

MUSICAL PSYCHOLOGY

HUMAN TALENTS' STRUCTURE FROM MUSICAL PROSPECTIVE

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Annotation. *The purpose of this paper is to present a universal model for human talent following the example of musical talent. Psychological categories used to describe high achievements' potential — 'abilities', 'giftedness', 'talent', 'creativity', 'intelligence' and 'motivation' — are shown as parts and elements of an organized structure. A more detailed model for musical talent is constructed where familiar psychological categories reveal their sub-components, such as sense of rhythm, pitch and memory for musical ability or productive imagination and architectonic ear for musical giftedness. Musical motivation is associated with expressive ear originating from communication signals of early man. Three musical tests, helping to distinguish psychological resources of music lover versus active music amateur or professional musician, are presented. The testing system for music made possible: 1) to discover a future music lover in a child and thus invite her/him to music school (according to longitudinal study done from 2001 to 2009 with first- and second-graders, these children extremely rarely drop out); 2) to give the opportunity to those with professional music potential to reveal it and choose a career in music; 3) to pinpoint future winners of music competitions before the competition starts; 4) to predict future success or failure of musical prodigies when they are still before their teens. Finally, the author suggests the new structure for our basic talents with motivational, operational and creative 'blocks' functionally similar to their 'musical counterparts'. Presumably, that could be the model for each of H. Gardner's 'multiple intelligences' forming human talents spectrum. Isn't it possible to use the newly constructed model as a clue to testing practice for other talents outside music? That makes a socially relevant goal for future research in vocational psychology.*

Keywords: *musical prospective, human talent, signals, expressive, professional music potential, music competitions, motivational, creative, musical counterparts, multiple intelligences.*

Why learn more about human talents? Is it by chance that individual differences in our potential to create, to solve problems or to invest into common knowledge are constantly discussed and researched? And this scientific discourse continues although too many feel opposed to the very possibility of unequal psychological resources leading to inequality of professional choices — society puts too much effort into social piece to let it be threatened by 'talent concept'. Thus it's not surprising that for some psychologists 'road to excellence' seems to be nearer to 'hard work' than to anything else including 'talent' [6, 22, 23]. But it's too tempting to preserve the dream of ideal vocational choice that very well suits our natural predisposition: every human being bears hope for the revelation of his/her natural gifts to become what we must really be — and those who've found their talent and developed it to the highest possible level seem to be the first who gain happiness and social respect. Imagine the achievements of society where every person knows from early years in what direction his/her efforts are to be invested most effectively — couldn't

that be the society where no one is dissatisfied with his/her professional outcome? And isn't it the real goal of psychology to be helpful in finding out what everyone could do best?

As scientists often say, there is nothing more practical than good theory. Do we have a fully admitted 'talent theory' relying on true evidence? No. Here is one of very typical descriptions of common feeling among researchers: 'The great minds of Europe have been pondering the problem of talent — its nature and structure, its origin and development — for some two thousand years now, from Plato and Aristotle to such modern-day psychologists as Sternberg, Csikszentmihalyi, Gardner, Heller and others. But despite their efforts, the problem of talent is far from resolved. An avalanche of publications and conferences notwithstanding, the very concept of talent has become no clearer'.¹ One of the most authoritative

¹ Manturzevska, M. (1994) Les facteurs psychologiques dans le développement musical et l'évolution des musiciens professionnels. In *Psychologie de la musique*, (ed.A. Zenatti), Presses Universitaire de France, p.260.

BASIC TERMS OF TALENT'S CONCEPT

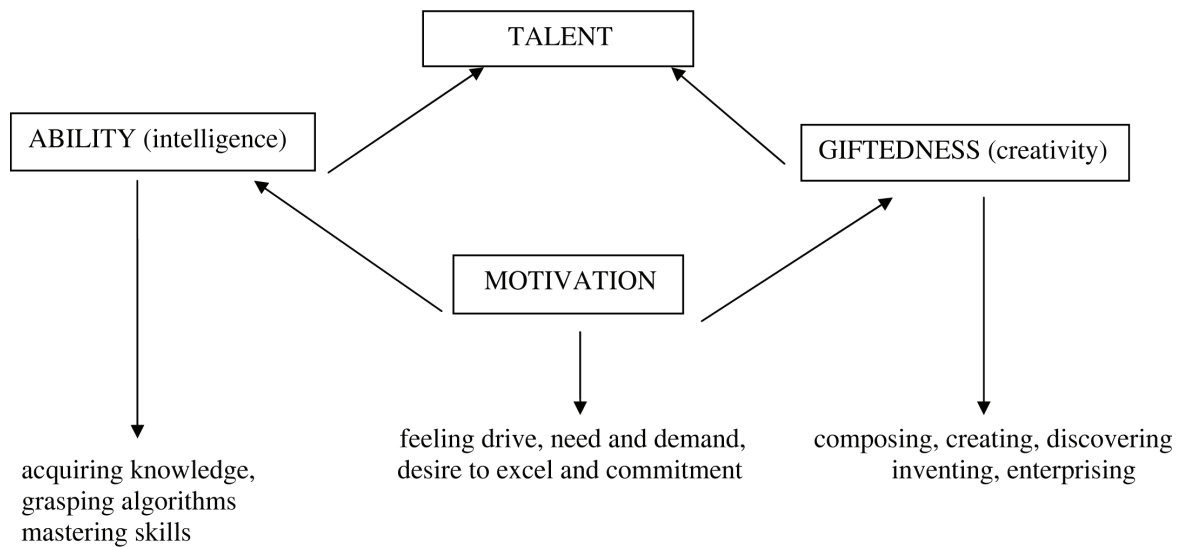


Fig. 1

scholars in the field Francois Gagné stated that terms and definitions within the emerging theory of giftedness and talent are as many as there are scholars in the field—seventeen chapters of the renowned book on the topic [*Conceptions of giftedness* (1986) (ed. R. Sternberg and J. Davidson). New York: Cambridge University Press] offer seventeen different approaches to terms and definitions: 'Within that book, no one ever adopts another scholar's definition; each of them prefers to create his/her own. All these conceptions develop in parallel, without ever confronting their respective contradictions and divergences'.¹ And he is perfectly right as the situation didn't change much from several decades ago until now (could we forget that his reproach dates back not too far, just 2004?) Everybody might agree that such terms as 'abilities', 'giftedness', 'intelligence', 'creativity', 'talent' and some others refer to human potential for huge success and high achievement in science, arts, business, sports or other practical matters. And yet dependencies, correlations and interconnections between those psychological traits remain rather vague. In other words, the structure or model of human talent putting all psychological ingredients into correct order is still to be expected.

Let's imagine the structure of talent as it looks now. Psychologists agree that the most visible and important is the difference between psychological instruments aimed at learning and skill acquisition, on one hand, and psychological instruments supporting discover-

ies, creative enterprises, new ideas, etc., on the other hand [7,8,10,15,18,21,25]. 'The results of a great number of empirical experiments describe a weak correlation between these two types of giftedness'.² And a number of researchers also agree that motivation or the desire to excel is so important that it might be included into 'talent's' model [9,16, 17, 26]. If we make a schematic drawing of what we think talent might be, it looks like the fig. 1.

Presumably, talent in any domain roughly looks like this model, consisting of three relatively independent 'ingredients' — ability, responsible for educational part of high results in any domain, giftedness, responsible for creative part, and motivation, responsible for desire to excel in the domain. Yet it is hardly possible to come up with effective help in vocational choices using this model. In the same way as IQ or creativity concept, it is also non-specific: it doesn't give a clue to testing procedures aimed at giving professional directions for anyone, be it a child, a teenager or a youth. How we construct tests for future engineers or IT-specialists, how we know whether her or his path in life is connected with law, or may be with medicine, or with dance? To know this, we are to connect abstract psychological categories with concrete operations of mind, ways of thought and types of action being vital for this or that occupation.

Do we have a concrete talent's model for any of the domains? A model using certain psychologi-

¹ Gagné, F. (2004) An imperative, but, alas, improbable consensus! *Roeper Review*, 27, p.12.

² Siegler, R.S. and Kotovsky, K. (1986) Two levels of giftedness: shall ever the twain meet? In *conceptions of giftedness*, (ed. R.J. Sternberg and J.E. Davidson). Cambridge University Press.

MUSICAL TALENT'S STRUCTURE

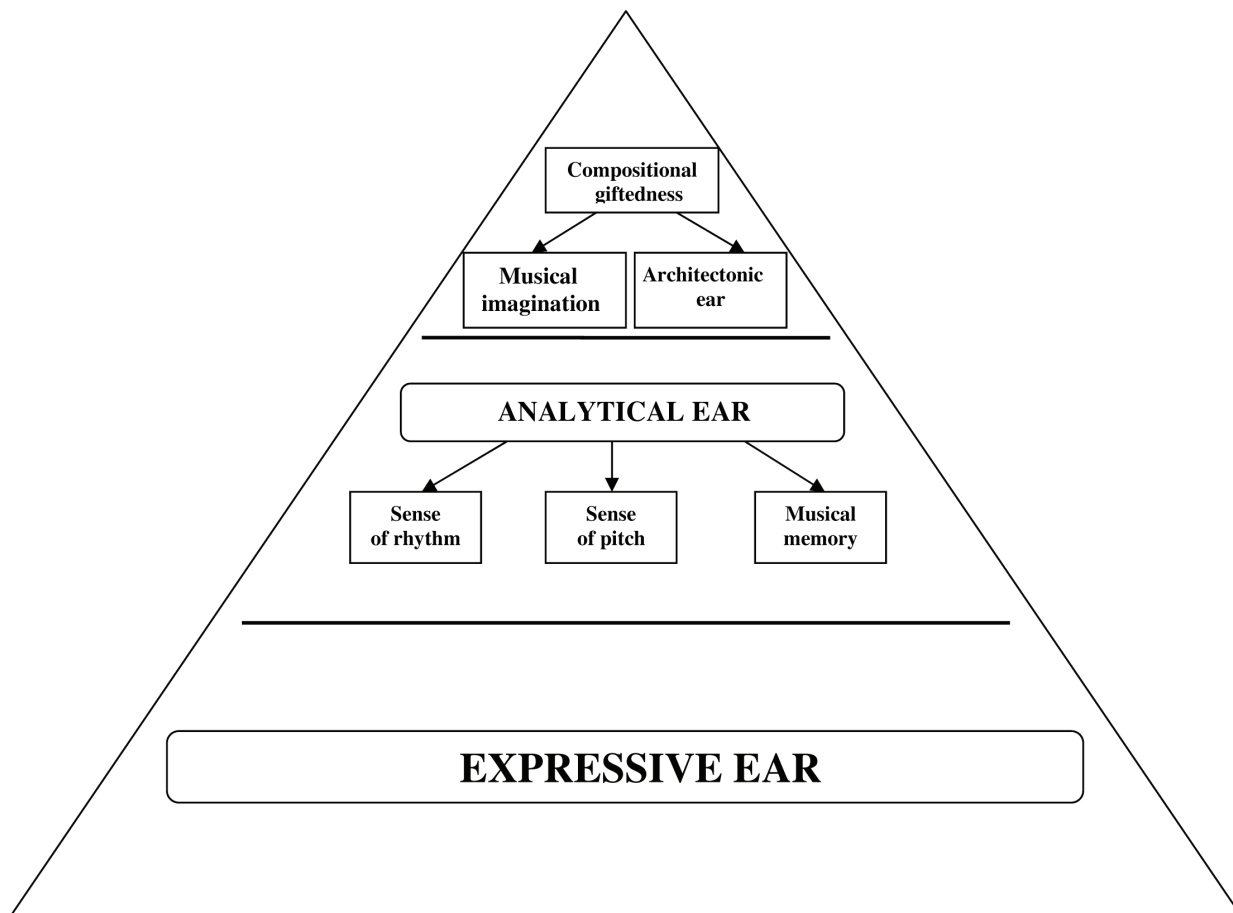


Fig. 2

cal categories and also explaining how to make this model work for practical purposes? The answer is 'yes'. We have at least one successful attempt of building a model for one talent, and that is musical talent; its model is already being used as a prediction tool for analyzing people's musical future [8, 10, 12, 13]. It's hardly surprising that music is the first: wasn't it music that during centuries denied everyone the possibility of becoming a renowned composer or acclaimed instrumentalist? The very idea of exceptional abilities, giftedness and talent was always alive among musicians. Weren't it also musicians that made attempts to predict children's musical career having the possibility to compare successful and unsuccessful predictions done in the past? And don't we have the most detailed scientific ground — cognitive psychology of music and neuropsychology of music — to rely on when

researching all aspects of interaction between our mind and music including exceptional abilities to perform and compose?

The structure of musical talent is presented below. All three components of any talent's model are there. Motivation is embodied through *expressive ear* for music — a special type of perception when the meaning of musical message together with its emotional essence causes recipient's empathy and understanding. Ability (or musical intelligence) is presented by traditional features, such as sense of rhythm, pitch and musical memory. Musical ability as a whole including its sub-components is called *analytical ear* due to its function: to analyse musical material knowing each element's role in the system of organizing sounds in time (rhythm) and 'space' (pitch). And finally, *compositional giftedness* (or creativity) that is

a necessary part of any musician's talent including that of performers, carries two 'blocks': *architectonic ear* looking after the integrity and esthetic perfection of musical text, and *musical imagination*, giving life to musical elements — sounds, motifs and phrases to be accepted or denied by architectonic ear (fig. 2).

What this more detailed talent's structure is giving us? It is telling us how levels of musical talent differ, i.e. what psychological predisposition is needed for musical amateur versus just music lover and, further on, what is the difference in musical potential between someone who is ready to play and sing at home in contrast to someone else who gives a hint of becoming a professional performer, singer or composer. Here are some practical achievements where musical talent's structure happened to be a clue: several types of testing tools have been invented and put into practice, and all of them turned to be very useful for music teachers, music schools and individuals. Basically, they are tests where the subjects just listen to some real musical excerpts, compare them and make their choices (all the tests are done in groups, they take about 10–15 minutes and do not demand any special education from a person who administers them). As a result it becomes possible: 1) to discover a future music lover in a child and thus invite her/him to music school (according to longitudinal study done from 2001 to 2009 with 10.000 Moscow first- and second-graders these children don't drop out) [8]; 2) to give the opportunity to those with professional music potential to reveal it and choose a career in music if they'd like to do so [11,13]; 3) to pinpoint future winners of music competitions in advance before the competition starts; 4) to predict future success or failure of musical prodigies when they are still before their teens [8,9].

There are some other outcomes from broad experimenting with musical tests showing how far one's musical talent is developed. It turned out that: 1) the structure of musical talent is based on phylogenetic process — the aspects of talent lying 'lower' in the talent's model are older than those lying 'higher' — expressive ear happened to be born much earlier in the course of human evolution than analytical ear, and the youngest are the most sophisticated aspects of talent — architectonic ear and imagination; 2) the 'lower' lies psychological category as part of talent's model, the more people are blessed by possessing it: there are more people ready to become happy listeners and music lovers than active music amateurs, and there are more people blessed with enough musicianship for amateur musical entertainment than for professional career in music. The proportions between those groups for general population, i.e. for children and unselected adults, are the following: about — music lovers' group, — amateur group, 2, —

professional group; 3) each stage of talent's development includes previous stages — music amateurs are recruited out of music lovers and music professionals are to possess aspects of talent that characterize all previous stages — both expressive and analytical ear; 4) the natural development of musicality is to repeat the stages that humanity passed through on its way to fully developed musical talent — knowledge and skill representing the lower stages of talent's development are to be the first in education and training, higher stages are to appear later in the educational process, following the same order they've appeared in human evolution.

The tests' battery relying on musical talent's structure predicts how likely is musical success for any child, teenager or adult, and this battery is broadly used by educational institutions and individuals. Could the structure of musical talent, now experimentally supported by much evidence, become an example for constructing a model for other talents, and thus, in the end, helping people to better understand their strengths and possibilities? Positive answer to this question seems the most likely. Due to research process for musical talent's construction it's more clear where and how to look for each of any talent's parts and elements.

Speaking about 'other talents' we don't have in mind the endless amount of talents needed for each and every profession. It could take centuries to research and understand all of them remembering that every new generation is to face new occupations that appear due to new technologies and new social demands. And yet contemporary psychology has the answer to the simple question: how many talents humans have? Basically, only nine. Just nine — that's the answer of Howard Gardner, the author of 'Frames of Mind' who offers the new philosophy of giftedness 'outside IQ' [4, 5]. He was the first to proclaim 'multiple intelligences' approach stating that we've gained in the course of evolutionary development nine intelligences none of which equals 'general intelligence', 'creativity' or any other psychological definition. These 'intelligences' are: bodily-kinesthetic, spatial, natural, verbal, logical-mathematical, musical, spiritual, inter-personal and intra-personal. Like all colors are born from a certain mixture of spectrum colors, all our talents are formed out of Gardner's nine 'intelligences'. It's enough to know the structure just of these nine — one of them is 'musical' — to be able to present any special psychological demands for any human occupation. So, we have only eight talents left...

Humans as everything and everyone in Nature are built according to the Natural Law of Harmony: symmetry, analog, correspondence, equivalence, isomorphism, etc. rule our World. From that standpoint talent for music is analogous to any other talent and all of them have similar structural elements

TALENT'S STRUCTURE

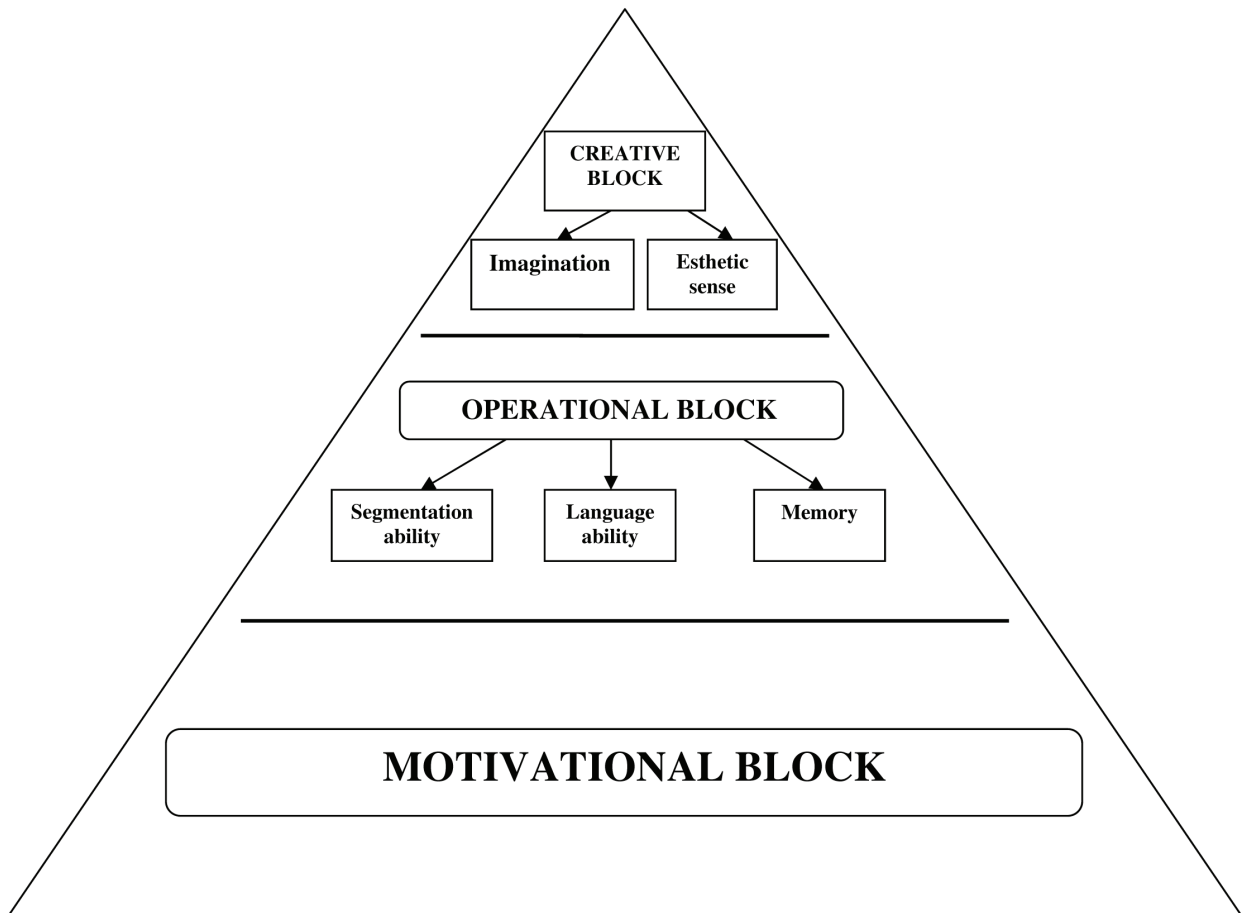


Fig. 3

for similar functions. Where to look for Motivation that is the energy center of any talent, its motor, its stimulation mechanism, making it work? According to music, expressive ear had been born out of sound signals helping human species survive exchanging emotionally meaningful information. Can we see what circumstances gave birth to another talent? How the activity where this talent had been so necessary supported the survival of our very remote ancestors? What psychological equipment was vital when this activity had just started its way through human civilization? These are the questions we are to pose and answer to be able to find any talent's motivation center.

The second 'floor' of musical talent is analytical ear that is its 'operational center'. Isn't it logical to imagine operational center of any talent to be functionally similar to analytical ear in music? Ear for music (pitch) and sense of rhythm give way to musical language formation: to segmentation of musical flow, to organizational systems

like modes and keys for sounds and groups of sounds, to different functions for those sounds and sound groups, to diverse patterns and 'gestalts' for them. Do other activities form their own 'languages'? Mostly the answer is 'yes'. If so, then what must be psychological apparatus making possible mastering of those 'languages'? How our mind approaches these 'language-like' processes in other activities and makes sense of them — that is the question to be answered in search of analytical ear's analog in the structure of other talents.

And, finally, the third and highest 'floor' of musical talent has two 'blocks': one for delivery of new melodies, sound complexes, phrases, etc. and the other for esthetic judgement of them to accept those corresponding to artistic idea of a certain piece and to reject those falling out of its style and breaking its integrity. And what about other talents? Is there any 'holistic idea' when we build an air-craft, create a costume or deliver a lecture? Certainly, yes. Outside art and music human

talents let us invent many new elements and patterns needed for any type of construction from a novel to computer program and yet those talents don't let our 'composition' turn into ugly mess. Always and everywhere talented person looks for and finds harmony, beauty and perfection appearing due to strict choice of necessary elements out of many more unsuitable and inappropriate ones. Isn't that any doubt that talents outside music also carry in their 'creative block' the same two 'operators': an operator of productivity or, in other words, imagination and an operator of harmony and proportionality?

Let's try to draw a preliminary structure of any talent where functions of its parts and aspects in the talent's 'organism' are to some extent clear, but we still have to find out the rest (fig. 3).

When all Gardner's 'talents' reveal their structure, when we know more about motivational, op-

erational and creative parts of them, the time comes for the construction of tests for the same purpose as it had been done in music, i.e. for finding for all of us whether this or that talent is truly 'our cup of tea'. Music prompts that it will be possible to do during any child's early years — before 10 years old.

Universal test battery for all nine 'talents' found by Howard Gardner — is there more tempting task for psychology? There is hardly anything more effective from business point of view: to increase 'human capital' to the highest possible extent by giving everyone her/his appropriate occupation. Research expenditures that are needed to make this 'dream' possible are very little compared to any other technological or industrial project. Isn't it time to make the first step to super-effective society full of happy individuals having realized and put to common good their diverse talents?

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