dimension:	Emotional Distress:		-	+	++	-	-/+			
Training Exercises:	Discontinuity:		+	++	+	+	++			
	Duration:		90'	90'	90'	90'	60'			
	Density (Space/Number of Players):		+	-	++	+	+			

Drawing by Oliveira, modified by Vulcano (2015)

The principle of horizontal alternation also allows you to train according to a specificity of the game but without necessarily repropounding the same level of physical, technical, tactical and psychological specificity.

4.4 The game trained through game fractals

"The whole is in the part that is in the whole"

(Morin)

"A specific training is different from a training comprised of situational exercises. It is important to emphasize that specificity is ensured and is worked in an effective form, especially if the player's work loads are interconnected with an adopted game model or respective principles, because otherwise we are talking about situational exercises." (Resende , 2002 quoted by Tamarit , 2007)

As outlined extensively in the previous chapters, the exercises must always respect the overarching principle of specificity while the training must always be guided by the tactical dimension. A training session, however, cannot always include exercises that are wholly and fully aligned with the aspired game vision. It must therefore be oriented to a level of detail, to a part of the game's entirety in relation to the organization scales of the game itself: intersectoral, in accordance with the structure of the Morphocycle and the methodological principles that govern it, sectorial, group or individual. In doing so, you do not train parts of the game as if they were terminal, but fractals of the game, which form a key relationship with the adopted tactical-technical model. In fact, they are part of the model being a re-proposal of the same on smaller scales. This is how we remain faithful to the vision of tactical periodization.

"Imagine training some players on the finalization towards the goal. This exercise does not include all moments of the game. However, being presented in line with the methodological principles, it does not break the inseparable uniqueness of the game. Why? First off, because the players must include this part within the entire context, i.e. it must be contextualized within the model of the whole game. And for this to happen the prior intention is to put this situation into practice.

Second, because our exercises will not be closed, but will foresee the unpredictability that is inherent in the game." (Tamarit, 2013)

Obviously the exercises with a higher level of detail represent only a small part of the proposed exercises. The majority will instead be composed of exercises of holistic nature in which all the moments of the game will be present in their continuous and unpredictable alternation. It will therefore be important, whatever the chosen exercise, that there is a presence of intrinsic unpredictability, which will ensure that the players do not have absolute control of the situation but are instead subjected to the contextual interference of its development *ma siano invece sottoposti all'interferenza contestuale del suo svolgimento.*

"The game is an inseparable unit because of its continuous alternation between attack to defense and defense to attack which renders it uncontrollable, as well as in the moments of transition between these two. This alternation does not cease to exist even if the game is not played in 11 against 11. This uniqueness of the game is determined by the absolute lack of control of the situation and this can also be valid for technical improvement since it is possible to work on the playing times of technical gestures and make sure that less complex situations are improved." (Vitor Frade 2010, quoted by Tamarit , 2013)

CHAPTER 5 Tactical Periodization in practice

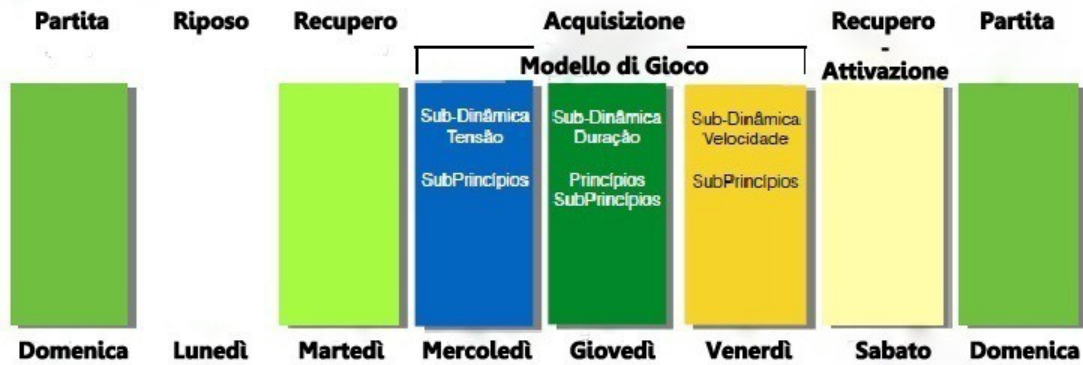
In tactical periodization, training must always include competition as a key component with the aim of increasing the motivation of the players so that the training routine takes place at relative maximum intensities and promotes specific developments very close to the in-game dynamics (high transference between training and match). This can be achieved through tournaments, competitions, goal challenges and prizes in which the competitive aspect is emphasized while imposing game behaviors (intentional interactions). Therefore, everything that will be contained in the training sessions will be carried out according to a way of playing, of a game model that is. It will develop over the course of the season and will have to be revealed in the match. The match day, consequently, is a day that is part of the training process and is essential for evaluating the evolution of the team from a qualitative point of view. What is observed during the game, in fact, will serve to evaluate will determine the analysis of the next Morphocycle.

5.1 The training cell: the Morphocycle

In tactical periodization, training plans are calibrated over a very short period of time that goes from one game to the next and appears to be 'tailored' since it is sown specifically to the needs of the team's development. This time span takes the name of a morphocycle.

MORFOCICLO

DOMENICA-DOMENICA



Drawing by Oliveira, modified by Vulcano (2015)

MORFOCICLO

DOMENICA-SABATO

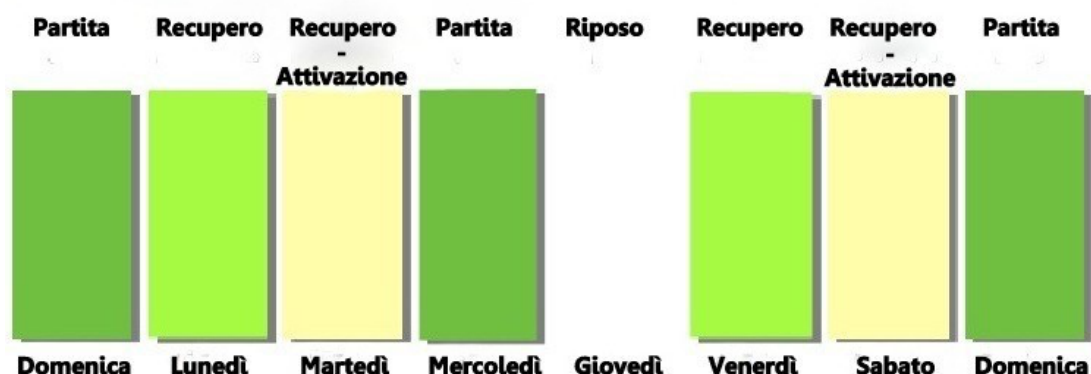


Drawing by Oliveira, modified by Vulcano (2015)

((In the event of midweek matches the morphocycle maintains its structure and principles, adapting itself to the contents).

MORFOCICLO

DOMENICA-MERCOLEDÌ-DOMENICA



Drawing by Oliveira, modified by Vulcano (2015)

This type of ad hoc planning is put into practice because the team is an adaptive complex system. To allow for the game to evolve along with its objectives, the methods and the resources used must be in line with the development of the dynamics thereof. It is utopian to think of being able to plan an entire season or even just a mesocycle attempting to predict the infinite variables that would have to be considered beyond the 'here and now'.

We come to understand how in the implementation of tactical periodization long-range planning is impossible, in fact inadequate.

Since the circumstances control the training process, it is only right to define the general objectives of the morphocycle and then check the work and the results obtained on a daily basis at which point you plan the subsequent training session.

"Both, the morphocycle -in other words the period that separates two official matches- as well as the game model, have a unique characteristic because they evolve constantly as they represent the outcome of the interaction between three different key factors:

- the game model;
- the indications from the previous game;
- the characteristics of the next opponent.

The interrelation between these three different factors will lead to the definition of the weekly objectives and the contents of the morphocycle.” (Gomes, 2008))

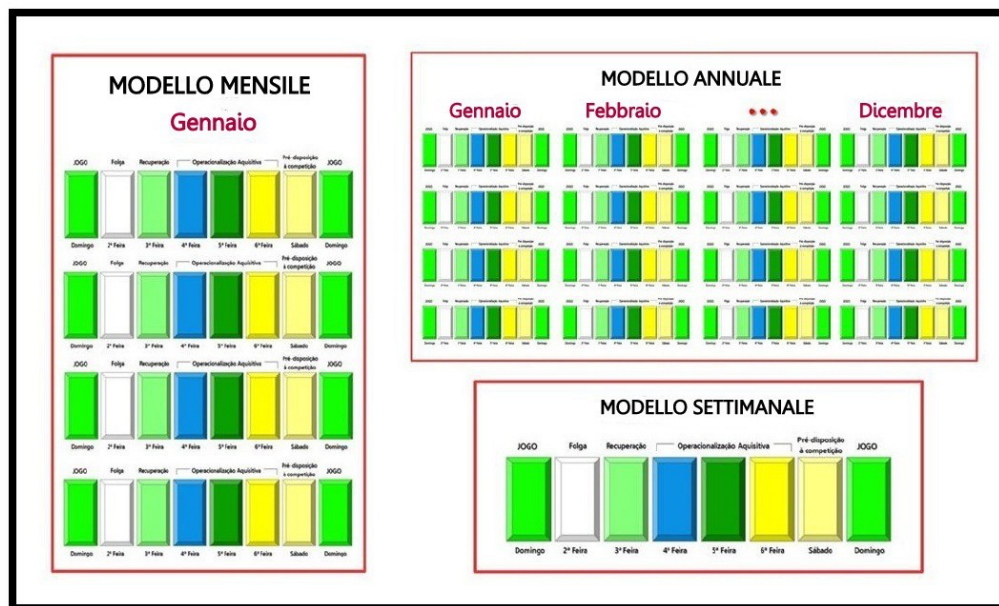


Drawing by Oliveira, modified by Vulcano (2015)

In addition to these three key factors, the morphocycle must also take into account other variables: the moment of the season in which it occurs, the position in the standings, any injured players, the psycho-physical status of the players as well as the days that you have at your disposal between one game and another.

The morphocycle , being a cycle between two games and therefore a short-range periodization, must in any case be understood as a fractal of a larger tactical periodization as it is a "whole that represents a part that is the whole". (Morin , quoted by Faria, 1999)

It is by virtue of this assumption that the morphocycle represents the birth of a training cell, whose structure is replicated throughout the entire season.



Drawing by Oliveira, modified by Vulcano (2015)

The Morphocycle not only defines the structure in which the workouts follow one another but above all, the very form, content and structure of the exercises that will be different in the daily training sessions which, in turn, guarantees that the necessary routine in terms of structure and logic does not become repetitive. It keeps the training process alive and attractive. This is possible only through exercises based on a guided discovery and exploration process of the game. In this way, the structure and the form evolve on their own as a result of targeted exercises, from one morphocycle to the next, and in different ways. All this always bearing in mind the 'here and now' and according to the logic that you train as the way you play.

"It is the training that creates the competition". (Frade, 1999 quoted by Faria, 1999)

5.2 The structure of the Morphocycle

(xample of Morphocycle with matches SUNDAY-SUNDAY)

Let's now consider an example of a morphocycle on a Sunday-Sunday cadence to understand the ways in which its contents will be chosen and structured in the different training days.

5.2.1 1st day: the match

The first day of the morphocycle is when the game is played. It is the day in which there is the greatest psychophysical commitment in terms of tactical periodization.

The game produces cognitive, physical and emotional fatigue from which the team must recover the best possible to face the next challenge in optimal conditions. This is why the morphocycle focuses on completing the recovery process, without however interrupting or preventing the team's ongoing development of the game model. The type of training applied in the upcoming morphocycle, will address the recovery from fatigue and as well as the evaluation on how to support the team's development from a qualitative standpoint. Subject to the conclusions thereof, the preparation of the next morphocycle will commence.

It is also important to consider that some players did not take part in the match and thus there will be two groups with different needs.

“For these reasons the match can and must be considered an integrated and initial part of the entire training process”. (Mourinho, quoted by Maiuri, 2014)

5.2.2 2nd day: passive recovery

The second day of the Morphocycle is the one following the game. In tactical periodization this is usually the day of passive recovery and of rest.

On this day it is essential that there is mental recovery even if, from a physiological point of view, it would be more convenient to rest on the third day of the morphocycle and in the second to carry out an active on-field recovery to better deal with physical fatigue. Tactical periodization is a process in which you constantly train in a concentrated tactical state which weighs heavily in terms of the cognitive effort the players exert. For this reason it is necessary to pay more attention to recovery from a cognitive point of view. The rest day is therefore chosen the day after in which the highest commitment is expected from a nervous standpoint which is match day.

5.2.3 3rd day: active recovery

The third day of the morphocycle is the one following the passive recovery. In tactical periodization it is considered an active recovery day.

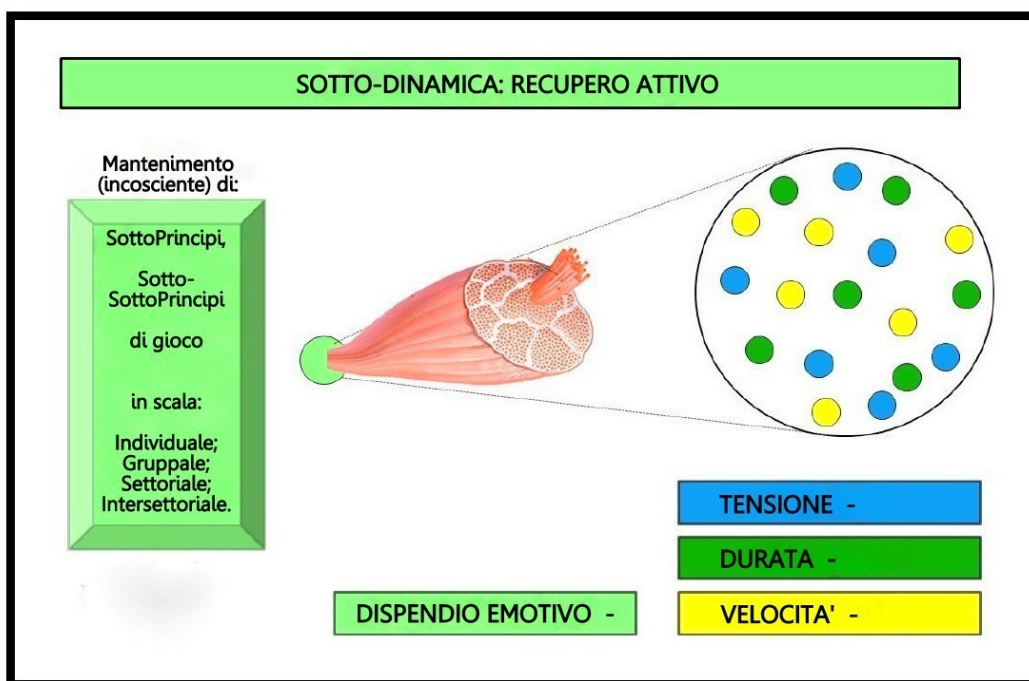
This day is considered a critical moment for the players who have played to take part in an active recovery session with specific exercises. Such sessions are shorter and have a lower complexity while conducted in a more or less stable environment. The recovery on this day will be obtained by ‘cheating’ the

metabolic model. This consists in activating, for short periods of time, the metabolism in specific effort dynamics according to our form of play. The goal is to activate the very recovery mechanisms that occur during the game. This way, an optimal (and specific) recovery will be achieved.. The exercises proposed on this day will be characterized by low levels of complexity and will be less demanding because the focus is set on sub -principles as well as the principles that address the mistakes that occurred during the match while working in small groups.

The sessions will be conducted in medium-sized spaces with the number of players varying in line with the complexity of the exercises.

Nonetheless, the physical effort will be high and immediate, with few eccentric contractions with high tension, high speed while keeping the duration of muscle contraction very low.

The training session will not be continuous, but rather will include a lot of recovery times proportionate to the complexity of the exercises.



Drawing by Oliveira, modified by Vulcano (2015)

"The players on Tuesdays recover and recover completely. It is necessary to promote movement within exercises in a playful form, For example a match between amongst each other without tactical concerns. I got to this conclusion over the years (my process of training is one that constantly grows as I pay attention the results obtained and what they entail), in the first part of my career. On Tuesdays I would conduct tactical sessions, or recovery exercises with 10 players against zero with merely defensive or attacking objectives. Upon further reflection I noticed a fundamental thing, namely that the players started on Tuesday already accusing the so-called tactical fatigue as a result of the high concentration levels and the resulting nervous expenditure that would have lasted until the upcoming game. This is why I considered that a Tuesday training session should start to be more playful ". (Vitor Pereira 2010, quoted by Tamarit , 2013)

5.2.4 4th day: acquisition

SUB-PRINCIPLES AND SUB-SUB-PRINCIPLES WITH EMPHASIS ON CONTRACTIONS IN TENSION

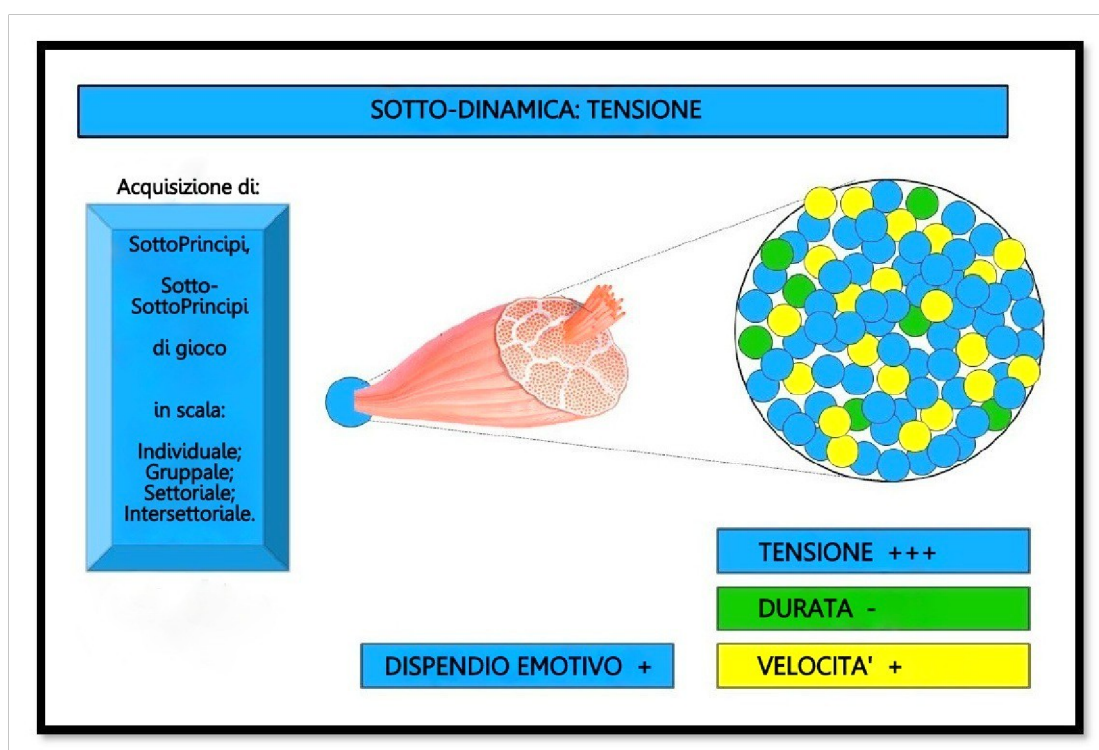
The fourth day of the morphocycle is the one following active recovery. In tactical periodization, the day of acquisition is dynamic with normally muscle tension.

The exercises proposed on this day will be characterized by levels of medium complexity and will present demands that are fairly high. You will train the sub-sub - principles and sub -principles in relation to your next game, on an individual, sectoral and intersectoral basis.

The sessions will be conducted in small spaces, with a low number of players.

The physical load will be high as a result of the drills that lay emphasis on a large amount of resistance and strength related tasks such as jumps, accelerations, stops, restarts, changes of direction and tackles, thus guaranteeing a large number of eccentric contractions with high-tension, medium speed and low duration of muscle contraction. Contextual interference and the insertion of disturbing elements that cause continuous adjustments and readjustments will have great importance within these exercises.

The training involves a lot of discontinuity and ample recovery times between sets and between different exercises to obtain the ideal and complete anaerobic metabolic state.



Drawing by Oliveira, modified by Vulcano (2015)

In order for the team to obtain full biological recovery, the team requires four days. Therefore 3 days after the last match the team has not yet completed its recovery.

This is the first day of acquisition and the last day of recovery before a high-demand training takes place. It is therefore important that the morphocycle maintains its structure from the beginning of the season until the end, thus allowing the necessary adaptation of the players to this type: effort / exercise - effort / recovery.

"Experience tells me that three days after the game the players have not yet fully recovered. I am not referring to their physical recovery, but rather on emotional terms. Emotional consumption needs more recovery time than physical. ".
(Mourinho, 2006 quoted by Tamarit , 2007)

"On this day, while working on the sub-principles we can focus on transitions, sectorial and intersectorial aspects. This foresees sessions with great intensity, interruptions, and again great intensity. There can be drills whereby two teams of five, with two players playing in one half of the field while the other three remain in the opposite half to finish, or even some possession exercises focused on possession in which the players rotate from one field to another; all while training specific sub-principles.

(under sub principles) "(Oliveira, 2010 quoted by Tamarit , 2013)

5.2.5 5th day: acquisition

MAJOR PRINCIPLES AND SUB-PRINCIPLES WITH EMPHASIS ON CONTRACTIONS WITH LONGER DURATIONS

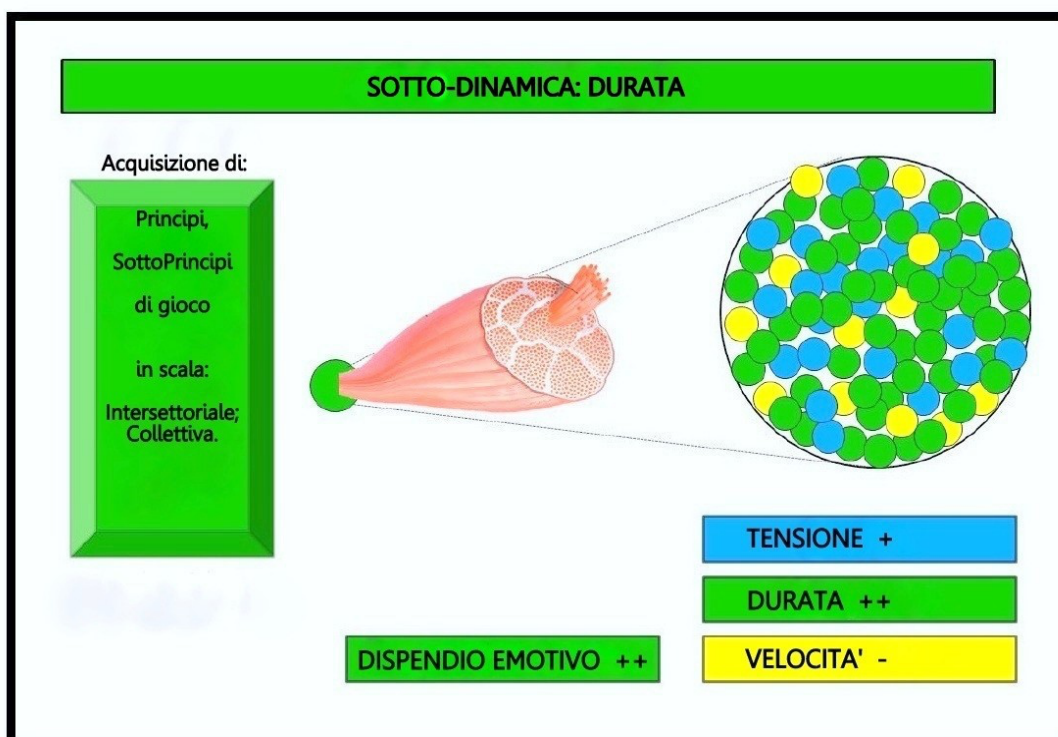
The fifth day of the morphocycle is the one following the exertion of muscle tension. In tactical periodization, this is the day we focus on dynamic movement with longer durations in terms of muscular resistance.

The exercises proposed on this day reach high levels of complexity and will demand maximum attention. Major principles and sub-principles of the game will be practiced as well as the relationships between them. We're starting to refer to our own upcoming match as well as our opponents, on a collective and intersectoral level.

The sessions will be conducted in large spaces, with a high number of players. This will be the training day that is closest to competition. This does not mean that the athlete will train in a scrimmage, nor on the whole pitch, but that the athlete will be subjected to more general exercises, manipulating those so that the systematic repetition is obtained, thus addressing a principle of propensity.

The physical effort will be high, since it is the day most similar to the match in terms of psychophysical effort. The session will follow the complexity and continuity of a match. As such, there will be a varying number of eccentric contractions with moderate tension, low speed and longer periods of muscle contraction.

Discontinuity will be minimal with long exercise times and short recovery times between drills. The recovery times will be such as not to allow the players a complete recovery, but rather recreates the fatigue conditions of the game. According to Professor Vitor Frade on this day "training with discontinuity within continuity is important, allowing training to be created at all times at relative maximum intensity (and ensuring that the exercises are specific to providing energy)."



Drawing by Oliveira, modified by Vulcano (2015)

"The configuration of the exercises on this day will have to contemplate exercises in large spaces, yet slightly reduced to those that are the actual ones of the game. In this way, a system of muscular contraction similar to that experienced in competition is simulated. Tension and contraction speed is kept quite low compared to those in the previous training. Since the period of the muscular contractions is greater, there is a need to cover a greater space resulting from the greater dimensions of the training field. The coach intervenes with specific requests that will privilege certain principles. As such there will be a greater density of principles relating to the principles of play despite that they occur less often during a competition. The theme of training is not general, but meets the criteria for that specific morphocycle. It addresses the concrete needs for that training session thanks to the various exercises that make up the training, thus favoring one principle or sub-principle, over the others "(Maciel, 2010 quoted by Tamarit , 2013)

5.2.6 6th day: acquisition

SUB-PRINCIPLES AND SUB-PRINCIPLES WITH PREVALUS OF CONTRACTIONS IN SPEED SYSTEM

The sixth day of the morphocycle is the one following the acquisition of muscle duration. In tactical periodization, this is the day the athletes focus on dynamic skills with emphasis on muscle speed.

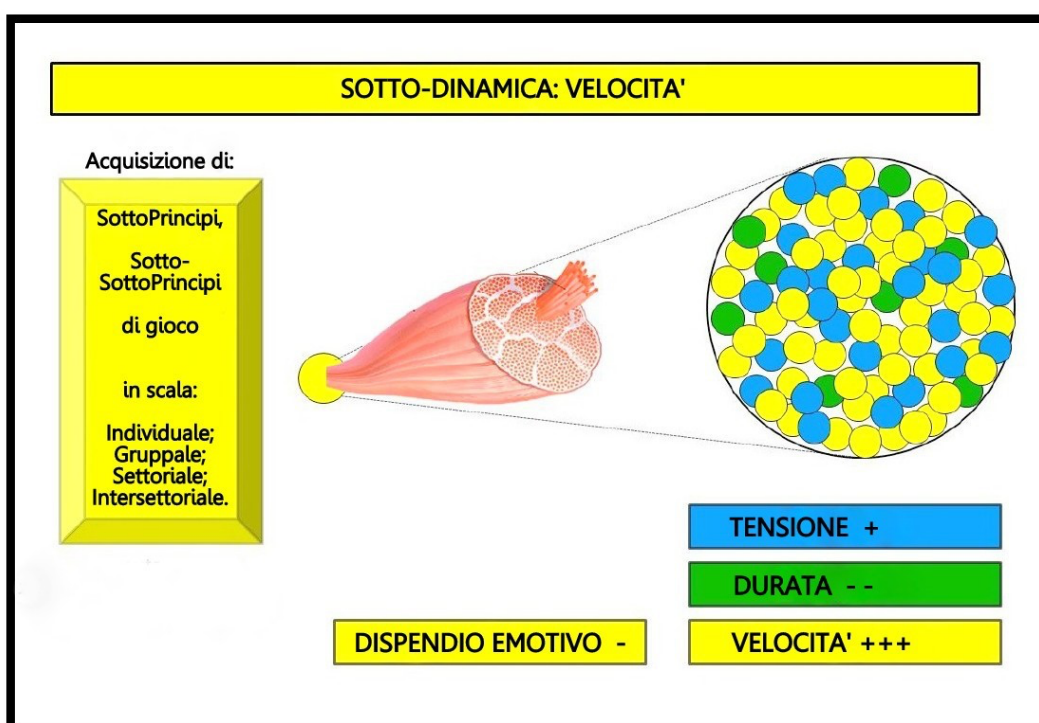
The exercises proposed on this day will be characterized by levels of medium complexity and will present medium-high demands in which the sub- principles and sub -sub- principles of the game will be trained. The attention is centered around the opponents in the next game with focus on individual, sectorial and intersectoral tasks. The exercises cannot be very complex and therefore the variables of the environment are reduced by preferring drills without opposition or with passive opposition. It will be important to train the game situations and to have internalized the game model. The goal is to interact with the subconscious sphere, otherwise there is a risk that the team is fatigued and mentally unresponsive heading into the next game.

The exercises will be conducted in medium-small spaces, with a low number of players if you want to train finishing situations or with a high number of players if you want to train situations in which decision speed prevails and therefore activates the subconscious side.

The physical effort will be short but high, with a low number of eccentric contractions and with moderate tension. In short, high speed and low duration of muscle contraction. It is about creating exercises that promote muscle contractions with high speed of contraction and tension at the beginning of the play but which will not last beyond the start (with a very short duration). On this day there should be no high contextual interference, but rather little unpredictability. Almost zero opposition should be expected, because the duels and continuous adaptations would cause an increase in eccentric contractions. It

must therefore be a sort of 'straight line training', without jumps, changes of direction, continuous acceleration and braking.

The training will have many break and very long recovery times between sets and the different exercises. The exercises will be short and with a high speed of decision and execution. From this day on, it will be necessary to take into account the imminence of the next game. The recovery times, therefore, are such as to allow players to reach an almost complete recovery. They are practicing at relative maximum intensities and without tiring them both from peripheral and nervous standpoint.



Drawing by Oliveira, modified by Vulcano (2015)

"The propensities on this day must be aimed at soliciting 1/3 of the time used in each action, that is the one intended for execution / implementation of the movement itself (movement efficiency), while avoiding to affect the remaining 2/3 intended for awareness and decision-making (cognitive dimension of

movement). It is important in this training not to recall the structures of the game model that create nervous fatigue, they will necessarily be involved in the upcoming match. May emerge and may manifest itself ". (Maciel 2010, quoted by Tamarit, 2013)

"I train very short duration, very quick actions that we can do and do normally in most game situations (the situations played must not be those that prevail on this day), looking for an acquisition of principles or even aspects at a strategic level. Normally it continues to be intense and with higher speed but, despite missing two days, it does not stop having a high intensity; however, we want to avoid those periods to be too long." (Carvalho, 2010 cited by Tamarit, 2013)

5.2.7 Day 7: active recovery

PREPARATION FOR THE GAME

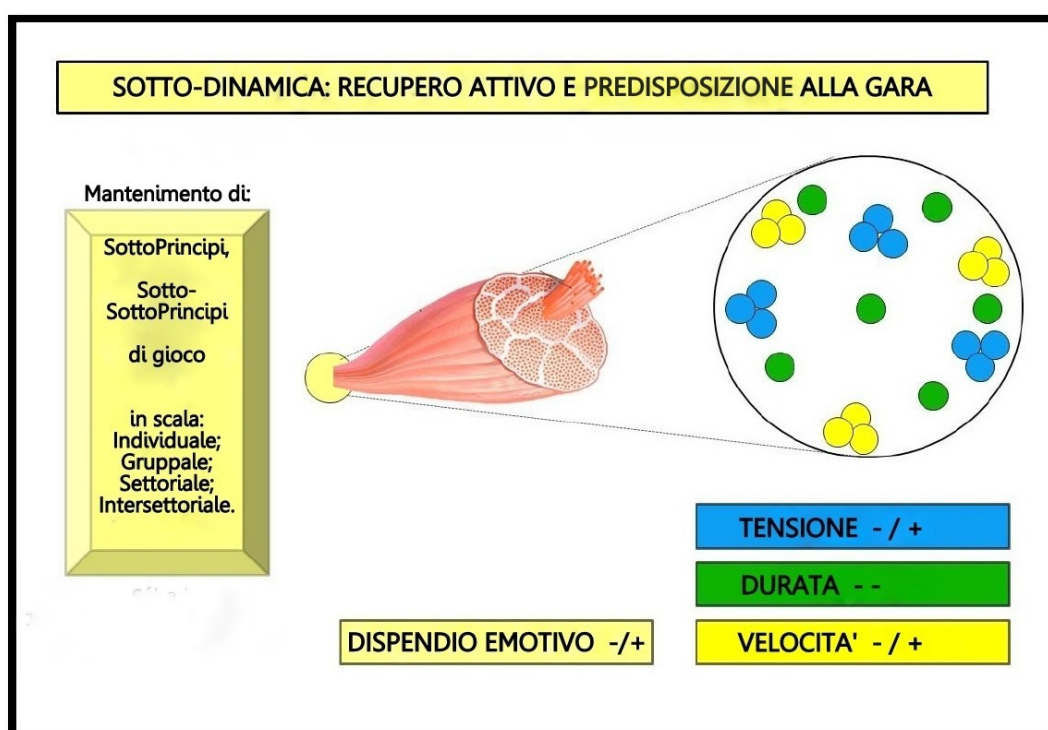
The seventh day of the morphocycle is the one following the day of muscle speed acquisition. In tactical periodization it is normally the day of recovery and activation according to the game.

The exercises proposed on this day will be characterized by low levels of complexity and will demand high acquisition, however for very short times. It will demand attention from a tactical-strategic point of view of the principles, sub-principles and in part of the sub-sub-principles. Compared to the other trainings of the morphocycle, the main emphasis is on the strategic plan for the next game, on an individual, sectoral, intersectoral, group and collective level. Mental exercises can be simple so that no fatigue builds up.

The drills will be conducted in spaces and numbers of players that vary in relation to the contents we focus on.

Physical effort will be low, with a low number of eccentric contractions with moderate tension, moderate speed and very low duration of muscle contraction.

The training is purposely discontinuous with very long recovery times between sets and between different exercises. The work loads will be of very short duration and the movements will be very fast and automated, such as those in training set pieces or those useful for remembering the collective movements of the team. The recovery times are exclusively aimed to guarantee a complete recovery.



Drawing by Oliveira, modified by Vulcano (2015)

"The day before the match is a strategic tactical training of revision of what has been seen during the week with a focus on set pieces, throw-ins, corners, the indirect free kicks, the penalties". (Carvalho 2010, quoted by Tamarit , 2013)

"There is a need to recover fully from the previous days and to prepare the players for the upcoming game as to their approach to very simple sub -principles " (Oliveira, 2006 quoted by Tamarit , 2007)

As highlighted, in the structure of the morphocycle there are days that tend towards recovery and days that tend towards acquisition. They 'lean' because recovery and acquisition are not mutually exclusive, but there will be a coexistence with dominance on one or the other. Therefore, in all morphocycle workouts there will be an acquisitive component of the game model and at the same time there will be a specific recovery component.

"Recovery and acquisition must be understood as two sides of the same coin". (Frade , 2010 quoted by Tamarit ,2013)

5.3 The physical dimension in Tactical Periodization

As highlighted throughout the thesis, it is clear that tactical periodization is a training methodology that lays its foundations on the specificity of the game.

This methodology succeeds through the application of the methodological principles that govern it, to develop all the dimensions of sports performance continuously during training.

The training process, however, must always be subjected to a overarching tactical and tactical-strategic dimension, placed at a higher level than the other dimensions as it is the one that ensures that everything proposed in training is specific to a certain way of playing. within a game model.

One can commit the error of understanding tactical periodization as a methodology that has no physical problems. This is a rather gross error. In fact, the physical dimension is not only important, but essential. It is a physical dimension not developed in generic terms through any athletics model aimed at

raising the levels of the various conditional capacities, but specific to the game model. This performance model will always be supported by the same metabolic profile (mainly anaerobic - alactacid metabolism) and will not only refer to football in general, but to that developed in one's own game model. The team will therefore be physically prepared when calling upon its game model and the resulting metabolic profile. This is how it will reach the so-called 'sporting form'.

"The concept of sporting form appears associated with the game model and its principles, that is, associated with a particular style of play and at the basis of a preparation process that embraces training and competition". (Faria, 1999)

"In the large number of competing football and their concentration imply lower relative form levels, with fewer variations and smaller stability, as a function of greater stability. It therefore seems more correct to avoid fluctuations, the adoption of the so-called 'performance levels' to the detriment of the propaganda 'peaks of form' which are regulated above all for sports with a short competitive period ". (Garganta, 1992 quoted by Faria, 1999).

To further corroborate the consideration that Tactical Periodization has of the physical dimension there is the methodological principle of horizontal alternation in specificity.

"We do not say that the physical aspect is not important, because the physical aspect is very important. What we say is that our exercises and our orientation of the weekly, daily, monthly and yearly exercises have the objective and the aim of It is clear that, in this way, the psychological side, the physical side, the technical side lies in the idea of organization and play, but it is the idea of this organization that commands everything we ask to be done from the beginning of the preparation ". (Carvahal , 2010 cited by Tamarit, 2013)

"Contemplate the physical dimension, but only once you have succeeded in putting into practice the manifestation of a certain expressiveness or collective gestures with individual particularities. They are congruent and allow the manifestation of these intentions with the right timing". (Maciel, 2010 cited by Tamarit , 2013)

5.4 Proprioceptivity : The body in relation to the game

The specific proprioceptive training that is pursued with tactical periodization differs from that proposed conventionally. The traditional methodologies have a vision of proprioception separate from the training logic, in that it follows its development as separate and integrative of the training itself. In standardized and commonly accepted workouts, exercises and prevention are applied that are far from the needs of the game; these are exercises that use proprioceptive platforms, rows of inflatable discs, fitness balls and other devices that can be decontextualized and decontextualizing. Therefore, a general proprioceptivity is trained not taking into account the different surfaces the game of football is played on, the different movements required, the different body-context relationship and above all, it does not consider the fact that it is played with the feet and that this demands strong conditioning, resulting almost in an unnatural motoric practice.

The same exercise, therefore, cannot be applied to all sports, since they have completely different characteristics and needs.

Tactical periodization, on the other hand, has a vision of holistic and contextual proprioception that develops in relation to the training logic. In accordance with this argument, in workouts, many exercises are performed in which the proprioceptivity is trained by playing the game in specific competitions that

maximize development, activating the mechanoreceptors and proprioceptors in a relateable and not decontextualized form. As such, proprioception is intimately related to the context, the decision making, the emotions and the connected sensations. This form of proprioception is based on the development of the relationship of the body in motion with the game.

What is trained is a proprioception in sync with football and, even more so, in harmony with the football practiced by the team that trains.

"It is important to know that if two very similar gestures are performed but with different purposes, even if parts of the movement are the same, the whole activation sequence takes place with different neurons. So when you teach, for example, a tactical or technical gesture in a context detached from the reality of the game, they 'learn' to activate neurons that will then not be operating in the competitive phase. This applies to any activity, from tactics to physical running; this makes us understand how the neuronal activity (remember that the muscle moves thanks to the neuron that sends the impulse) turns out to be specific not of the action we carry out, but of the purpose, or rather the intention that stimulates the action itself." (Montella, 2011)

" Proprioceptivity is achieved through play, since it is necessary to respond within the context. The somatization resulting from the presence of opponents is fundamental, like the rest of things." (Gomes, 2010 cited by Tamarit , 2013)

"It is like learning how to drive by practicing driving a train that moves along the tracks automatically, only to find yourself driving a bus in a context where there's a lot of traffic, where there are specific rules to follow and where there is contextual interference given by the presence of other machines. This results in decisions as to when, where and why to turn, putting into practice our own evaluations." (Maciel 2010, quoted by Tamarit , 2013)

This represents a further reason why tactical periodization supports the claim as to why players are best developed with experiential training.

"The muscle is a receptive organ and must adapt continuously to small changes that influence it because – similar to in-game settings- it is imperative that the player interiorizes the ability to react efficiently to stimuli. A muscular co-contraction and another timing that adjusts this contraction to the circumstantial alterations while in motion. This second timing, called anticipatory, highlights the importance of the 'experiential memory function' of the contractions of each athlete (mechanoreceptors that alter in order to capture the evolution of the relationship of the body in space and time)." (Frade ,2010 quoted by Tamarit, 2013)

Conclusions

The underlying thesis attempted to shed light as to how football, as a tactical-situational sport requires its own organization and how tangible the complexities of the game are, we realize how impossible it is to reduce aspects that are so closely tied to one another and maximized in training separately.

The approaches of traditional and integrated methodological concepts are limited (and are limiting) given that a physical dimension prevails as the driver able to direct and dictate training.

Having highlighted the need to better manage the complexity of football in a tactical context, the intention was to expose a particular approach born in Portugal by the brilliant mind of Professor Vitor Frade. He makes the organization of the game and its conscious and almost scientific manipulation his credo. It places the tactical dimension, the real organizer of the game, at the heart of the training process while the other dimensions (technical, physical and psychological) have a supporting role in common.

This methodology which has its roots in the theory of dynamic systems, cybernetics, neuroscience, fractal geometry, complexity theory and sociology takes the name of 'tactical periodization'.

The main objective of tactical periodization is to allow a team to instill a tactical organization that can be internalized by the players not only at a conscious level but also at a subconscious level, so that they can perform on a collective level in the game. This is achieved by respecting a clear methodology and a specific way of training.

In order for an optimal tactical organization to be obtained it is therefore not sufficient for the team to train according to general terms of the game. Specificity is necessary when it comes to collective principles forming an organized game model.

The game model is the practical expression of the coach's game idea that adapts to the context as well as to the skill set of the players and to numerous other factors that influence their development. The definition of a game model

therefore becomes a fundamental prerequisite representing a systemic approach to training put into practice by tactical periodization.

Tactical periodization is not the perfect formula that allows you to win and raise trophies. Fortunately, football and its unpredictability render pre-established schemes and recipes for success fruitless. In my opinion, it is critically important that there be a scientific approach when it comes the tasks a coach has to confront and resolve . Tactical periodization provides a methodological pathway to maximize the qualities and the potential of a football team.

I hope that curiosity, experience, ambition and the desire to improve allow me to progress with increased efficiency and consciousness towards the role as a coach

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