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Goal setting and self-determination in music making: Tenets of becoming a deliberate and motivated music practitioner

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ABSTRACT

The fields of sports, business, education and other organizational fields have for many decades invested considerable time and resources in research investigating quality of motivation, use of goal setting in relation to performance efficacy and social and personal well-being. Paradoxically, this research has barely been considered in relation to music education and performance sciences. The present theoretical article will present and elaborate goal-setting and self-determination theories in relation to music practice and performance highlighting potential benefits and pitfalls in the context of higher music education. In so doing, the connection between goals, social contexts, motivational quality, and instrumental practice/ performance will be presented, discussed, and elaborated from theoretical and practical perspectives. Besides actualizing motivational perspectives in the field of research in music education, the present article was especially written with the goal of enlightening the field of higher music education (i.e., music performance students, educators/professors) introducing ways of facilitating motivation and deliberate working habits.
Keywords: goal setting, self-determination, motivation, instrumental practice, music acquisition

Introduction

The present article was motivated by the discovery of opposing trends in experience based literature (i.e., literature written by experienced pedagogues and musicians reflecting years of accumulated experience of teaching and performing) and findings in instrumental practice research (Starker, 1975; Neuhaus, 1993; Galamian, 1999; Heimberg, 2007; Leimer & Gieseking, 1972; Bruser, 1997; Jørgensen, 2011; Jørgensen & Lehmann, 1997; Jørgensen, 1996; Nielsen, 2008). The experience based practice literature emphasizes the importance of planning and setting realistic goals for practice as the foundation for progress and mastery of performance. However, the scientific literature on music practice reveals that only a minority of music students are accordingly proactive in their approach to instrumental practice (Jørgensen, 1996; Jørgensen & Lehmann, 1997; Nielsen, 2004; Miksza & Tan, 2015). Furthermore, several studies reveal that music students perceive that they are not taught how to practice, but rather how to play and perform music (Jørgensen, 1996; Atkins, 2009; Lehmann & Jørgensen, 2012; Jørgensen & Lehmann, 1997; Gaunt 2009; Burwell & Shipton; 2013; Jabusch, 2016). Paradoxically, principles of planning and goal setting have for centuries been considered salient within experience based literature on the art of music practice and performance (Martens, 1919; Galamian, 1999; Starker, 1975; Leimer & Gieseking, 1972; Bruser, 1997; Heimberg, 2007; Neuhaus, 1993). The American violist Tom Heimberg explains the planning of music practice as follows: "We need to set our intentions clearly as we begin to practice, and shape each practice session like a work of art. At the same time, we need to let go of our expectation of an immediate result" (Heimberg, 2007: 5). Madeline Bruser, pianist and author of *The Art of Practicing*, also emphasizes and encourages students to practice calmly and thoroughly with detailed planning away from the instrument accompanied by constant reflection during practice (Bruser, 1997). Similarly, Indiana University professor and cellist Janos Starker explains that:

> Discipline must be the basis of one of the classic disciplines, music, and once attained, freedom of expression may spring forth. The order of learning is significant. Beautiful artistic ideas running rampant without disciplined instrumental control remind one of a ride in a magnificent automobile over unpaved roads. Written poetry in a language yet unlearned seldom succeeds (Starker, 1975: 8).

One of the most important teachers in classical music during the last century was the Russian pedagogue and pianist Heinrich Gustavovich Neuhaus, who had the following to say about music practice and performance:

> The clearer the goal (the content, music, perfection of performance), the clearer the means of attaining it. This is an axiom and does not require proof. The 'what' determines the 'how', although in the long run the 'how' determines the 'what' this is a dialectic law (Neuhaus, 1993: 2).

These quotes all underline the importance of planning and organization of instrumental practice.

Within the field of sports science and psychology, considerable resources have been invested in research focusing on how athletes set goals, achieve expertise, and prepare for competitions (Orlick & Partington, 1988; Burton et al., 2010; Burton, 1989; Beauchamp, Halliwell & Fournier, 1996; Cleary & Zimmerman, 2001; Filby, Maynard & Graydon, 1999; Starkes & Ericsson, 2003). Over the last five decades, this research has made goal setting the most applied and investigated technique among aspiring athletes (Locke, Saari, Shae & Latham, 1981; Burton, 1989; Burton et al., 2010; Kyllo & Landers, 1995; Nicholls, 1984; Cleary & Zimmerman, 2001).

An additional topical issue closely connected to goal setting is motivation. The field of sport psychology (in contrast to music) has been greatly involved in investigating athletes' and coaches' quality of motivation for continued achievement (Lemyre, Roberts & Howard, 2005; Treasure & Roberts, 1995; Bentzen, Lemyre & Kenttä, 2015). When we work toward new heights, the motivational purposes for setting goals determine our long-term effort and joy of involvement in whatever we aspire to (Deci & Ryan, 2000).

Based on the above-presented topics, the main objective of the present theoretical article is to present, discuss and actualize goal setting in relation to motivation in music education research. In so doing, two well-established theories, *goal setting theory* (GST; Locke & Latham, 1990) and *self-determination theory* (SDT; Deci & Ryan, 1985, 2000) will be presented, discussed and elaborated in relation to instrumental practice and teaching of music in the conservatoire from a practical point of view.

Theoretical questions of interest

1. The art of planning instrumental practice is closely related to learning how to set adequate goals (Neuhaus, 1993; Heimberg, 2007; Martens, 1919; Galamian, 1999; Bruser, 1997). This might sound both trivial and obvious. However, one of the essential questions remains: How do we set goals, and what types of goals have the potential to motivate individuals to achieve continuity, persistence and joyfulness in music making and performance?

2. The efficiency and continuity of ongoing work is affected by the context in which goals are set and the motivational quality that underpins the achievement context (Deci & Ryan, 1985, 2000): What type of motivational climate might facilitate music students joy, well being and motivation for achieving personal aspirations?

3a. How can principles from GST and SDT combined facilitate music educators´ and students´ work on instrumental practice?

3b. How precisely might these principles be applied in the context of higher music education?

Goal setting

For more than five decades, goal setting has been highlighted in relation to sports, education, and organizational work contexts as a key source of motivation, efficiency, and self-regulation (Zimmerman & Kitsantas, 1997; Cleary & Zimmerman, 2001; Zimmerman, 2008; Zimmerman & Bandura, 1994; Locke, Frederick, Lee & Bobko, 1984; Locke et al., 1981). Through this development several goal constructs have emerged.

Goal constructs

Edwin Locke (1968) was the first researcher to initiate a pure goal setting construct. Since then, hundreds of empirical studies have been published on the topic. Throughout the last five decades, several theories regarding goal setting have emerged. The first phase of the development of a goal theory was based on the Aristotelian idea that purpose constitutes direction and action (Locke, 1968). Subsequently, Locke investigated how different types of goals affect human motivation and work persistence.

During the late 70s, another construct, *achievement goal theory* (AGT) emerged (e. g., Nichols, 1984). AGT is interested in learner's goal orientation (i.e., why people set goals for themselves). Nicholls (1984) distinguishes *mastery orientation* (i.e., focus towards personal mastery and learning) and *ego-orientation* (i.e., focus towards out-performing others and social comparison). Compared to GST, AGT is more interested in explaining how goal orientation affects the performance of different activities. For instance, research has generally found that mastery orientation yields better performance than ego-orientation (e.g., Nicholls, 1984, Treasure & Roberts, 1995). Another goal theory, *goal content theory* (GCT), similarly distinguishes *extrinsic goals* (i.e., orientation towards financial success, fame/popularity and bravura) and *intrinsic goals* (i.e., orientation towards personal growth, community, and clos relationships) (Deci & Ryan, 2000). In essence, GCT is somehow similar to AGT. On the other hand, GST investigates the act of setting goals on micro level identifying what types of goals that affect performance (e.g., difficult and specific vs. general and vague goals, self-set goals vs. assigned goals etc.). In addition to the effect of goal setting on performance, GST also comprises human goal orientation (i.e., learning goals vs. performance goals). For instance, Seijts, Latham, Tasa, and Latham (2004) found that specific high learning goals effectively influence performance regardless of the subjects'goal orientation. In essence, the positive effects of learning goal orientation are achieved by inducing it as a state. Consequently, GST is a broader theory than AGT and GCT and will consequently be discussed in relation to music acquisition in higher music education in the present article. Moreover, in addition to predicting use of strategies, metacognition and performance, GST provides a conceptualization of goal setting that investigates the most applicable and effective ways of setting goals (Locke & Latham, 2006, Zimmerman, 2008).

Principles of goal setting

The first iteration of GST simply defined goals as "what an individual is trying to accomplish; which is the object or aim of an action. The concept is similar in meaning to the concept of purpose and intent" (Locke & Latham, 1990: 7). Thus, the theory emphasizes conscious goals and the levels of performance associated with them. Locke and Latham (1990) further developed their theory with two main elements, the content and the requisite of goals. "The content refers to the nature of the goals, and the requisite reflects the intensity and the perceived resources and requirements to attain the level of performance demanded by the content" (Locke & Latham, 1990: 25).

The theory has found that *specific difficult goals* are associated with higher performances than so-called *do-your-best goals*. In addition, the highest effort of performance is linearly connected to setting difficult goals as long as they are congruent with the goal achiever's performance capacity (Locke & Latham, 1990; Bandura & Cervone, 1983).

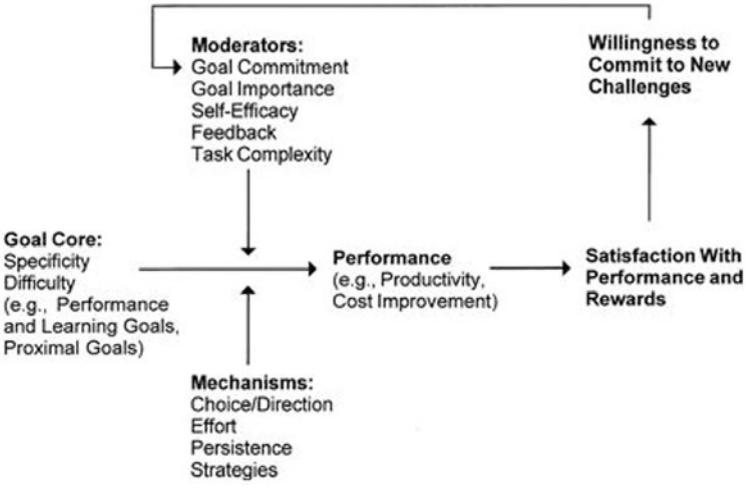

Figure 1. Main components of Locke and Latham's goal-setting theory, printed with permission from Edwin Locke (Locke & Latham, 2002).

Furthermore, the theory presents both *mechanisms* and *moderators*. Numerous studies have found that *mechanisms* such as *effort, persistence*, *choice,* and the repertoire of *strategies* in use are all factors that are positively affected by specific and adequately challenging goals. Important *moderators* of the theory are *goal commitment, goal importance, self-efficacy, feedback,* and *task complexity* (Locke & Latham, 2002). *Goal commitment* and *goal importance* are related to the extent that goals are self-set, and to the extent that purposes for involvement in goal-directed activities are provided. Albert Bandura's (1977, 1986) social cognitive concept of self-efficacy is central in GST. GST maintains that challenging assigned goals with a rationale increases self-efficacy (Locke & Latham, 1991). Furthermore, the use of feedback (a Bandurian socio-cognitive phenomenon) is fundamental in GST. According to GST, when feedback is adequately provided, students are able to evaluate and adjust their level of direction towards goal requirements. Moreover, the right types of feedback lead to feed-forward and vice versa. Lastly, task complexity is found to stimulate a broader use of task strategies. Related research has found that proximal goals in combination with distal goals raise self-efficacy and task efficiency (Locke & Latham, 2002).

GST in relation to music and sport acquisition

Music performance students are frequently involved in goal-directed actions through daily practice on their instruments. *Goal content*, accordingly, might be to learn to play a concerto or sonata within a certain time frame, or to practice five hours daily for the rest of the semester. Such types of goals (because of their general nature) are, according to Locke and Latham's framework, considered as general goals and typically lead to what is referred to as "do your best" activity (Locke & Latham, 1990). A recent study on instrumental practice found that music performance students wanted specificity, a day-to-day plan including how and what to practice (Bratlie & Jørgensen, 2015). In relation to this notion, a meta-analysis revealed that: "Individuals setting specific and hard or challenging goals outperform individuals with specific easy goals, do-best goals, or no assigned goals. People with specific moderate goals show performance levels between those of people with easy and hard goals but may not perform better than people with do-best goals" (Locke, Saari, Shae & Latham, 1981: 145).

Music students in higher music education are commonly highly passionate about reaching their general goals (Jørgensen, 1996; Bonneville-Roussy, Genevieve, & Vallerand, 2011). However, it seems likely that students of music performance lack the ability to properly acknowledge their innate resources and the pre-requisites necessary for attaining general long-term goals (Jørgensen, 1996, Hatfield, Halvari & Lemyre, 2016; Lehmann & Jørgensen, 2012; Nielsen, 2004). The more specific the goals, the more predictable and efficient they become. Furthermore, if goals are set hierarchically (i.e., short-, medium-, and long-term goals), the goal setter is more likely to perceive more meaning, continuity, and motivation than if their goals are non-hierarchical (Locke & Latham, 2002). These claims were supported by a meta-analysis that included 36 studies on goal setting in the realm of sports. The study found that absolute goals and precise goals were more efficient than vague and general goals. Athletes who combined short- and long-term goals showed significantly better results than athletes who only had long-term goals. Finally, cooperative and participant-set goals had significantly greater effect on performance than assigned goals. Moreover, individual, personal and specific goals in combination with short- and long-term goals predicted the most effective goal setting procedures (Kyllo & Landers, 1995). A mixed method intervention study trying out goal-setting techniques among six music students revealed that participants were largely involved in general goal setting prior to intervention. Semi-structured interviews and surveys revealed that general goals tended to make participants inadequately random and inexact in their daily practice. As a result, they were uncertain about how to solve problems and plan concrete practice tasks

and thus dissatisfied with their progress. The study's general findings revealed that students became increasingly more motivated and efficient when they set specific challenging daily goals in combination with long-term goals in their instrumental practice (Hatfield, 2016). Finally, a study assessing the effects of multiple-goal strategies on performance outcomes in swimming training and competition confirmed the predicted hypothesis. The two groups using multiple goal perspectives significantly outperformed both the control group and single-perspective groups. Interviews revealed that the single-outcome goal group explicitly expressed that they found goal setting to be inefficient and anxiety provoking. In contrast, participants applying process goals (i.e. goals that refer to specificity about the behavior needed for successful performance) qualitatively expressed that routines had a positive effect and increased their level of confidence (Filby, Maynard & Graydon, 1999).

When we set goals for ourselves, we are moved by some kind of motivation toward achieving the goal. Thus, the quality of motivation influences how goals are perceived and carried out (Deci & Ryan, 2000). However, even if one is effectively energized through well-documented goal principles, this does not necessarily mean that the energy behind one's motivation is dialectic with need-satisfying ways of developing motivationally. Accordingly, different aspects of motivation will be further discussed in relation to what is referred to as basic psychological needs and motivational quality (Deci & Ryan, 2000).

Self-determination

One of the most topical and most cited theories on motivation is self-determination theory (SDT) (Deci & Ryan, 1985, 2000). SDT emphasizes motivation as a qualitative phenomenon rather than a quantitative one. In other words, instead of viewing motivation as incremental, or more vs. less of motivation and behavior, SDT explains human motivation in terms of inborn psychological needs. Based on years of experimental and naturalistic research, SDT claims that humans, in addition to physiological needs, have psychological needs as well. Three *basic psychological needs* (BPN) were discovered, namely *competence, autonomy* and *relatedness* (Deci & Ryan, 1985, 2000). SDT claims that if one or more of the BPN are thwarted, individuals are likely to feel unmotivated and helpless. Common consequences of *need thwarting* are defensive mechanisms such as giving up, procrastination, isolation, mechanistic learning and other defensive reactions. On the other hand, when the BPN are fulfilled, individuals

experience well being and satisfaction based on identification and autonomously driven activities. Moreover, humans feel energetic, volitional, satisfied and highly motivated under need-satisfying conditions (Deci & Ryan, 1985, 2000).

Controlled and *Autonomous* motivation

SDT distinguishes between two qualitative different forms of motivation: *controlled motivation* and *autonomous motivation*. Controlled motivation is based on external pressure (e.g., incentives, deadlines, high expectations, threats and demands, social comparison). Controlled motivation is thus related to external control where humans lack identification and attachment to the executed action. SDT research has found broad evidence that controlled forms of motivation have debilitative and destructive effects on human behavior (Deci, Kostner & Ryan, 1999; Deci et al., 1991). Contrastingly, autonomous motivation is viewed as harmonious with humans' volition, interests and inner values and needs. Autonomous motivation has been found to relate to ongoing effort, creativity, psychological and physical well-being and conceptual learning (Deci & Ryan, 2000; Deci & Ryan, 1985). The earliest research within SDT focused on incentives' effect on intrinsic motivation[1]. This research has been summed up in a meta-study including 128 studies showing that monetary incentives have a significant negative effect on intrinsic motivation (Deci, Koestner & Ryan, 1999). Moreover, contingent incentives become an external stimulus that overshadows intrinsic behavior. Further research on self-determination in education has found that students become more involved in conceptual learning, intrinsically motivated, and goal-oriented when the BPN are fulfilled. Furthermore, conditions such as stringent deadlines, high social expectations, grade orientation, and social evaluation resulted in similar defensive outcomes (Deci et al., 1991). Individuals controlled by external incentives are likely to choose the shortest path to achievement, hence, the easiest way out (Ryan & Deci, 2000). Moreover, SDT explains that external stimulus controls internal regulation making the individual externally controlled rather than self-determined. Human agency, according to SDT, is not interpreted as a dichotomy of either external, or internal regulation. Extrinsic and intrinsic motivation are viewed on a continuum from *amotivation* to *intrinsic motivation*. Furthermore, this continuum highlights how human beings perceive external stimulus as either more, or less internalized, as illustrated in Figure 2.

1 This research was conducted in opposition to the dominating paradigm of behaviorism that generally saw incentives as behavioral reinforces predicting amount of behavior.

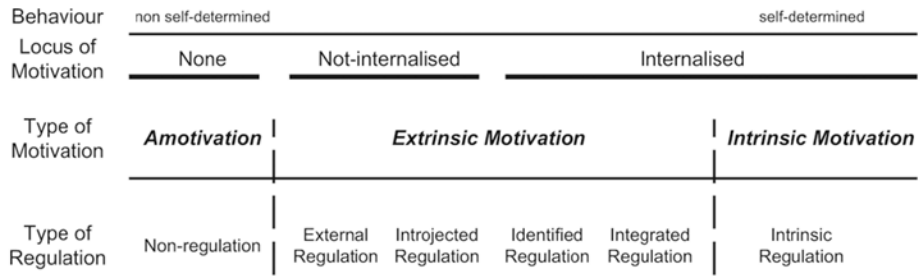

Figure 2. The organismic integration model of SDT illustrated with permission from Edward Deci (Deci & Ryan, 2000).

The organismic model of integration distinguishes four types of extrinsic motivation (Fig. 2). *External* and *introjected* regulation are related to controlled forms of motivation such as being forced, coerced, pressured or manipulated into action. These forms of extrinsic motivation lead to anxiety, procrastination, *ego-involvement*[2] and lack of interest as a result of no, or poor, integration of external regulation (Deci, Koestner & Ryan, 1999). On the other hand, *identified* and *integrated* forms of regulation constitute an integral part of autonomous motivation through which humans can personally relate to the regulation. Identified and integrated regulation bring about endorsement, interest and qualitative action in achievement contexts because individuals are able to identify personal value in the external regulation (Deci, Koestner & Ryan, 1999).

Motivational quality in music acquisition

Many musicians were forced to play an instrument during childhood, typically by over-ambitious parents who also controlled the music practice context (McPherson & Davidson, 2002). It is not uncommon in such controlled environments for parents to sanction their children when the right quality and amount of practice is not carried out (McPherson & Davidson, 2002). According to SDT, such an environment is likely to either make the practitioner want to quit playing altogether, or to make the practitioner feel detached and alien to music practice throughout their professional life. Paradoxically, an authoritarian teacher might be more autonomy supportive than a non-authoritarian teacher. For example, a student who identifies with, and feels personally related to authoritarian teaching methods could still be an autonomous

2 Ego-involvement is a condition in which individuals are mainly concerned about external reactions, or external means for task involvement (e.g., others' expectations, outperforming others, avoiding failure or making a bad impression etc.)

practitioner since the underlying purpose of action relates to the students' sense of self. This implies that we may be dependent on significant others and simultaneously autonomously motivated, fulfilling our basic psychological needs. Moreover, motivation and conceptual learning are likely to spring forth when realistic feedback, supporting language, rationales, belief and autonomy are provided in relation to music activities. Such environments create room for potential identification with and integration of the activity itself (Evans, 2015; Renwick & McPherson, 2009; Rostvall & West, 2001; Reeve et al., 2004; Hallam, 2002). However, more research is needed to confirm these notions.

Self-determination and goal setting compared

Conceptual similarities and differences among the theories

According to GST, goals that are self-set, specific, hierarchical, difficult yet not unrealistic, time-bound and congruent with one's values are the most effective and motivating goals (Locke & Latham, 2002). SDT emphasizes qualitative aspects of motivation such as autonomous motivation and its effects on ongoing behavior (Deci & Ryan, 1985, 2000). GST principally focuses on "conscious performance goals and the level of task performance rather than on discrete intentions to take specific actions" (Locke & Latham, 2002: 12). This suggests that GST mainly focuses on the "how" and the "what" of goal setting rather than the "why." SDT, on the other hand, mainly focuses on the impact of underlying values, need-satisfaction, and intentions of goal-directed behavior. Thus it refers, to a greater extent, to purposes of action or the "whys" (Deci et al., 1991). Moreover, when we discuss intrinsic motivation in relation to GST, we have to recall SDT and GST are fundamentally different, since intrinsically motivated activities are "those that individuals find interesting and would do in the absence of operationally separable consequences" (Deci & Ryan, 2000: 233). Motivation deriving from activities based on hierarchical goal setting might be seen in relation to extrinsically motivated activities in which "people behave to attain a desired consequence such as tangible rewards or to avoid a threatened punishment" (Deci & Ryan, 2000: 236). Goal setting tends to entail an instrumental element, which is external to and separate from the activity itself[3]. For instance, while preparing for orchestral auditions, it would

3 Naturally, execution of actions that are extrinsically motivated can also be enjoyable and motivating; however, intrinsic motivation is often aimless and based on the pure joy of the activity in itself, like when

be appropriate to apply long-term goals accompanied by specific goals scaffolding the practice process. Evidently, there is a certain underlying instrumental aspect, which motivates the practice activity. Deci & Ryan (2000) proclaims that the intention behind an action ought to harmonize with a person's inner values. Moreover, if students practicing orchestral excerpts realized the greater value of practicing such excerpts, they would be motivated to accomplish the task at hand (regardless of whether they perceived the task as dull and draining). Viewing the same example from a GST perspective, students would be motivated by completing a target audition accompanied by the satisfaction of having attained realistic, specific, and challenging goals. Hierarchical goals provide us with a rationale and plausible reason for investing effort in a given activity. Accordingly, SDT advocates that providing rationales concerning why a certain external regulation might have personal value to a given individual, stimulates the process of identification and internalization (see Figure 2). However, the two concepts have different underpinnings: GST is mainly concerned with efficiency and results, while SDT is fundamentally concerned with psychological need-satisfaction, intrinsic motivation and mental well-being. Accordingly, Deci and Ryan (2000) point out that one major limitation of Bandura's (1977; 1986) social cognitive theory (and thereby implicitly Locke and Latham's GST) is that it does not distinguish between external and internal perceptions of *locus of causality*[4] in relation to motivation (deCharms, 1977). Another main difference between the theories is that GST focuses on activity, learning and motivation as somewhat quantitative (either more motivation or less motivation for attaining the required action). GST's general underpinning is related to effective and desired behaviors and outcomes. Whether the outcome is based on external demands and coercion, or genuine interest and eagerness, is not explicitly mentioned as an important moderator as long as the activity works efficiently and leads to the desired results (Locke & Latham, 1990; Bandura, 1977; Bandura, 1986).

In order to illustrate and perceive this difference, let us imagine a music student practicing a difficult etude following specific guidelines and daily goals. As a result of this pertinent method of practicing, the student might master the piece. However, despite having mastered the etude, the student might still feel controlled and unsatisfied if he or she has not identified and internalized the personal value of practicing

one enters a flow state in which one becomes inextricable with the activity.

4 *Locus of causality* refers to whether the action is perceived as externally or internally driven. Perceptions of internal locus of causality foster need-satisfaction, conceptual learning, and genuine personal involvement in a task (Deci & Ryan, 2000). This should not be confused with Bandura's distinction between personal and vicarious experience (Bandura, 1977). Bandura does not go further into differentiating intrinsically vs. extrinsically driven goals in relation to personal well-being and psychological need-satisfaction, only the amount, efficacy, and type of behavior in general.

and mastering the etude. Moreover, the student's reaction to learning is a result of an external locus of causality. Although this way of learning might be objectively efficient and goal achieving, it still might be perceived as time draining and mechanistic due to a lack of proper identification and integration (see Neuhaus, 1993). The environment and the communication of purpose or intent are thus relevant to ongoing motivation. Moreover, due to the theories' different ways of operationalizing and explaining human behavior (i.e., GST explains human motivation in terms of goal types and perceptions of efficiency, while SDT explains human motivation in terms of need-satisfaction), I propose, therefore, that a combination of these two theories entails qualities (theoretical, practical, and applicable) that complement and enhance human action and motivation (including instrumental practice and performance of music). The next sections preliminarily hypothesize and discuss potential implications of combining aspects of GST/SDT.

Combining aspects of the SDT and GST in music acquisition

Combining key elements from both theories (i.e., basic psychological needs and specific and optimally challenging goals) might be particularly effective despite the discrepancy between theoretical underpinnings. First, according to SDT, autonomy, relatedness and competence provide the essential nutriments for basic psychological need satisfaction. Need-satisfaction, furthermore, would enable the student to motivate him or herself and at the same time stimulate high effort for the relevant task at hand. At the same time, according to GST, continuous aspiration based on challenging and specific yet attainable goals would foster direction, effort, persistence, and use of the most adequate strategies in instrumental practice. As a result, one is satisfied with the results of effort and thus willing to commit to new challenges (see Fig. 3).

I have not been able to find any studies explicitly viewing goal setting in relation to SDT within the domain of higher music education. The nearest study found to the present topic of interest was a study investigating the relationship between *passion*[5] and attainment of elite level performance among musicians. The study found that "harmonious passion was positively associated with the use of learning goals, that was in turn positively associated with deliberate practice. In turn deliberate practice

5 Passion: "a strong inclination towards a self-defining activity that people love, that they consider important, and in which devote significant amounts of time and energy" (Bonneville-Roussy, Genevieve & Vallerand 2011: 124). Harmonious passion is based on a flexible, persisting internalization of activity, free of external or internal pressure. Obsessive passion derives from controlled internalization grounded in external expectations or internal pressures leading to maladaptive behavior such as uncontrollable excitement and activity-contingent self-esteem (Bonneville-Roussy, Genevieve & Vallerand 2011).

predicted higher levels of performance" (Bonneville-Roussy, Genevieve & Vallerand, 2011: 128). Hatfield (2016) tried out a psychological skills training program for music students in which goal setting was one of the core techniques. The study found that general goal setters tended to focus on task irrelevant aspects emphasizing the final result or outcome. Post-test results in the same study revealed that changing from general outcome goals to the application of specific goals helped extrinsically motivated students (i.e., oriented toward the final result and others' expectations) become absorbed in the task at hand, which, in turn, enhanced their self-efficacy, concentration, and motivation for instrumental practice and performance (Hatfield, 2016). A longitudinal study investigating motivation in instrumental practice found that students who were supported by their parents (though not controlled), and who were driven by personal interest, continued to play their instruments. On the other hand, students who avoided practicing challenging pieces, and who were not supported by the environment (i.e., parents, significant others), quit playing (Pitts, Davidson & McPherson, 2000). From a self-regulated theory perspective, Hatfield, Halvari & Lemyre (2016) surveyed music students' motivation and practice habits in higher music education. The findings revealed that planning and goal setting strongly correlated with self-efficacy. Furthermore, students involved with planning/goal setting were found to be self-observant, volitional, and motivated toward continuous efforts to learn.

In combining aspects of GST and SDT, one might question whether they are simply too different for comparison. My answer to such a question would be that the theories' different underpinnings probably make them even more applicable in real world contexts. Lack of parsimony has been a tendency when explaining theoretical concepts (Treasure & Roberts, 1995). In essence, related research tends to be biased because it compares and mixes constructs (mainly in survey studies) that are *too* similar in nature (e.g., specific goals and mastery goals, perfectionistic striving and mastery orientation, obsessive passion and controlled motivation/perfectionistic concerns etc.). When theories are inherently different, the interactional benefits are both more promising and applicable than in the contrary case. Moreover, GST and SDT are both viewed as generally reliable theories since they have been tested and refined through hundreds of empirical studies over almost half a century. Furthermore, both theories have a strong inclination toward applicability providing guidelines on how, what and why their conceptual principles work in applied settings. Consequently, I believe there is a pragmatic value in actualizing core elements from both theories. With the research discussed above in mind, it is reasonable to believe that GST and SDT resemble the very core of helping music students and teachers to enhance their motivation and efficiency

in teaching, organizing, and carrying out instrumental practice and performance. A preliminary model was developed (Figure 3) to illustrate the potential contributions to understanding motivation from synthesizing key elements of GST and SDT:

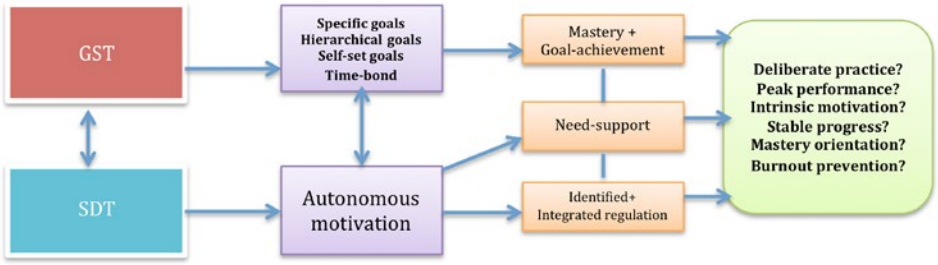

Figure 3. Model combining key- aspects of goal-setting and self-determination theories.

GST and SDT provide concrete guidelines regarding how to apply the theories to a wide range of contexts. Hence, we can only hypothesize tentative assumptions as a result (Fig. 3). However, it seems clear that the fields of music education and music performance science could benefit from the concepts presented on both a theoretical and practical level (Evans, 2015; Hatfield & Lemyre, 2016). Moreover, not only might a synthesis of the two theories contribute to new perspectives on motivation in instrumental practice and performance, but it also might actualize new directions in the teaching and acquisition of music. The six hypothesized outcome variables (Fig. 3) are discussed in relation to music acquisition in higher music education in upcoming section.

GST and SDT in the applied context of music acquisition

Rather than discussing key elements from the topics elaborated above, the present article concludes with hypothetical examples of how principles from GST and SDT might be applied to teaching and instrumental practice in the conservatory context. The case examples are based on my personal experience, numerous conversations with fellow-musicians, and music education research. The first case example illustrates how a music student might develop in a context where principles from GST and SDT are insufficiently applied or absent. The second case example, on the contrary,

illustrates how a music student might blossom and develop when exposed to key aspects from both theories. The aim of these narratives are not to substitute reel case examples, but to provide the reader with contrasting examples emphasizing both the benefits and pitfalls of instrumental practice in relation to GST and SDT. In essence, the discrepancy between the two hypothetical cases´ motivational quality is highlighted in order to provide a clear practical and theoretical embedding of the two theories. The case examples are also meant to practically exemplify the combining of GST and SDT illustrated in Figure 3.

Hypothesized case examples

Case 1: Marcus, an eager second-year music student is practicing the expressive first movement of the Brahms violin concerto. Marcus has become familiar with the concerto by listening to numerous recordings he has obtained over the years. Consequently, he has gained a clear yet elusive idea of interpretation, personal taste, and detail concerning the final result. His teacher, Nathaniel, who is greatly respected as one of the best violinists in the country, has assigned a task, and expects to hear his student play through the whole first movement of the Brahms concerto at his next lesson. As a result, Marcus practices intensively with great expression, repeating the difficult expressive sections over and over, just as he had heard his favorite violinist Isaac Stern perform them. After two weeks of practicing, Marcus is ready to perform the piece for his teacher. However, during the lesson, he notices that things really are not working out as expected. He excuses himself and tells his teacher that he has in fact managed to play the difficult sections at home and in the practice room. Marcus cannot not grasp why it is still not working after all the taxing hours of practice and repetition he has put in during the past two weeks. Nevertheless, Marcus keeps on trying to make it sound right with great intensity during the lesson. Nathaniel responds, without paying particular attention to Marcus' comments, and gives additional suggestions on fingerings, focusing on the phrasing and expression in the development section of the work. In addition, they work on bowing technique for ten minutes, with Nathaniel explaining and showing multiple ways he ought to use his right arm and fingers. The lesson ends with Nathaniel explaining to Marcus that he can accomplish a lot during the next week and that he expects to hear the Brahms first movement played rather flawlessly in tempo and in tune at the next lesson the following week (i.e., a general goal).

Case 2: Like Marcus, Daniela, an Italian cellist working on the expressive and difficult Dvořák cello concerto, also has strong ideas on how to perform the work. Unlike

in Marcus' case, however, her teacher, Leonard, has exposed Daniela to techniques emphasizing the whole learning process. Before even starting to play the concerto, Daniela had sat down with Leonard and had a conversation about the various parts of the concerto. Leonard had made Daniela identify key challenges and propose ways to overcome these challenges. During this initial lesson, Leonard had asked her open-ended questions about how she perceived the work. Moreover, he had asked her how she would overcome technical and musical difficulties, thereby involving Daniela as the active party. Leonard would typically ask questions related to problem solving: where to start working, and why she found particular ways of practicing important in relation to learning the concerto. Daniela noticed that Leonards' questions generated new ideas and knowledge about how to approach the work. In addition, Leonard had made her aware of how the best performers tended to keep a calm, somewhat distanced mode of observation while practicing difficult passages. He demonstrated this approach to practice by showing the right way accompanied by an explanation of why this was important and what she could expect from this type of instrumental practice. Subsequently, Leonard asked Daniela if she could explore this uncontrolled calm mode, as he called it, when practicing the five most difficult passages in the concertos' first movement. The lessons with Leonard always ended with Daniela writing goals for the upcoming week. The general goals consisted of playing the five passages calmly, letting go of the feeling of controlling the passages. Through self-observation and experimentation, Daniela discovered that it would be a good idea to practice the whole first movement slowly and rhythmically. In addition to the general goals, Daniela wrote down specific daily goals giving concrete information on *how* to practice the five passages. For instance, she had noticed that she learnt complex parts unexpectedly quickly when keeping the tempo manageable. This enabled proximate success. She had learnt from Leonard that this was due to the simple fact that "if we practice quickly and in a fast tempo, we forget things quickly, if we practice slowly and thoroughly, we forget things slowly." Knowing this simple law of cognition led her to adjust her instrumental practice accordingly. Daniela also paid attention to how she managed her time, preventing injuries and unnecessary strain by taking small breaks while practicing and never practicing more than 45 minutes in a row.

Case 1: As the week of practice went on, Marcus became increasingly frustrated the closer it got to his lesson with Nathaniel, who expected him to play the first movement of the Brahms flawlessly in tune. He had practiced through the movement many times and repeated the difficult parts over and over frenetically. Despite having practiced more than seven hours the day before his violin lesson, he had still not mastered the difficult sections. As a result, Marcus started to doubt whether he was ever going to

be able to play the piece as his teacher expected him to. In addition, he began to feel increasing pain in both hands and shoulders resulting in additional concern. Marcus was now seriously concerned about how his teacher would react and if he ever would be able to master the Brahms concerto, which, in turn, had started to annoy him.

Case 2: Daniela, on the other hand, stuck to her specific goals and noticed a huge difference already on the second day of practice. On the third day of practice, she was able to play the five passages almost flawlessly in half tempo consistently. Daniela noticed how her muscle memory had absorbed and accommodated the correct way of execution (for review Lehmann & Jørgensen, 2012). She became exited and wanted to try to play it in tempo with full expression. She did so once with success, but then she remembered the goal of not letting this eagerness and temptation take control over the practice process that she was just in middle of. The day before her cello lesson, she noticed how, like a carpenter, she had built up the piece in layers with the correct execution and accordingly felt genuine satisfaction. She was looking forward to showing the newly internalized results to Leonard.

Case discussion and reflections

Marcus, an enthusiastic, talented and motivated learner, lost track of his developmental process due to both lack of specific guidelines and Nathaniel's general and external expectations. The only thing that mattered to Marcus was to play the Brahms concerto as his teacher expected and as expressively as Isaac Stern (his favorite violinist) had done several years before him. His professor Nathaniel, like many other music professors, intuitively emphasized the music, phrasing and technical execution of the work during lesson, giving loads of directions and information (Burwell & Shipton, 2013). Furthermore, Nathaniel, would typically be the only person speaking during the lessons giving well-meant suggestions culminating in a general long-term goal, namely playing the first movement in tempo, in tune and as flawlessly as possible. Because he was trying to reach these general external goals, Marcus kept on practicing in an intuitive way, "doing his best" during the execution of practice. This dynamic recalls West and Rostvall's (2001) doctoral thesis on autonomy in music acquisition, which identified an asymmetrical pattern between music educators and music students. Music teachers were found to dominate and define the learning situation leaving "little room for students and teachers to discuss and reflect on the teaching process" (Rostvall & West, 2001: 3). Furthermore, Marcus, had never been taught how to set adequate goals for himself. As a result, after repeated experiences of failure, he had increasingly started to attribute failure to a lack of ability and talent.

In Marcus' case, we see an evident lack of goal setting and a dominant concern about not living up to his teachers' general expectations and satisfying his teachers' demands (i.e., introjected regulation). This external locus of causality increasingly thwarted Marcus' intrinsic motives for working on the Brahms concerto and for playing the violin altogether. Introjected regulation typically generates ego-involvement and avoidance behavior due to externally rooted general expectations. In accordance with Locke and Latham (2002), this debilitative goal orientation probably would have decreased if Nathaniel had provided Marcus with a few very specific learning goals to guide the whole practice process on a daily basis. Autonomous motivation might also have emerged had Nathaniel stimulated Marcus' need for exploration, his curiosity and his creative expression. A different teaching style might, in turn, have created a context in which Marcus could have felt, competent, engaged, and autonomous in his acquisition. Even though Leonard was a cellist, Marcus could have benefited from taking lessons with him for a while. Leonard would have awoken his need for self-exploration, awareness and intrinsic motivation for playing the violin. Leonard's approach is comparable to that of a medical doctor's, wherein mutual collaboration results in a common understanding of a diagnosis which is treated with appropriate prescriptions, making the patient healthy and vital. Moreover, because of Leonard's concern with satisfying the basic psychological needs of autonomy, competence and relatedness accompanied by specific challenging goals, he created a condition in Case 2 in which Daniela could develop freely, fully focusing on the process of learning (i.e., each task at hand). And because of Daniela's orientation towards concreteness and awareness in the practice process, neither the final result nor external expectations appeared to be a salient factor in her developmental process. She had constituted her own complete recipe for what, when, and how to approach her practice. In addition, she was even aware of potential pitfalls and thus able to cope adequately when destructive habits and desires sneaked into her cello practice.

Music students' motivational climates and tentative consequences

The two learning environments presented in the case examples resulted in two distinctively different outcomes: Successfully reaching specific goals over time encompassing competence, autonomy and relatedness had made Daniela a secure and self-efficacious music student who actively performed in master classes and competitions. Although she never practiced more than four hours per day, she was considered to be one of the top music students in the academy. Marcus, on the other hand, after having repeatedly experienced unsuccessful performances felt uncertain whether to continue with music studies.

Concluding remarks

The present theoretical article is meant to illuminate motivational constructs successfully applied and developed in sports, education and organizational settings and actualize them in the context of music. My goal was to suggest a new approach, not only to music researchers, but to the applied field of music practice and performance as well (including music professors and music students). Future research in the field of instrumental practice might benefit from taking a "hands-on" approach, implementing the presented material in teaching and guidance of music students. This implies more interventional research trying out principles from GST and SDT. Such future research should emphasize cooperation between students, professors and researchers in order to have a potential impact on ongoing methods of instrumental practice and teaching of music. However, more exploratory research is needed (i.e., survey studies investigating need-satisfaction in relation to deliberate practice habits and mental well-being) on motivation in instrumental practice and teaching of music. Such research should assess the motivational climate not only of music students, but of music educators/professors as well. Music educators/professors are more prone to motivate others if they are themselves autonomously motivated (Deci & Ryan, 2000). In essence, if people feel that they are important and autonomously motivated agents in their own environments, they are more likely to provide autonomy-support to others in the same environment (for review see Solstad, Van Hoye & Ommundsen, 2015). Indeed, this is a proposition that deserves greater attention in future research.

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