# Theoretical and methodological assumptions of Bioecological Theory of Human Development: a research with juvenile offenders at treatment facilities

**Vinicius Coscioni**[*a,b]
**Danielly Bart do Nascimento**[b]
**Edinete Maria Rosa**[b]
**Sílvia Helena Koller**[a]

[a]*Universidade Federal do Rio Grande do Sul, Instituto de Psicologia. Porto Alegre, RS, Brazil*
[b]*Universidade Federal do Espírito Santo, Departamento de Psicologia Social e do Desenvolvimento. Vitória, ES, Brazil*

**Abstract:** This article aims: (1) to present the theoretical-methodological assumptions of the Bioecological Theory of Human Development (BTHD); and (2) to report how these assumptions influenced the conduction of a research with juvenile offenders at treatment facilities. The stages of BTHD are presented, highlighting the transformation of a context-centered approach to a theory that emphasizes everyday processes. The elements of the PPCT Model (Process, Person, Context, and Time) are discussed and methodological designs are suggested as a mean of accessing them in researches. A study conducted with juvenile offenders at treatment facilities is then presented as a way to operationalize the use of this theory in a research activity. The formulation of the research problem, the design of method, and the interpretation of the results are discussed in light of the theoretical and methodological assumptions characteristic of the theory.

**Keywords:** methodology, developmental psychology, juvenile delinquency.

Every scientific practice reflects a theoretical-methodological conception that supports it. These conceptions presuppose underlying ideas that influence the choice of the object of study and how this object is studied (Slife & Williams, 1995). Based on this understanding, Kuhn (1978) coined the concept *scientific paradigm* to refer to the worldview that guides researchers, that is: the theoretical-methodological conceptions that support their practices. The scientific paradigm influences the social structure of the scientific community, which reproduces theories and methods (Carvalho, 1988). These recurrent theoretical-methodological reproductions are accompanied by a lack of knowledge of their assumptions (Slife & Williams, 1995), which leads to a less critical and even dogmatic scientific production.

The statement of the theoretical-methodological assumptions that ground a study is fundamental from a technical and ethical point of view. Technical, for making sure that scientists understand the underlying ideas of their choices; ethical, as such a statement assumes the possibility that the same object of study can be analyzed while being based on other theoretical-methodological foundation. Motivated by these questions, this article aims to: (1) present the theoretical-methodological assumptions of the Bioecological Theory of Human Development (BTHD); and (2) to report how these assumptions influenced in the conduction of a study

with juvenile offenders at treatment facilities. The article begins as a theoretical essay and, at the end, it becomes an empirical study. The influence of BTHD assumptions present in the formulation of the problem, the methodological design and the interpretation of results in the study are presented.

## Bioecological Theory of Human Development: theoretical-methodological assumptions

According to Rosa and Tudge (2013), BTHD, developed by Urie Bronfenbrenner, can be divided into three phases. Reformulations in the theory over time allow us to perceive the transition from a context-centered approach to a theory in which everyday interrelations become central.

In the first phase (1973-1979), in which the theory was called Ecological Approach (or Model) of Human Development, Bronfenbrenner focused his discussions on the methodological limitations in the research of the period (Carvalho-Barreto, 2016; Collodel-Benetti, Vieira, Crepaldi, & Schneider, 2013; Rosa & Tudge, 2013). His main criticisms were directed towards experimental research, which focused on the behavior of people in *strange* situations and locations, that is, in contexts to which they did not belong. He advocated that human development research must take place in the environment in which humans live (Bronfenbrenner, 1979).

*   Corresponding address: viniciuscoscioni@gmail.com

Still in the first phase, conceptualizations were formulated about the different contextual levels that exert influence on the development of a person. *Microsystem* was defined as the physical environment in which the person is situated and interacts with others face to face. *Mesosystem* was described as a system of microsystems, i.e. the relation between two or more microsystems in which the person is situated. *Exosystem* refers to microsystems in which the person does not actively participate through face-to-face interactions but which influence and are influenced by the person. Lastly, *macrosystem* refers to the institutional systems of a culture, being related to economic, social, educational, legal and political aspects (Bronfenbrenner, 1979).

In the second phase (1980-1993), Bronfenbrenner focused on the manner in which the environment was conceptualized in human development research (Carvalho-Barreto, 2016; Rosa & Tudge, 2013). Four different research models (Social Address, Person-Context, Process-Context, Person-Process-Context) and their respective limitations were described (Bronfenbrenner, 1988). The author called as Ecological Paradigm the model that emphasized the active aspect of the person in the environment, as well as the effects of time (personal and historical) and the processes of development (Bronfenbrenner, 1993).

In the third phase (1994-2006), the theory receives the current nomenclature and is characterized by the formulation of the Process-Person-Context-Time (PPCT Model). According to Carvalho-Barreto (2016), the evolution of the term "ecology" to "bioecology" is related to the recognition of the structural and functional levels of people, which includes biological, cognitive, emotional and behavioral aspects. The first element in the model, *proximal processes*, are understood as a driving force of human development and occupy a central position in theory (Bronfenbrenner & Morris, 2006). Proximal processes are recunrrently understood from two propositions, and the first delimits that

> human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction in the immediate environment are referred to as proximal processes. (Bronfenbrenner & Morris, 2006, p. 797)

Five aspects must be present for the establishment of proximal processes, namely: (1) the person must be engaged in an activity; (2) the activity should occur over an extended period of time and with regular frequency;

(3) the activity should become progressively more complex; (4) the relations by which proximal processes are established must be reciprocal; and (5) the objects and symbols that make up the immediate physical environment where the proximal processes are established should stimulate attention, exploration, manipulation, and imagination. Beyond these aspects, the power of proximal processes tends to increase when among people who maintain a strong emotional relationship (Bronfenbrenner & Morris, 2006).

Bronfenbrenner (1994) described proximal processes as effective in the acquisition process of competencies or in the reduction of dysfunctions. The understanding of competence and dysfunction must, however, take context into account, so that what can be considered competence or dysfunction in one reality may not be in another. For a juvenile offender who intends to remain in *the criminal world* as a way to ascend socially, learning more effective ways of promoting wrongdoing can be considered a competence. For technicians at treatment facilities, however, such learning would be considered as unfavorable to development.

The second proposition promotes the articulation of proximal processes with the other elements present in the PPCT Model:

> The form, power, content, and direction of the proximal processes effecting development vary systematically as a joint function of the characteristics of the developing person; of the environment - both immediate and more remote - in which the processes are taking place; the nature of the developmental outcomes under consideration; and the social continuities and changes occurring over time through the life course and the historical period during which the person has lived. (Bronfenbrenner & Morris, 2006, p. 798)

Proximal processes are therefore central to understanding human development, which has implications for research planning. Analysis of proximal processes must be preferably conducted in a bidirectional manner, that is, accessed through the understanding of the dyads with which proximal processes are defined (Rosa & Tudge, 2017). In this analytical process, both the objective elements observed in the environment and the subjective elements – accessed by understanding the experience of participants – must be taken into account (Bronfenbrenner & Morris, 2006).

Focusing on these processes is not yet a reality in human development research. Bronfenbrenner and Morris (2006) stated that research has moved from laboratory to naturalistic environments, according to previous methodological propositions. They added, however, that the new limitations of developmental sciences was conducting research *in a context without development*, that is, research without proper focus on developmental processes. More recent literature reviews have revealed

that most studies based on BTHD still reflect the earliest stages of the theory, being more context-oriented than focused on developmental processes (Tudge, Mocrova, Hatfield, & Karkik, 2009; Tudge et al., 2016).

With regard to the characteristics of the *Person*, three levels of personal characteristics are proposed that appear in the model both as results and sometimes as moderators of proximal processes. *Dispositional characteristics* can be generative or disruptive, the first being conceived as those that maintain and sustain proximal processes (curiosity; tendency to initiate or engage in activities, etc.), while the latter impairs or interrupts them (impulsivity, aggressivity, etc.). *Resource characteristics* refer to physical, cognitive, emotional, social, and material aspects of the person, being capable of influencing successful engagement to proximal processes (skills, experiences, etc.) or inhibiting such an engagement (physical disability; mental illnesses, etc.). Finally, *demand characteristics* regard those that can cause favorable or unfavorable reactions to the establishment of proximal processes such as age, gender, and color – thus suffering influence of value from macrosystem aspects (Bronfenbrenner & Morris, 2006). According to Rosa and Tudge (2017), the recognition that personal characteristics influence the establishment of proximal processes implies that research design foresees the participation of individuals with different personal characteristics, in order to observe its effect in the proximal processes under analysis. The planning of research designs should, therefore, integrate as factors the personal characteristics relevant to the research problem.

The already recognized contextual levels (microsystem, mesosystem, exosystem, and macrosystem) refer to the element *Context*. The microsystem stands out, as within it occur proximal processes, and the characteristics of the remaining contextual levels can be observed (Bronfenbrenner & Morris, 2006). According to Rosa & Tudge (2017), two possibilities for research design appear as favorable to the investigation with focus on the microsystem: (1) the investigation of proximal processes established by a same individual or group in different microsystems; (2) the investigation of similar proximal processes established by different individuals or groups in distinct microsystems with peculiar macrosystemic characteristics. Even with this focus on the microsystem, the analysis of the results must predict the observation of meso-, exo- or macrosystemic elements that relate to the proximal processes highlighted.

*Time*, in turn, appears in the theoretical model based on the formulation of three concepts associated while from a personal and historical temporal perspective. From a personal perspective, *microtime* refers to the immediate time in which the proximal processes are established. *Mesotime* is related to the frequency and length of time related to the establishment of proximal processes. From a historical perspective, *macrotime* corresponds to historical events that impact not only the

individual, but small and large groups (Bronfenbrenner & Morris, 2006). This chronosistemic perspective in BTHD implies a preference for longitudinal research designs, in which it is possible to verify changes and continuities in the person's development over time (Rosa & Tudge, 2017).

The formulation of the PPCT Model can be understood through a methodological perspective, given the understanding of Bronfenbrenner and Morris (2006) that "a good theory is one that can be translated into corresponding research designs that match the defining properties of the theory" (p. 796). Research planning must take into account the elements that make up the model and the interrelationship between them, turning proximal processes into the main focus. In this sense, discovery mode research must first be performed in order to observe the complex interrelations between the elements. The results of these studies generate hypotheses to be tested in studies in verification mode (Bronfenbrenner & Morris, 2006).

Bronfenbrenner and Morris (2006) emphasized that, in addition to promoting knowledge about development and contributing to the formulation of new hypotheses, research in discovery mode must provide scientific grounds for the effectiveness of public policies. Research based on BTHD has traditionally occupied a political position, producing knowledge that contributes to the execution of public policies – especially directed towards children, youths, and families (Carvalho-Barreto, 2016; Collodel-Benetti et al., 2013).

Although Bronfenbrenner has made some considerations on research in discovery mode, there is no empirical data from researches conducted by him that exemplifies his statements. Instead, he preferred to comment on studies of people which were near to his methodological propositions (Carvalho-Barreto, 2016; Tudge, 2008). Most of these studies had a mechanistic nature and lacked sufficient information for understanding the establishment of proximal processes – such as progressive complexity and engagement in activities, difficult information to operationalize in quantitative instruments. Thorough observations over time could provide sufficient information for the operationalization and understand proximal processes. Thus, methods of qualitative perspective, especially those of ethnographic nature, are assumed to be consistent with the methodological propositions of BTHD. Bronfenbrenner, however, never mentioned ethnographic studies in their theoretical formulations (Tudge, 2008).

Based on this point of view, the ecological insertion was developed in Brazil by Cecconello and Koller (2003) as a method with ethnographic perspective based on BTHD. It consists on the insertion of research team in the field over an extended period of time, through which proximal processes are established with the participants (Prati, Couto, Moura, Poletto, & Koller, 2008). Participant observation is a fundamental method during the time for connection between team

and members, so much so that observed aspects related to the four elements constituting the PPCT Model are recorded in field diaries by the team members. The role of teamwork is essential, highlighting the relevance of group supervision as a space in which the various members of the research team exchange experiences during fieldwork. After some time connecting, when participants have become accustomed to the research team, formal and systematic data collection methods can be used (Koller, Morais, & Paludo, 2016). Collodel-Benetti et al. (2013) recognize Ecological Insertion as an example of a method that operationalizes BTHD adequately, but in their understanding, there are other methodological possibilities compatible with the theory.

## A study based on the Bioecological Theory of Human Development

A study conducted in treatment facilities for juvenile offenders in Espírito Santo and Rio Grande do Sul was based on BTHD, since its planning to its execution and analysis. According to Brazilian Law (Brazil, 2006), these institutions must simultaneously seek retribution for the infractions as well as restoration with the development of socio-pedagogical activities. The routine of these institutions implies logistical difficulties for conducting researches whose methods involve many field visits. This occurs due to the scenario of overcrowding and the emphasis on security procedures (Coscioni, Costa, Rosa, & Koller, 2017) leading to caveats regarding the entry and permanence of research teams in their spaces. Due to these difficulties, it was not possible to carry out an ecological insertion. Nevertheless, BTHD was the basis for this research since its planning and until the interpretation of the results.

### Formulation of the problem

The problem of this research results from studies that refined an earlier problem, namely: "What is the impact of treatment facilities on the psychosocial development of juvenile offenders?". This problem raises some questions as to its applicability as the driving force of a study. *Impact of treatment facilities* and *psychosocial development* are terms that encompass a wide range of phenomena. Thus, it is necessary to delimit a question with a smaller scope and with real possibility of operationalization.

In choosing the BTHD as theoretical basis, the first delimitation regarded the process focus. A set of daily processes established by juvenile offenders was chosen as the object of analysis: the interpersonal relations present in daily routine during deprivation of liberty, more specifically with other adolescents, socio-educational agents (employees who simultaneously deal with the function of security and everyday socio-educational activities) and technical team (which includes psychologists, pedagogues, lawyers, and other professionals who assist the juvenile offenders).

It was also necessary to select a result from *psychosocial development* as object of study: life projects. The emphasis on development outcome is related to the premise that proximal processes vary systematically according to the nature of the developmental aspects studied. Thus, it is not possible to delimit proximal processes to be analyzed without having in mind the results of the development that is being investigated.

The emphasis on life projects is related to its delimitation as one of the objectives to be fulfilled during the deprivation of liberty. The essential role of the Individual Assistance Plan (PIA) as an instrument that favors the uniqueness of assistance during the time of deprivation of liberty and consequently, the development of life projects, is highlighted. It is a document formulated by employees of treatment facilities in co-authoring with adolescents, which delimits a set of actions to be developed during the time of deprivation of liberty (Brazil, 2006).

The concept of life projects adopted is that of Marcelino, Catão, and Lima (2009), who define them as "the intention to transform reality, guided by a representation of the meaning of this transformation, in which the real conditions in the relation between past and present in the perspective of the future are considered" (p. 547). Life projects are not synonymous with future aspirations and expectations, but a set of these aspirations and expectations accompanied by a sense of action by means of which they can be executed.

The formulation of the previous problem also leads to a methodological question: the term *impact* refers to studies in verification mode, mainly from an experimental perspective. According to the BTHD, it is advisable to conduct studies in discovery mode and, only then, studies in verification mode. Through this theoretical-methodological refinement, the research problem became operationalizable through the following question: "In what ways do interpersonal relations established by juvenile offenders at treatment facilities contribute to the elaboration of their life projects?".

### The design of the method

The study is configured as a multiple case study (Stake, 2006), using focal groups conducted with 25 juvenile offenders at treatment facilities. In the process of group selection, the location of the treatment facilities and the age group of juvenile offenders were taken into account in order to generate a 2 x 2 factorial design study, as described in Table 1. This factorial design allowed us to explore how the proximal processes selected varied according to different microsystemic (treatment facilities), macrosystemic (region) and

personal characteristics (age group). The selection of these factors to guide the analysis process favored the understanding of the complex interaction between proximal processes and personal and contextual elements that constitute the PPCT Model.

The choice of Stake's proposal (2006) as a methodological basis allowed for the apprehension of the contextual elements that influenced the understanding of the phenomenon in question. According to the author, a multiple case study should focus not only on the phenomenon under analysis, but on the way in which it presents itself in each of the case units that make up the study. The similarities and differences between the cases thus become important aspects to be considered at the time of analysis. The use of the field diary as a tool to record participant observations was therefore technically and ethically fundamental. Technical, as it generated data that allowed greater understanding of daily and situational elements, helping with the interpretation of the findings derived from formal data collection procedures. Ethical, since the description of the field research team promoted reflection on the established processes with the adolescents, which made the bias of their presence in the field more transparent.

In addition to the use of field diary, the choice of focus groups as a data collection technique favored the observation of the daily interrelations among adolescents. One study that reflected on group techniques with Brazilian and German adolescents residing in suburbs (Weller, 2006) outlined five advantages of its use instead of individual interviews:

(1) adolescents feel free to use their own vocabulary during interaction with their peers; (2) the interaction between participants in group activities allows access into the details of their everyday conviviality; (3) the adolescents tended to develop interactive dialogue closer to everyday situations; (4) group activities demand a degree of abstraction from their participants, which can lead to *insights* important for the investigation; (5) distorted facts, radical positions or views that do not reflect socially shared reality tend to be corrected by other participants during the course of group activities.

Individual meetings were held with the participants days before the start of group activities. These meetings had the purpose of clarifying the adolescents about the aims, justification, procedures and ethical aspects related to the research, materializing from the signing of the terms of assent or consent (depending on the age of the participants). In addition to being essential from an ethical point of view, the meetings favored the definition of the *rapport* between research team and adolescents, in order to promote greater validity of the contents generated in the focus groups.

The data generated in the activities developed in the focus groups were analyzed from an thematic perspective (Braun & Clark, 2006), taking into account the subjective experience of the participants with regard to the phenomenon under analysis. This form of analysis allows to promote the knowledge of the reality studied from the perspective of the interlocutors, which can favor the access to relevant information for evaluating public policy issues. Only after an exploratory analysis data were interpreted based on BTHD.

*Table 1.* Factors for the establishment of focal groups

| | | Factor: Age | |
| --- | --- | --- | --- |
| | | *Between 15 and 18 years old (incomplete)* | *Between 18 and 21 years old (incomplete)* |
| *Factor: Region* | Cariacica | Adolescents between 15 and 18 years old (incomplete) inhabitants of Cariacica | Adolescents between 18 and 21 years old (incomplete) inhabitants of Cariacica |
| | Porto Alegre | Adolescents between 15 and 18 years old (incomplete) inhabitants of Porto Alegre | Adolescents between 18 and 21 years old (incomplete) inhabitants of Porto Alegre |

## Interpretation of the results

### Technical team

When questioned about the assistance of the technical team in the elaboration of their life projects, the adolescents mentioned, above all, the function of promoting referrals to external services as a way to access *opportunities*. These referrals were associated to a *plan* whose execution is a responsibility of the technical team and that should be informed to the Judiciary for the reevaluation of the time they should spend at the treatment facility. This *plan* seems to coincide with the PIA, although the adolescents did not

refer to it that way during the activities. The participants described a series of difficulties the execution of PIA related to the precariousness of the assistance program and its relation with the Judiciary:

> *They plan, make our life plan for the judge to know what we want to do. So many times we can't be honest: "I want to go to college, I want to do that". I have to say that for me to have a positive point, get it?* (Questionador, 18 years old)

The technical assistance thus seemed to disfavor the engagement in activities, a necessary condition

to establishing proximal processes. This is because the implementation of PIA became a protocol to be followed by adolescents and technicians, far from the original idea of ensuring equity of assistance. A study carried out with technicians of a semi-liberty program (Moreira, Albuquerque, Rocha, Rocha, & Vasconcelos, 2015) identified the team's difficulties in establishing the active participation of adolescents in the construction of PIA. The study highlighted the effects of sending PIA to the Judiciary, given that the document was associated with the possible anticipation of the end of deprivation of liberty.

Similar results were found by a study based in Porto Alegre (Coscioni, Farias, Garcia, Rosa, & Koller, 2018), which characterized coexistence of juvenile offenders with the technical team. Based on interviews with ten adolescents and also being grounded on BTHD, the research identified the local Judiciary and Executive Branch as exosystem elements that disfavored the establishment of proximal processes between adolescents and technicians. The Judiciary, since it brought demands that influenced the relationship between adolescents and technicians, ended up assigning the technical team with the function of drafting judicial reports. The Executive, due to the low financial investment, led to the precariousness of human and material resources. This context diminished the frequency of technical assistance, due to the lack of physical space, the overwork, and the overcrowding and embezzlement of employees.

Difficulties in the implementation of PIA seemed less severe in one of the treatment facilities of Espírito Santo, where the participants described the execution of courses, workshops, etc. This difference could be related to the physical and human resources of the site, which, compared to the other treatment facilities, was better prepared to comply with the time of deprivation of liberty. This is because the facility had greater availability of physical space (including a sports court and pedagogical space) and fewer adolescents referred by each technical team (in other units, some teams were responsible for up to forty adolescents).

In the midst of logistical difficulties, the adolescents described attempts by the technical team to promote assistance with ways to design life projects. These attempts were repeatedly received with disinterest, which discourages the establishment of reciprocal relations (a necessary condition for the occurrence of proximal processes). Regarding the content of the assistance, the participants described repetitive dialogues, dialogues without continuity and lacking in progressive complexity that could characterize the establishment of proximal processes. They stressed the fact that the technicians voiced the need to elaborate life projects, but also criticized the fact that the assistance did not provide subsidies for planning any course of action towards the future:

*I think you actually get no help, no help even with professional guidance from them for guiding you with what you fit most and what you really want. They just write down your plans. They ask if you want college, "Oh, what I want? Engineering", "Do I want to take a course? Ah, as a welder". They don't ask, "Will you be fine as a welder?". Let's suppose, "there's for nursing technician, there's another course". What they do is write down what you say. So, if you say, well, that they help you, that part, I believe you don't get HELP from them.* (Questionador, 18 years old)

Some participants stated that they were affectedly involved in technical assistance, which is more common among adolescents in the oldest age group (18 and 19 years). These adolescents differed from the others because they presented future aspirations unrelated to the practice of infractions. Their interest and motivation towards the assistance can be understood as dispositional characteristics. Moreover, the type of relationship established, characterized by affection, was also potentiating proximal processes.

Although encouraged to talk about examples of assistance that led them to plan for the future, participants tended to resume the discourse on repetitive dialogues. Given this context, it seems that technical assistance led to changes in the future aspirations of adolescents, but not their life projects. This is due to there being practically no mentions of assistance that led to the planning of a future course of action. Only one passage was related to this idea and brought a clear example of progressive complexity from the establishment of short- and long-term goals:

*But they say "You have to live intensely. One day at a time. There's no telling what you're going to do five years from now. Let's think the following..." They use the following term: small goals. Like, my goal now is Enem[1]. After that, I have a test this month. Then the second goal is to see if I get a progression. Then the third is to fulfill that progression.* (Honesto, 18 years old)

A superficial analysis may lead to the hasty conclusion that the technical teams are responsible for the failure to implement PIA and for the development of life projects for adolescents. One must not forget, however, that such failure reflects the precariousness of work in these places. The lack of investment in human and material resources, the lack of continuous training, overcrowding and excessive legal demands make the implementation of socio-educational technical work a daily challenge. In addition, the beliefs amongst

---

1    That is an exam to be taken for Brazilian students during the last year of high school.

participants on the role of the technical team are also unfavorable to the establishment of interpersonal relationships that could generate proximal processes. These beliefs reflect the overlap of the judiciary sphere over the executive, since adolescents understand the technical team as officials who evaluate their behavior.

### Socio-educational agents

The participants understood that the agents have the role of assisting in everyday life and safety, with few mentions to the exercise of pedagogical functions. This perception of socio-educational agents as security personnel is related to an organizational culture that places more emphasis on safety procedures than on the pedagogical exercise: "*He's mostly there to open the door for me to go to the bathroom, reach for my food*" (Simpático, 17 years old).

The superposition of the logic of security over pedagogy was most evident in the treatment facilities in Espírito Santo, where there was a recurrence in the presence of staff with clubs and buskins. The research team came to witness a previous riot situation, which was mediated by agents using tear gas bombs. Research from other states also discussed the presence of a coercive logic at treatment facilities (Coscioni et al., 2017), in such a way that these principles seem to be configured as a macrosystemic element in treatment facilities for juvenile offenders.

In addition to contextual elements, the very dynamics of interpersonal relations hindered the establishment of proximal processes. Although coexistence with the agents was frequent, the relations did not allow the engagement in activities that provided life projects. Nor were they reciprocal, with an unilateral respect to which the adolescents had to submit, fearing for expiatory punishments. Due to the lack of pedagogical sense, the relations disfavored learning, with the progressive complexity that characterizes proximal processes being absent.

The participants emphasized that they established a type of relationship with some socio-educational agents that favored the development of life projects. They were employees with whom they affectionately related, who advised them, and with whom they talked about the future. The adolescent Franco (19 years old) was one of the participants who most mentioned the support offered by socio-educational agents. This may be associated with having a clearer sense of future course of action – naming technical courses which he had interest and by demonstrating to be knowledgeable about the labor market. It can also be associated to dispositional characteristics that favored his connection and interest on the agents at the treatment facility and by subjects related to the labor market topic. Apart from Franco, other adolescents (mostly from the oldest age group)

emphasized interest and motivation as dispositional characteristics that favored the connection with agents:

> *They will not get here and talk to you without you having the interest to listen. It may even be that they do that, but they will not go into it further if you do not show interest. So if you seek that from them, they will talk about this with you. Not on paper, but actually talking with you, indicating and creating your life plan based on yourself. Not writing on paper and sending it to a judge.* (Questionador, 18 years old)

In emphasizing the fact that the agents favored the creation of plans *based on* the adolescents, the participant Questionador seemed to perform a counterpoint to the interventions directed by the technicians, who *wrote* the PIA and sent *it to a judge*. Lacking the obligation to write reports, socio-educational agents were more likely to be connected to the adolescents. Although the differential relations with these socio-educational agents were positive, they seemed to lack a type of systematization that would allow a gain of progressive complexity. Interventions seemed to affect future aspirations, but did not allow the planning of a course of action that would enable these aspirations to be executed.

### Pairs

The participants said that frequent interaction among adolescents encouraged the development of conversations about the future: "*That's because we live in the lodging. Then, each one asks the other what they are going to do after they leave. Then they go on talking if you're going to continue, if it's going to change...*" (Franco, 19 years old). With some of the adolescents, this communication had counseling as objective to leave the *world of crime*:

> *I think he's the one I have the most affinity here. The dude chills chatting with me. He's a criminal, like me, but he says to me: "man, go out there and just chill. If I were you, I would get along again with my mom, with my family. Let go of crime".* (Honesto, 18 years old)

This account provides an example of reciprocal and affectionate relationship, which is favorable to the establishment of proximal processes. As in the case of relations established with socio-educational agents, these interactions lack the progressive complexity that characterizes proximal processes. The content of the dialogues has motivation for the future, but lacking a plan for executing these aspirations. That is, relations with peers are characterized by the establishment of proximal processes that generate future aspirations

far from the infraction, but are ineffective in the elaboration of life projects.

The adolescents stated, however, that most peers disapproved of life projects related to education, work, and family, making jokes and sometimes even understanding such elaborations as a weak point for future action. The devaluation of life projects unrelated to infractional practices seems to be associated with a *culture of crime* present in treatment facilities. For this reason, it is categorized as a macrosystemic element that undermines the elaboration of life projects unrelated to the infraction. These contextual elements were reported more frequently in the groups conducted in Rio Grande do Sul, where a strong influence of criminal factions was observed that offered adolescents a sense of belonging to something greater. Participants described relationships that fostered engagement in illicit activities, and led to progressively more complex learning about the *world of crime*:

> I tell him what happened to me and he tells me what happened to him and so everyone goes and talks and hears a bit from each other. You go and save those things and you feel like doing what the other person already did. You want to go through that experience or, sometimes, you have to do it so you don't go through that experience. So that changes the person's head and you end up changing the way you are. So instead of the head having fear of what it's going through and not wanting to go through that, it ends up leaving that aside, learning to live inside of what you're experiencing and doing what they didn't do and do that out there. (Questionador, 18 years old)

Initially, one could question whether such interactions would be proximal processes, since the outcome of the proximal processes is always *positive* – either generating competence or inhibiting dysfunctions. From the perspective of the employees, life projects linked to infractions could be considered a dysfunction. For the research interlocutors, however, such outcomes are competencies that favor better resourcefulness in the world of crime, which allows access to consumer goods and social *status*. From this understanding, the relations between peers can, indeed, be understood as proximal processes.

The prevalence of relationships among peers that favor life projects related to the infraction leads to the understanding of treatment facilities as a *school of crime*. Other studies corroborate the assertion that peers exert influence on adolescents, which may favor entry and permanence into the world of crime (Neri, 2011; Rolim, 2014). The implementation of a solidarity-based community at treatment facilities, coupled with interventions that lead to discussion about new possibilities of life, could promote among adolescents a culture in which life projects far from infractions are possible.

## Final considerations

Based on the presentation of its theoretical and methodological assumptions, it was possible to verify that BTHD has evolved from a context-centered approach into a theory focusing on everyday processes. From this perspective, research based on BTHD should focus on analysis of proximal processes, seeking the development outcome that is of interest. In addition, one should not lose sight of the influence of personal, contextual and temporal characteristics relevant to the research problem. The study design of discovery mode is thus recommended, in particular of factorial and longitudinal character. In this format, research can access how the proximal processes in question are presented according to different personal and contextual characteristics, over time. With grounds on discovery-mode studies, hypotheses are being considered to be tested in verification mode studies using multivariate statistical models that predict complex interactions between the elements of the PPCT Model, or by means of qualitative studies with more participants.

A discovery mode study carried out in treatment facilities for juvenile offenders was presented, having highlighted the influences of theoretical and methodological assumptions of BTHD in the formulation of its problem, the methodological design and the interpretation of its results. Based on the understanding that research should focus on everyday processes, the interpersonal relations established during the deprivation of liberty were chosen as the object of study. A specific development outcome was also chosen – life projects. The aim of the study was, therefore, to understand how these interpersonal relations contributed to the elaboration of the life projects of the participants.

Personal and contextual characteristics relevant to the research problem were accessed based on a 2 x 2 factorial design through which the participants were divided into groups according to the region of residence and age group. The use of factorial designs at the time the study was conducted did not have as purpose the comparison of groups, as usually happens in the factorial design of quantitative researches. Its function is, above all, to enable access to the proximal processes under analysis under the influence of different personal and contextual characteristics.

From the findings, research in verification mode can be planned. In this sense, hypotheses can be created based on the results (such as: the understanding of socio-educational agents as security employees reduces the connection between adolescents and socio-educational agents, which, consequently, decreases the effectiveness

of proximal processes that drive life projects), to be tested in verification mode studies. Quantitative studies can be proposed, especially with a plan of multivariate analysis that predicts the complex interaction between the elements of PPCT Model. In addition, instruments must be created that are adequate to the reality of juvenile offenders. Scales that measure aspects of interpersonal relationships and life projects created in other contexts may not be valid for this audience. In the same way, qualitative instruments could be created that access specifically hypotheses based on interviews, focus groups, observations and other techniques.

The cross-sectional nature of the data collection is a limitation to be considered. Longitudinal designs guided by ecological insertion could favor access to the proximal processes in question over time. Even with such limitations, the study allowed to access information on everyday processes present in at the treatment facilities, highlighting personal and contextual elements that (dis)favor the establishment of proximal processes between adolescents and employees. Analyzed from the point of view of the participants and under the bias of BTHD, this information is relevant for the creation of actions and public policies, which is the ethical purpose of research, according to BTHD.

### Pressupostos teórico-metodológicos da Teoria Bioecológica do Desenvolvimento Humano: uma pesquisa com adolescentes em medida socioeducativa

**Resumo:** Este artigo tem por objetivos: (1) apresentar os pressupostos teórico-metodológicos da Teoria Bioecológica do Desenvolvimento Humano (TBDH); e (2) relatar de que forma esses pressupostos influenciaram a condução de uma pesquisa com adolescentes em medida socioeducativa. Apresentam-se as fases da TBDH, destacando-se a transformação de uma abordagem centrada no contexto a uma teoria que enfatiza os processos cotidianos. Os elementos do Modelo PPCT (Processo-Pessoa-Contexto-Tempo) são discutidos e sugerem-se delineamentos metodológicos como forma de acessá-los em uma pesquisa. Um estudo conduzido com adolescentes em medida socioeducativa é apresentado como forma de operacionalizar o uso da teoria em uma atividade investigativa. A formulação do problema de pesquisa, o delineamento do método e a interpretação dos resultados são discutidos à luz dos pressupostos teórico-metodológicos característicos da teoria.

**Palavras-chave:** metodologia, psicologia do desenvolvimento, adolescente em conflito com a lei.

### Présupposés théorico-méthodologiques de la Théorie Bioécologique du Développement Humain: une recherce avec des délinquent juveniles

**Résumé:** Cet essai théorique vise à: (1) présenter les présupposés théorico-méthodologiques de la Théorie Bioécologique du Développement Humain (TBDH); et (2) décrire comment ces présupposés ont influencé la conduite d'une recherche avec des délinquants juvéniles. Les étapes de la TBDH sont présentées, soulignant la transformation d'une approche centrée sur le contexte à une théorie qui met l'accent sur les processus quotidiens. Les éléments du Modèle PPCT (Processus, Personne, Contexte et Temps) sont discutés et des conceptions méthodologiques sont suggérées comme moyen d'y accéder dans une recherche. Une étude menée avec des délinquants juvéniles est ensuite présentée comme un moyen d'opérationnaliser l'utilisation de la théorie au sein d'une activité de recherche. La formulation du problème de recherche, la conception de la méthode et l'interprétation des résultats sont discutées à la lumière des présupposés théorico-méthodologiques caractéristiques de la théorie.

**Mots-clés :** méthodologie, psychologie du développement, délinquance juvénile.

### Los marcos teórico-metodológicos de la Teoría Bioecológica del Desarrollo Humano: un estudio con adolescentes en medidas socioeducativas

**Resumen:** Este ensayo teórico tiene el objetivo de: (1) presentar los marcos teórico-metodológicos de la Teoría Bioecológica del Desarrollo Humano (TBDH); y (2) relatar de qué forma estos marcos influenciaron un estudio con adolescentes en medidas socioeducativas. Se presentan las fases de la TBDH, destacándose la transformación del enfoque centrado en el contexto a la teoría que enfatiza los procesos cotidianos. Se discuten los elementos del Modelo PPCT (Proceso, Persona, Contexto y Tiempo) y se sugieren los delineamientos metodológicos para accederlos en la investigación. Con la participación de adolescentes en medidas socioeducativas, el estudio presentó un modo de utilizar la teoría en la práctica. La formulación del problema de investigación, el delineamiento del método y la interpretación de los resultados son discutidos a la luz de los marcos teórico-metodológicos sobre el tema.

**Palabras clave:** metodología, psicología del desarrollo, adolescente en conflicto con la ley.

## References

Brasil. (2006) Conselho Nacional dos Direitos das Crianças e dos Adolescentes. *Sistema Nacional de Atendimento Socioeducativo: Sinase*. Brasília, DF: Conanda. Recuperado em 5 de setembro de 2017, de https://bit.ly/1K0moDq

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Pshychology*, *3*, 77-101.

Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1988). Interacting systems in human development. Research paradigms: present and future. In N. Bolger, A. Caspi, G. Downey, & M. Moorehouse (Orgs.), *Persons in contexts: developmental processes* (pp. 25-49). Cambridge, UK: Cambridge University Press.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. H. Wozniak & K. Fischer (Orgs.), *Development in context*: *acting and thinking in specific environments* (pp. 3-44). Hillsdale, NJ: Erlbaum.

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Orgs.), *International encyclopedia of education* (2a ed., Vol. 3, pp. 1643-1647). Oxford, UK: Pergamon Press/Elsevier Science.

Bronfenbrenner, U. (1999). Environments in developmental perspective: theoretical and operational models. In. S. L. Friedman & T. D. Wachs (Orgs.), *Measuring environment across the life span*: *emerging methods and concepts* (pp. 3-28). Washington, DC: American Psychological Association Press.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Orgs.), *Handbook of child psychology: theoretical models of human development* (pp. 793-828). New York, NY: John Wiley & Sons.

Carvalho, M. C. M. (1988). A construção do saber científico: algumas posições. In M. C. M. Carvalho (Org.), *Construindo o saber: técnicas de metodologia científica*. Campinas, SP: Papirus.

Carvalho-Barreto, A. (2016). Paradigma sistêmico no desenvolvimento humano e familiar: a Teoria Bioecológica de Urie Bronfenbrenner. *Psicologia em Revista*, *22*(2), 275-293.

Cecconello, A. M., & Koller, S. H. (2003). Inserção ecológica na comunidade: uma proposta metodológica para o estudo de famílias em situação de risco. *Psicologia: Reflexão e Crítica*, *16*(3), 515-524.

Collodel-Benetti, I., Vieira, M. L., Crepaldi, M. A., & Ribeiro-Schneider, D. (2013). Fundamentos da Teoria Bioecológica de Urie Bronfenbrenner. *Pensando Psicologia*, *9*(16), 89-99.

Coscioni, V., Costa, L. L. A., Rosa, E. M., & Koller, S. H. (2017). O cumprimento da medida socioeducativa de internação no Brasil: uma revisão sistemática da literatura. *Psico*, *48*(3), 231-242.

Coscioni, V., Farias, B. G., Garcia, A., Rosa, E. M., & Koller, S. H. (2018). O convívio de adolescentes em medida socioeducativa de internação com a equipe técnica. *Psico*, *49*(2), 137-147.

Koller, S. H., Morais, N. A., & Paludo, S. S. (2016). *Inserção ecológica: um método de estudo do desenvolvimento humano*. São Paulo, SP: Casa do Psicólogo.

Kuhn, T. S. (1978). *A estrutura das revoluções científicas* (2a ed.). São Paulo, SP: Perspectiva.

Marcelino, M. Q. S., Catão, M. F. F. M., & Lima, C. M. P. (2009). Representações sociais do projeto de vida entre adolescentes no ensino médio. *Psicologia: Ciência e Profissão*, *29*(3), 544-557.

Moreira, J. O., Albuquerque, B. S., Rocha, B. F., Rocha, P. M., & Vasconcelos, M. A. M. (2015). Plano Individual de Atendimento (PIA) na perspectiva dos técnicos da semiliberdade. *Serviço Social & Sociedade*, (122), 341-356.

Neri, N. E. (2011). O "convívio" em uma "cadeia dimenor": um olhar sobre as relações entre adolescentes internados. *Revista de Antropologia Social dos Alunos do PPGAS-UFSCar*, *3*(1), 268-292.

Prati, L. E., Couto, M. C. P. P., Moura, A., Poletto, M., & Koller, S. H. (2008). Revisando a inserção ecológica: uma proposta de sistematização. *Psicologia: Reflexão e Crítica*, *21*(1), 160-169.

Rolim, M. (2014). *A formação de jovens violentos: para uma etiologia da disponibilidade violenta* (Tese de Doutorado). Programa de Pós-Graduação em Sociologia da Universidade Federal do Rio Grande do Sul, Porto Alegre, RS.

Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development: its evolution from ecology to bioecology. *Journal of Family Theory & Review*, *5*(4), 243-258.

Rosa, E. M., & Tudge, J. (2017). Teoria Bioecológica do Desenvolvimento Humano: considerações metodológicas. In A. C. G. Dias & E. M. Rosa (Orgs.), *Metodologias de pesquisa e intervenção com crianças, adolescentes e jovens*. Vitória, ES: Edufes.

Slife, B. D., & Williams, R. N. (1995). *What's beyond science?* London, UK: Sage.

Stake, R. E. (2006). *Multiple case study analysis*. New York, NY: Guilford Press.

Tudge, J. (2008). A teoria de Urie Bronfenbrenner: uma teoria contextualista? In L. Moreira & A. M. A. Carvalho, A. M. A. (Orgs.), *Família e educação*: olhares da psicologia (pp. 211-231). São Paulo, SP: Paulinas.

Tudge, J. R., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and misuses of Bronfenbrenner's

bioecological theory of human development. *Journal of Family Theory & Review*, *1*(4), 198-210.

Tudge, J. R., Payir, A., Merçon-Vargas, E., Cao, H., Liang, Y., Li, J., . . . O'Brien, L. (2016). Still misused after all these years? A reevaluation of the uses of Bronfenbrenner's bioecological theory of human development. *Journal of Family Theory & Review*, *8*(4), 427-445.

Weller, W. (2006). Grupos de discussão na pesquisa com adolescentes. *Educação e Pesquisa*, *32*(2), 241-260.