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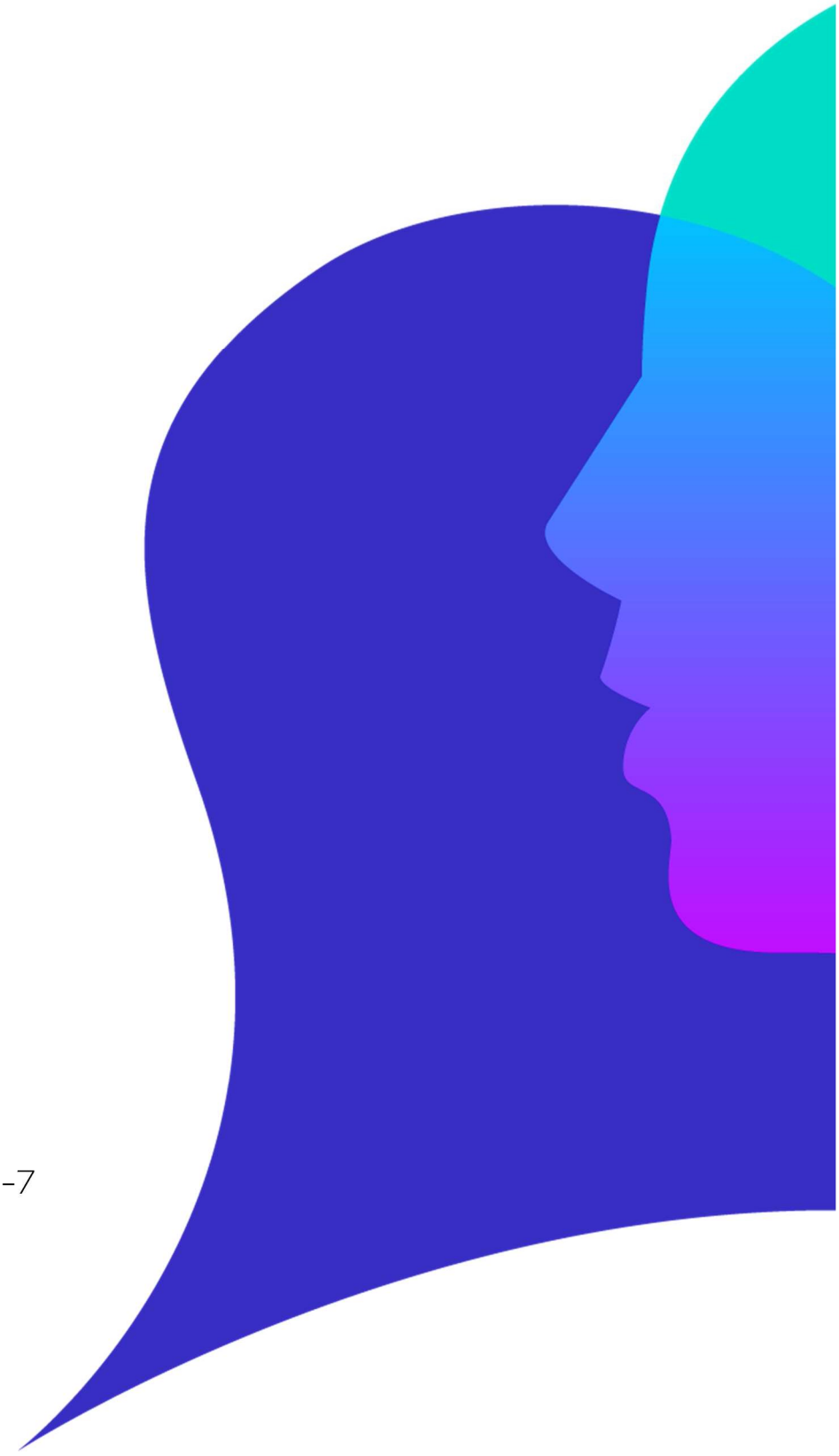
SOCIAL FUTURING CENTER

TAMÁS KOCSIS

THE SOCIAL FUTURING INDEX IN THE CONTEXT OF ECONOMY, SOCIETY AND NATURE

COMPARING NINE COMPOSITE INDICES MEASURING COUNTRY PERFORMANCE

WORKING PAPER SERIES NO. 9/2020



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Publisher:

Corvinus University of
Budapest,
Social Futuring Center,
Budapest 1093
Fővám tér 8.

ISBN 978-963-503-852-7
ISSN 2560-2357

Online version:
www.socialfuturing.com

1. INTRODUCTION

Measuring the size of prosperity and the performance of a political community is a strategic issue. Reassessing or exceeding the associated GDP as a key indicator is of paramount importance from both a scientific and a political point of view, especially since emphasis on prosperity and sustainability have also increased significantly in the last few decades (Stiglitz et al., 2009). The increased interest is also reflected in the fact that nowadays a number of new indices are being published, the existence of which is not always obvious, or whose field of interest is limited to a relatively narrow area. An inventory of these indicators has already identified 178 different indices in 2008 (Bandura, 2008). At the same time, indices comparing and ranking different countries for the future and for a broad range of survival/sustainability often receive high media attention. They show which countries – as quantifiable entities – can be considered successful, and thus exemplary from a certain point of view, and which need to change, and in which direction.

It is therefore necessary to place the introduced Social Futuring Index (SFI; Szántó et al., 2019) among the more significant composite indices known today, which publish data at the national level on a regular, verifiable and freely accessible basis. A further benefit of this study is that not only do we get new information about the role of SFI, but we can also examine the indices selected for comparison in a novel approach. How do they compare to each other in terms of their content; how can the condensed, numerical information and country rankings they provide be interpreted if we think in the classical triad of (1) the economy, (2) society, and (3) nature?

Although the indices themselves rank countries, this time they will themselves be the subjects of a specific ranking: to what extent are they economic-, social- or nature-oriented. Thus, we focus on whether the indicators within an index primarily reflect economic, social or nature aspects, and on which features of the overall index the holistic picture emerging from them indicates. In addition to the mere appearance of the aspects represented by each indicator, we will not examine how to take into account a certain factor (for example, whether the index interprets the growth/decline of

government debt or the population as a positive or negative phenomenon in its own right, or whether the index weighs between the various indicators).

It is important to note that the indicators of the Social Futuring Index based on the concept of social futuring (Szántó, 2018; Csák, 2018; Aczél 2018) are on the one hand structured along pillars (ecological-geopolitical, technological, socio-economic, cultural) and on the other hand arranged along normative standards (peace and security, attachment, care, balance) (Szántó et al., 2019). In principle, we could also make comparisons between indices according to these aspects, but (i) our method, Intenscope, can only represent three aspects together in a well-organized, two-dimensional plane; and (ii) the SFI criteria are so new that the eight selected indices could only be placed along these criteria with little or no difficulty. In this study, therefore, we use the analysis from the economic, social and nature aspects.

In the study, we follow the following terminology: Index: nine composite indices included in the analysis, together with SFI. Indicator: a component of an index, even if it is itself a composite index. For example, in our terminology, we refer to the HPI (Happy Planet Index) analyzed here as an index, while we consider the Ecological Footprint, which is also a composite part of this index, as an indicator. Sphere: either the economy, the society or nature.

In the study, we first briefly review the concept of social futuring and the system of economic-social-nature relations, and then we describe our research method, the intensity map (Intenscope). Finally, we present a map of the indices and draw conclusions about the orientation of the introduced SFI.

2. THEORETICAL BACKGROUND

Social futuring is a characteristic of a social entity, such as a country, city, organization, family, that expresses its potential, ability and aptitude to interpret, influence and bring about future change and to prepare for its strategic management in order to provide its members in the long run with the conditions of a good life in a unity of order (Szántó, 2018; Csák, 2018; Aczél 2018; Szántó et al., 2019). This potential/aptitude/suitability is measured by the Social Futuring Index (SFI), which is an index developed by the Social Futuring Center of the Corvinus University of Budapest in concert with domestic and international cooperation[1].

Thus, the index is embedded in the theoretical-philosophical concept of "social futuring" (Csák, 2018, Aczél, 2018, Monda, 2018, Kocsis, 2018), it is its operationalized, quantified composite index, assisting decision-making (Szántó et al., 2019).

As a quantified index, together with all similar indices, it is transparent about human „goods": it can be deduced from its methodology (Bóday, 2020) that a phenomenon captured by its indicators –condensed into a numerical index – contributes (+) or worsens (-) a country's futurability. The concept of social futuring can in principle be applied to entities at a levels lower than countries, but in the index - in the first phase of work ending in 2020 - researchers will only collect data available for OECD countries. The at hand is to compare the SFI with well-known indices of a similar nature.

Our analysis is conducted along the classical triad of economy, society, and nature (see, e.g., Giddings et al., 2002; Lemke – Bastini, 2020). Our choice is justified by the well-known nature of this division in the literature and analyzes. We show that SFI can also be well analyzed in this respect; and we look for the index characteristics recognizable in this "field" together with the other indices under study.

[1] Cooperative Partners: Barabási Lab (Boston, MA, USA), Geopolitical Futures (Austin, TX, USA), Institute of European Studies, Chinese Academy of Social Sciences (Beijing, China), Central Statistical Office (Budapest, Hungary).

Importantly, this study is not the subject of an in-depth study of the relationship between economy, society, and nature, but based on Kocsis (2018) and strong sustainability (Daly, 1996; Harangozó et al., 2018), we profess nested, concentric circular representations of spheres (1 . figure). According to this, the largest, inclusive system is the natural environment (nature), its subsystem is society, while its other subsystem is the economy. Deviation from this normative model can be a source of many economic-socio-nature problems (Lietaer et al., 2012, Chapter II). Thus, in line with strong sustainability, "nature" is viewed as the largest sphere that can be interpreted without society and the economy, and therefore we no longer refer to it as an "environment", but as a „nature" that places more emphasis on self-existence. In a less precise analysis, the two terms are interchangeable.

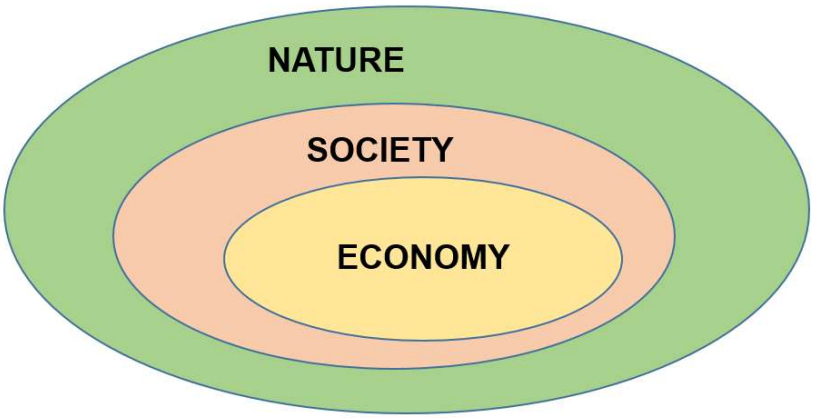

Figure 1: The triple system of economy, society and nature: concentric circles as sets – subsets. *(Note: the subset of the economy is based on society; 'society and economy' is a subset of nature and are built on it.)*
(Source: the author)

After stating all this, we can "spread out" the analyzed spheres (Figure 2). This "extension" is of a purely technical-logical nature and facilitates the expert classification of the indicators and the subsequent analysis.

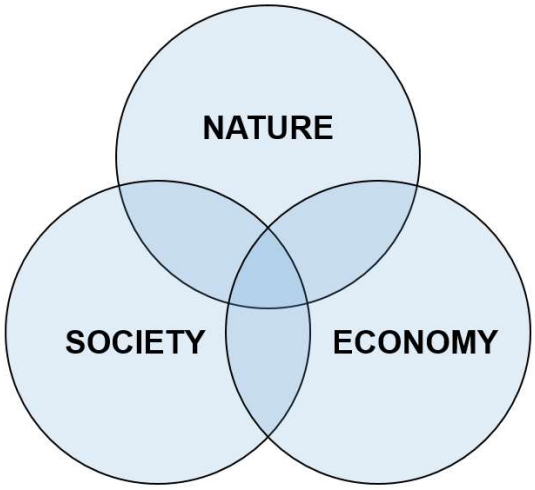

Figure 2. The triple system of economy, society and nature: intersecting sets (technical view).

3. MATERIAL AND METHOD

The SFI index, introduced in 2020, is interpreted in the "field" of eight other indices with a regularly published, publicly accessible database capable of establishing a ranking between countries[2]. The sum of these eight indices is the whole universe of the analysis, in the sense that we throw the 175 indicators condensed into these indices into an imaginary hat, and examine the SFI as the ninth, external index for this indicator mass. The indices included in the analysis are summarized in Table 1.

Index (Abbreviated)	Index (Full name)	Number of Indicators	Developer/ Publisher	Applied Document
BLI	Better Life Index	24	OECD	OECD, 2019
CRI	Change Readiness Index	30	KPMG	KPMG, 2019
GRI	Global Resilience Index	12	FM Global	FM Global, 2020
HDI	Human Development Index	3	United Nations	UNDP, 2019
HPI	Happy Planet Index	4	New Economic Foundation	Jeffrey et al., 2016
IDI	Inclusive Development Index	12	World Economic Forum	WEF, 2019
SDG	Sustainable Development Goals Index	84	United Nations	Papadimitriou et al., 2019
WHI	World Happiness Index	6	United Nations, Sustainable Development Solutions Network	Helliwell et al., 2020
SFI	Social Futuring Index	28	Corvinus University of Budapest	SFC, 2020

Table 1. Eight benchmarks included in the analysis + Social Futuring Index (SFI)

[2] In selecting the eight benchmarks, in addition to those mentioned in the main text, we also take into account the content aspects that can be related to the concept of social futuring. Thus, for example, it can be suggested that (1) why resilience (GRI) – see Aczél, 2018; (2) why change readiness (CRI) – see Monda, 2018; (3) why sustainability (SDG, HPI) – see Kocsis, 2018; (4) why happiness (WHI, HPI) – see Kocsis, 2018; (5) why better life (BLI) - see Csák, 2018; (6) why inclusiveness (IDI) - because social futuring is "available to a wide range of people" (Szántó, 2018); (7) why human (HDI) - because social futuring is by definition "social" (human) (Szántó, 2018).

As a first step of the analysis, we examine all the indicators of the nine indices (n = 175 + 28 = 203, as the SFI contains 28 indicators). Given that indicators rank countries in a complex way, we hypothesized in the study that each of the index indicators can be classified into one of the following categories: (1) economy, (2) society, (3) nature. As we have shown in the theoretical part, these spheres are intertwined, "everything is related to everything", so, in a conservative approach, we would have to classify almost all indicators into all three categories - making this type of analysis meaningless. This is why we sought to identify the most typical single category in the expert classification.

In the case of some indicators, however, despite all efforts, it would be very difficult to convincingly decide which sphere it belongs to the most, so the categorization allows for multiple spheres (two or three) to be marked at the same time[3]. For example, in the case of "intermediate indicators" such as "food and energy security" or "research and development expenditure", all three spheres were marked as strongly affected (with weights of 1/3 – 1/3 – 1/3). But, for example, "foreign currency reserves" have clearly been identified as an economic indicator, "urbanization rates" as clearly a social indicator and "ecological footprint" as clearly a nature indicator – although the phenomena they measure are also intertwined with other spheres. The expert classification of all indicators as above is provided in Tables 4. and 5. in the Appendix.

After categorizing the indicators, we summarized for each index how many indicators belong to each sphere. The three quantities obtained in this way were not evaluated on their own, in their absolute magnitude, but in relation to each other (ratio of three quantities). We were interested in the extent to which an index focuses on one of the three spheres, favors one over the others, and if so, which one and to what extent. As the simpler indices use few indicators (HDI, for example, three), others many (SDG, for example,

[3] Thus, in the logic of Figure 2, some of the indicators can be classified as cross-sections of several spheres, rather than being clearly linked to a single sphere (cf. https://www.e-education.psu.edu/eme807/node/575 as of February 6, 2020.). The weights of the indicators classified into two or three spheres at the same time were proportional: we took into account weights of 0.5 – 0.5 and 0.33 – 0.33 – 0.33 per sphere, respectively (Table 4. and 5.).

eighty-four), we did not focus on the absolute magnitude of the scores obtained for each sphere, but on their relative relationship to each other. To analyze this type of problem, the intensity map (Intenscope) introduced by Kocsis (2014) can be used. The individual axes correspond to the examined spheres: they display the economic, social and nature emphasis and the axes indicating these in a plane, in a map-like way. (See Appendix for details).

Since the whole system shows intensities (quotients, ratios), it is necessary to record the reference point against which the other points are interpreted. The reference point can be chosen arbitrarily; in our case we use the whole aggregate formed from all the indicators (n = 175) of the eight indices - without SFI - as a reference point. Based on this, we choose the three numbers (58.5):(89):(27.5) as a reference point (economy: society: nature; see Table 2.), since in the examined, eight-index system, based on expert scoring, 58.5 indicators directly measure economic phenomena, 89 social and 27.5 nature[4].

[4] As we place the SFI index on the map of the existing indices in this study, it is advisable to choose the reference point as described in the text. Depending on the purpose of the analysis, completely different reference points can of course be chosen. Thus, for example, we could choose SFI itself as a reference if the deviation of the orientation of all other indices from SFI were examined. Or we can choose an imaginary index in which the economy, society and nature would be represented in a fully balanced way by the indicators in the indicator. (See row 'X' in Table 2.) It is important that a good choice of reference point facilitates problem-dependent interpretation and communication, but does not modify the relative position of the objects analyzed and general conclusions that can be drawn.

4. RESULTS

The three quantities characterizing the eight indices (+ SFI) separately, and the economy/society and society/nature ratios formed from them are shown in Table 2[5].

index	keyword	ECONOMY	SOCIETY	NATURE		ECONOMY/SOCIETY	SOCIETY/NATURE
BLI	better life	6.5	15.5	2		0.42	7.75
CRI	change-ready	19	9	2		2.11	4.50
GRI	resilience	5	4	3		1.25	1.33
HDI	human dev.	1	2	0		0.50	
HPI	happy planet	0.5	2.5	1		0.20	2.50
IDI	inclusion	6	5.5	0.5		1.09	11.00
SDG	sustain. dev.	19	46	19		0.41	2.42
WHI	happiness	1.5	4.5	0		0.33	
CENTRE	reference (w/o SFI)	58.5	89	27.5	AVERAGE	0.66	3.24
SFI	social futuring	6	18.5	3.5		0.32	5.29
X	allequal	1	1	1		1.00	1.00

Table 2. Number triplets characteristic of indices and the main quotients that can be formed from them according to economic-social-nature orientation. (Note: The three quantities based on the totals without SFI is the reference point of the system (CENTER). Detailed data by indicators are provided in Tables 4. and 5. in the Appendix.)

When plotting the results (intenscoping), we take advantage of the special properties of the Descartes coordinate system described by Kocsis (2014) and construct an intensity map based on this (Figure 3). In the system, the relative values of the objects defined and represented as three quantities (in this case the ratios based on these indices) carry information, which is represented by the figure without loss of information.

[5] In the subsequent analysis, to avoid division by zero, we calculated a value of 0.1 for HDI and WHI instead of the natural indicator 0. (These two indices do not include a nature indicator.)

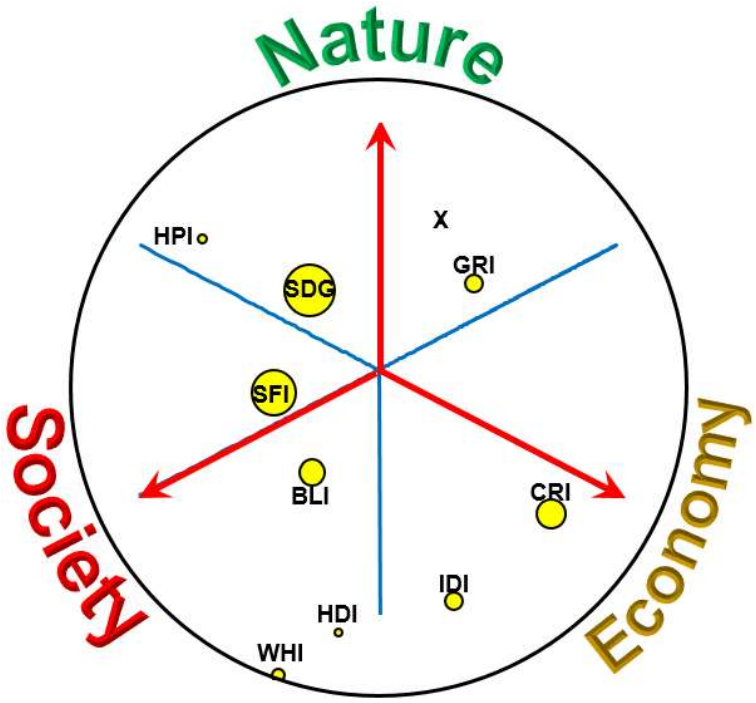

Figure 3: Intenscoping country ranking indices: SFI and eight other indices in the context of economy–society–nature *(Notes: size of objects is proportional to the number of its components, see Table 1.;* point 'X' indicates a theoretical composite in which economy, society and nature would be equally represented, eg. 1:1:1 or 18:18:18 etc.*)*

The center of Figure 3 is the previously mentioned reference point, which is obtained by aggregating all the indicators (n = 175) of the eight indices (not including the SFI) for expert classification (cf. Table 2.). Compared to this reference point, each index represents a subset, and the differences in the proportions of economic, social and nature indicators within the subset can be read from the figure. If all indices had the same composition, they would all be placed at the same point (in this case, the reference point) – regardless of the total number of indicators in the index. In the figure, a larger distance difference – on a logarithmic scale – is proportional to the magnitude of the composition difference.

In Figure 3, each sextile of the planes shows a sequence of preferences for the economy, society, and nature – relative to the reference point[6]. Thus, the order of preference of BLI, HDI, and WHI (in descending order) is society – economy – nature; for CRI and IDI,

[6] The red section of each axis indicates a positive deviation (preference, emphasis) in Figure 3, and the blue section indicates a negative deviation (disparity). Based on this, it is easy to read from the figure what order of preference each sextile can indicate.

economy – society –nature; while for GRI nature – economy – society. SDG and HPI are highly environmentally oriented (and indices of less economic interest), while the order of preference for SFI introduced in 2020 is society – nature – economy, which is unique among these indices. This corresponds to the concept of social futuring: the key to visibility lies in the various social entities, entire humanity, as it targets not only "sustainability", but also "a good life in a unity of an order".

Interpreting the indices compared to the SFI, it can be said that the Sustainable Development Goals Index (SDG) is more nature-oriented. Furthermore, although the composition of BLI, WHI and HDI appears have a more "social" focus compared to SFI (see the perpendicular projection of the index points on the SOCIETY axis in Figure 3), the nature aspect of HDI and WHI is completely omitted (which is also true with a smaller emphasis in the case of BLI). (This may otherwise be fully in line with the original purpose of the indices.) Table 3. in the Appendix helps to quantify the above statements and to carry out further analyses.

5. DISCUSSION

Based on the content of eight composite indices (BLI, CRI, GRI, HDI, HPI, IDI, SDG, WHI), the study identified a possible reference point in the economy-society-nature plane and placed the Social Futuring Index launched in 2020 on this "map" in relation to this reference point. The map produced in this way shows well the orientations of the individual indicators in relation to each other and also to the reference point of the whole system. It can also be seen that SFI offers a balanced but fundamentally social composite for decision makers and those interested in the concept of social futuring. The analysis can also help to understand why the analyzed indices ultimately lead to different country rankings: how it is possible that leading countries in one index, such as exemplary ones, perform less well in another index (Malay, 2019)[7]. Of course, this simple analysis can only partially explain the differences; it is also important how each indicator is integrated into the given index.

The fact that an indicator is built into an index and how it is weighted would be worth further examination because it could shed light on the value, or philosophy, one or the other index represents. Thus, for example, 'the size of government debt' is one (weight) point in the economic category in expert scoring. However, this analysis does not address whether an increase, decrease or deviation of this factor from a level considered ideal (e.g. 60%) is "good" for the index[8] – that is, how this aspect has been incorporated into the index. It is also a matter of commitment to values, perceptions of the "human good", economic philosophy and normative standards, which can be analyzed in further studies. In addition, the SFI takes into account unique indicators of a social nature, such as the importance of following traditions or religiosity (as part of the social dimension), which are not integrated into the composite indicator in the other indices analyzed here.

[7] The indicators of the World Happiness Index actually represent the Happiness Factors; the ranking of countries is not reported by the World Happiness Report series (Helliwell et al., 2020), only the "happiness rankings". Better Life Index (BLI) indicators can be weighted arbitrarily (subjectively) (http://www.oecdbetterlifeindex.org). In this study, for the sake of comparability, all indicators of each index were considered unweighted (with equal weights).

[8] The total fertility rate (TFR) or the size of military spending pose a similar problem.

Thus, both the Social Futuring Index (SFI) and the broader concept of social futuring fill the gaps in the economic-social-nature world as we have defined it. All this may be even more evident if we consider the Aristotelian-eudaimonic value commitment of the index (Csák, 2018) and the possible matrix-like, double grouping of its indicators (Szántó et al., 2019). Among the major composites known today, SFI stands out primarily for its social (human) emphasis – while also taking into account economic-nature aspects in a proportionate way. This reflects the philosophy behind the indicator: the primary focus is social, while balancing both the nature/economic and cultural factors of sustainable human life. Calculating and tracking it can enrich future-oriented decision-making with new perspectives.

ACKNOWLEDGEMENT

The author thanks Eszter Monda, Zoltán Szántó, János Csák and Eszter Deli for their comments on the study.

NOTES

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APPENDIX

The mathematical interpretation of the three axes of the intensity map (Intenscope) is as follows:

1. ECONOMY = (economy / society) * (economy / nature) = economy2/(society*nature)
2. SOCIETY = (society / economy) * (society / nature) = society2/(economy*nature)
3. NATURE = (nature / economy) * (nature / society) = nature2/(economy*society),

where each variable (economy, society, nature) represents the number of indicators occurring in a given dimension.

The representation of the axes (Figure 3) is logarithmic and visually shows the relative (percentage) differences of the represented objects compared to the above values formed from the three quantities chosen as the reference point. It can be seen from the formulas that the dominant quantity corresponding to a given axis is in the numerator (squared) and the subdominant quantities are in the denominator. The "negative range" of a given axis marked in blue (Figure 3) indicates the relative underrepresentation of a given quantity relative to the reference point (<100%). It is logically obvious that the relative overrepresentation (>100%) of one sphere is accompanied by the relative underrepresentation of the other and/or third sphere with respect to the given index. (It is not possible to emphasize everything at once.) The degree of freedom of a planar system is two: the value of any two axes determines the value of the third axis.

Table 3. shows the coordinates of the examined indices along the three axes, expressed as a percentage. It can be seen that the three quantities chosen as a reference (the center of the system according to Figure 3) takes on a value of 100% on all three axes, compared to

which the other percentages make sense[9]. For example, a line marked with an "X" refers to a theoretical composite with exactly the same number of economic, social, and nature indices. (In such an index, almost seven times more (677%) nature indicators should be included in exchange for one-fifth (20%) social, if we compare it with the reference interpreted on the basis of the eight indices.)

index	keyword		ECONOMY	SOCIETY	NATURE		AVERAGE
BLI	better life		98%	**378%**	27%		100%
CRI	change-ready		**1454%**	44%	16%		100%
GRI	resilience		150%	22%	**305%**		100%
HDI	human dev.		361%	**819%**	3%		100%
HPI	happy planet		7%	256%	**542%**		100%
IDI	inclusion		**944%**	206%	5%		100%
SDG	sustain. dev.		30%	120%	**280%**		100%
WHI	happiness		258%	**1974%**	2%		100%
CENTRE	reference (w/o SFI)		100%	100%	100%		100%
SFI	social futuring		40%	**334%**	75%		100%
X	allequal		72%	20%	**677%**		100%

Table 3. Percentage deviations of axis quotient values from the reference point (Notes: numerical data of the intensity map according to Figure 3; the most characteristic axis result of each index is highlighted in red; the reference point does not include the SFI index; and the "X" being a fictitious index with the appearence of economy, society and nature with equal weight.)

Table 4. shows the expert classifications of all indicators in the eight reference indices[10]. Scoring also reflects expert subjectivity. However, given the large number of indicators (n = 175), different scores of some indicators do not significantly alter the conclusions

[9] For example, the 378% value of BLI in the SOCIETY dimension (Table 3.) can be derived as follows. The SOCIETY axis quotient of the BLI index according to the formula in Appendix (2) (using the data in Table 2.): 15.52 / (6.5 * 2) = 18.48. Similarly, the CENTER value is 892 / (58.5 * 27.5) = 4.92. The quotient of the two, i.e. the SOCIETY axis quotient of the BLI index, relative to the CENTER point as a reference: 18.48 / 4.92 = 3.76, which is 376%. (Respectively calculated with consistently accurate, unrounded data: 3.78, or 378%.).

[10] In the first phase of research, the author of this study scored the indicators throughout. In a developed version, we can also use averages formed on the basis of the answers of several experts, thus reducing the possible distortion resulting from subjectivity.

that can be drawn. (The result is robust.) Table 5. shows the indicators of SFI (n = 28) and their expert classification.

Category	sub-category	indicator		1=YES	1=YES	1=YES
	Better Life Index (OECD)			Economy	Society	Nature
Housing	Percentage	Dwellings without basic facilities		0.5	0.5	0
	Percentage	Housing expenditure		0.5	0.5	0
	Ratio	Rooms per person		0	1	0
Income	US Dollar	Household net adjusted disposable income		0.5	0.5	0
	US Dollar	Household net wealth		0.5	0.5	0
Jobs	Percentage	Labor market insecurity		0.5	0.5	0
	Percentage	Employment rate		0.5	0.5	0
	Percentage	Long-term unemployment rate		0.5	0.5	0
	US Dollar	Personal earnings		1	0	0
Community	Percentage	Quality of support network		0	1	0
Education	Percentage	Educational attainment		0	1	0
	Average score	Student skills		0.5	0.5	0
	Years	Years in education		0	1	0
Environment	Micrograms per cubic meter	Air pollution		0	0	1
	Percentage	Water quality		0	0	1
Civic engagement	Average score	Stakeholder engagement for developing regulations		1	0	0
	Percentage	Voter turnout		0	1	0
Health	Years	Life expectancy		0	1	0
	Percentage	Self-reported health		0	1	0
Life Satisfaction	Average score	Life satisfaction		0	1	0
Safety	Percentage	Feeling safe walking alone at night		0	1	0
	Ratio	Homicide rate		0	1	0
Work-Life Balance	Percentage	Employees working very long hours		0.5	0.5	0
	Hours	Time devoted to leisure and personal care		0	1	0
		SUM		6.5	15.5	2
	Change Readiness Index (CRI)			Economy	Society	Nature
Pillar1 Enterprise capacity	1	Labor markets		0.5	0.5	0
	2	Economic diversification		1	0	0
	3	Economic openness		1	0	0
	4	Innovation, R&D		0.33	0.33	0.33

	5	Business environment		1	0	0
	6	Financial sector		1	0	0
	7	Transport and utilities infracture		1	0	0
	8	Enterprise sustainability		0.5	0	0.5
	9	Informal sector		0.5	0.5	0
	10	Technology infrastructure		1	0	0
Pillar2 Government capacity	1	Macroeconomic framework		1	0	0
	2	Public administration and state business relations		1	0	0
	3	Regulation		0.5	0.5	0
	4	Fiscal and budgeting		1	0	0
	5	Rule of law		0.5	0.5	0
	6	Government strategic planning		0.33	0.33	0.33
	7	Environment and sustainability		0.5	0	0.5
	8	Food and energy security		0.33	0.33	0.33
	9	Land rights		1	0	0
	10	Security		0.5	0.5	0
Pillar3 People and Civil Society Capacity	1	Human capital		0.5	0.5	0
	2	Entrepreneurship		1	0	0
	3	Civil society		0	1	0
	4	Safety nets		0.5	0.5	0
	5	Technology use		0.5	0.5	0
	6	Gender		0.5	0.5	0
	7	Inclusiveness of growth		0.5	0.5	0
	8	Demographics		0.5	0.5	0
	9	Access to information		0.5	0.5	0
	10	Health		0	1	0
	0	SUM		19	9	2
	FM Global Resilience Index (GRI)			Economy	Society	Nature
Economic	1	Productivity		1	0	0
	2	Political risk		0	1	0
	3	Oil intensity		0.5	0	0.5
	4	Urbanization rate		0	1	0
Risk quality	1	Exposure to natural hazards		0.5	0	0.5
	2	Natural hazard risk quality		0	0	1
	3	Fire risk quality		0	0	1
	4	Inherent cyber risk		0	1	0
Supply chain	1	Control of corruption		0.5	0.5	0
	2	Quality of infrastructure		0.5	0.5	0
	3	Corporate governance		1	0	0
	4	Supply chain visibility		1	0	0

		SUM		5	4	3
	Human Development Index (HDI)			Economy	Society	Nature
Long and healthy life		Life expectancy at birth		0	1	0
Knowledge		Expected and mean years of schooling		0	1	0
A decent standard of living		GNI per capita		1	0	0
		SUM		1	2	0.1
	Happy Planet Index (HPI)			Economy	Society	Nature
		wellbeing	Gallup	0	1	0
		life expectancy	UN	0	1	0
		Inequality of outcomes		0.5	0.5	0
		Ecological Footprint	GFN	0	0	1
		SUM		0.5	2.5	1
	Inclusive Development Index			Economy	Society	Nature
Growth and Development	1	GDP/capita		1	0	0
	2	Employment		0.5	0.5	0
	3	Labor productivity		0.5	0.5	0
	4	Healthy Life Expectancy		0	1	0
Inclusion	1	Median Household Income		0.5	0.5	0
	2	Poverty Rate		0.5	0.5	0
	3	Income Gini		0.5	0.5	0
	4	Wealth Gini		0.5	0.5	0
Intergenerational Equity and Sustainability	1	Adjusted Net Savings		1	0	0
	2	Public Debt (share of GDP)		0.5	0.5	0
	3	Dependency Ratio		0	1	0
	4	Carbon Intensity of GDP		0.5	0	0.5
		SUM		6	5.5	0.5
	Sustainable Development Goals Index (SDG)			Economy	Society	Nature
SDG1	1a	Poverty headcount ratio at $1.90/day (% population)		0.5	0.5	0
	1b	Poverty headcount ratio at $3.20/day (% population)		0.5	0.5	0
SDG2	2a	Prevalence of undernourishment (% population)		0	1	0
	2b	Prevalence of stunting (low height-for-age) in children under 5 years of age (%)		0	1	0
	2c	Prevalence of wasting in children under 5 years of age (%)		0	1	0
	2d	Prevalence of obesity, BMI ≥ 30 (% adult population)		0	1	0
	2e	Cereal yield (t/ha)		1	0	0
	2f	Sustainable Nitrogen Management Index		0	0	1
	2g	Human Tropic Level (best 2 - 3 worst)		0	1	0

SDG3	3a	Maternal mortality rate (per 100,000 live births)	0	1	0
	3b	Neonatal mortality rate (per 1,000 live births)	0	1	0
	3c	Mortality rate, under-5 (per 1,000 live births)	0	1	0
	3d	Incidence of tuberculosis (per 100,000 population)	0	1	0
	3e	New HIV infections (per 1,000)	0	1	0
	3f	Age-standardized death rate due to cardiovascular disease, cancer, diabetes, and chronic respiratory disease in populations age 30–70 years (per 100,000 population)	0	1	0
	3g	Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	0	0.5	0.5
	3h	Traffic deaths rate (per 100,000 population)	0	1	0
	3i	Life Expectancy at birth (years)	0	1	0
	3j	Adolescent fertility rate (births per 1,000 women ages 15-19)	0	1	0
	3k	Births attended by skilled health personnel (%)	0	1	0
	3l	Percentage of surviving infants who received 2 WHO-recommended vaccines (%)	0	1	0
	3m	Universal Health Coverage Tracer Index (0-100)	0	1	0
	3n	Subjective Wellbeing (average ladder score, 0-10)	0	1	0
SDG4	4a	Net primary enrolment rate (%)	0	1	0
	4b	Literacy rate of 15-24 year olds, both sexes (%)	0	1	0
	4c	Lower secondary completion rate (%)	0	1	0
SDG5	5a	Demand for family planning satisfied by modern methods (% women married or in unions, ages 15-49)	0	1	0
	5b	Ratio of female to male mean years of schooling of population age 25 and above	0	1	0
	5c	Ratio of female to male labor force participation rate	0.5	0.5	0
	5d	Seats held by women in national parliaments (%)	0	1	0
SDG6	6a	Population using at least basic drinking water services (%)	0	0.5	0.5
	6b	Population using at least basic sanitation services (%)	0	1	0
	6c	Freshwater withdrawal as % total renewable water resources	0	1	0
	6d	Imported groundwater depletion (m3/year/capita)	0	0	1

	6e	Percentage of anthropogenic wastewater that receives treatment (%)	0.33	0.33	0.33
SDG7	7a	Access to electricity (% population)	0.5	0.5	0
	7b	Access to clean fuels & technology for cooking (% population)	0	0.5	0.5
	7c	CO2 emissions from fuel combustion / electricity output (MtCO2/TWh)	0.5	0	0.5
SDG8	8a	Adjusted Growth (%)	1	0	0
	8b	Prevalence of Modern Slavery (victims per 1,000 pop)	0	1	0
	8c	Adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider (%)	1	0	0
	8d	Unemployment rate (% total labor force)	0.5	0.5	0
	8e	Fatal Accidents embodied in imports (fatal accidents per 100,000)	0	1	0
SDG9	9a	Population using the internet (%)	0	1	0
	9b	Mobile broadband subscriptions (per 100 inhabitants)	0	1	0
	9c	Logistics performance index: Quality of trade and transport-related infrastructure (1=low to 5=high)	1	0	0
	9d	The Times Higher Education Universities Ranking, Average score of top 3 universities (0-100)	0	1	0
	9e	Number of scientific and technical journal articles (per 1,000 population)	0	1	0
	9f	Research and development expenditure (% GDP)	0.33	0.33	0.33
SDG10	10a	Gini Coefficient adjusted for top income (1-100)	0.5	0.5	0
SDG11	11a	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM2.5) (µg/m3)	0	0	1
	11b	Improved water source, piped (% urban population with access)	0	0	1
	11c	Satisfaction with public transport (%)	0	1	0
SDG12	12a	Municipal Solid Waste (kg/year/capita)	0.5	0	0.5
	12b	E-waste generated (kg/capita)	0.5	0	0.5
	12c	Production-based SO2 emissions (kg/capita)	0.5	0	0.5
	12d	Imported SO2 emissions (kg/capita)	0.5	0	0.5
	12e	Nitrogen production footprint (kg/capita)	0.5	0	0.5
	12f	Net imported emissions of reactive nitrogen (kg/capita)	0.5	0	0.5

SDG13	13a	Energy-related CO2 emissions per capita (tCO2/capita)	0.33	0.33	0.33
	13b	Imported CO2 emissions, technology-adjusted (tCO2/capita)	0.5	0	0.5
	13c	People affected by climate-related disasters (per 100,000 population)	0	0.5	0.5
	13d	CO2 emissions embodied in fossil fuel exports (kg/capita)	0.5	0	0.5
SDG14	14a	Mean area that is protected in marine sites important to biodiversity (%)	0	0	1
	14b	Ocean Health Index Goal - Clean Waters (0-100)	0	0	1
	14c	Percentage of Fish Stocks overexploited or collapsed by EEZ (%)	0.5	0	0.5
	14d	Fish caught by trawling (%)	0.5	0	0.5
SDG15	15a	Mean area that is protected in terrestrial sites important to biodiversity (%)	0	0	1
	15b	Mean area that is protected in freshwater sites important to biodiversity (%)	0	0	1
	15c	Red List Index of species survival (0-1)	0	0	1
	15d	Permanent Deforestation, 5 year average annual %	0.5	0	0.5
	15e	Imported biodiversity threats (threats per million population)	0	0	1
SDG16	16a	Homicides (per 100,000 population)	0	1	0
	16b	Unsentenced detainees as a proportion of overall prison population	0	1	0
	16c	Proportion of the population who feel safe walking alone at night in the city or area where they live (%)	0	1	0
	16d	Property Rights (1-7)	1	0	0
	16e	Birth registrations with civil authority, children under 5 years of age (%)	0	1	0
	16f	Corruption Perception Index (0-100)	0.5	0.5	0
	16g	Children 5–14 years old involved in child labor (%)	0.5	0.5	0
	16h	Transfers of major conventional weapons (exports) (constant 1990 US$ million per 100,000 population)	1	0	0
	16i	Freedom of Press Index	0	1	0
SDG17	17a	Government Health and Education spending (% GDP)	0	1	0
	17b	For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% GNI) / Other	1	0	0

		countries : Government Revenue excl. Grants (% GDP)				
	17c	Tax Haven Score (best 0-5 worst)		1	0	0
		SUM		19	46	19
	World Happiness Index (UN)			Economy	Society	Nature
	levels of GDP			1	0	0
	life expectancy			0	1	0.1
	generosity			0	1	0
	social support			0	1	0
	freedom			0	1	0
	corruption			0.5	0.5	0
		SUM		1.5	4.5	0.1
			SUM of SUMs	58.5	89	27.5

Table 4. Expert classification of the eight reference indices included in the study by economic-social-nature spheres

	Social Futuring Index (SFI)			Economy	Society	Nature
1_A_1	Peace and Security	Defense and Safety		0	1	0
1_A_2	Peace and Security	Defense and Safety		0	1	0
1_A_3	Peace and Security	Defense and Safety		1	0	0
1_B_1	Peace and Security	Assets		0	0	1
1_B_2	Peace and Security	Assets		0	0	1
1_B_3	Peace and Security	Assets		0.5	0	0.5
1_B_4	Peace and Security	Assets		0	0	1
1_C_1	Peace and Security	Functionality		1	0	0
1_C_2	Peace and Security	Functionality		0.5	0.5	0
1_C_3	Peace and Security	Functionality		0	1	0
2_A_1	Attachment	Patriotism		0	1	0
2_A_2	Attachment	Patriotism		0	1	0
2_B_1	Attachment	Family		0	1	0
2_B_2	Attachment	Family		0	1	0
2_B_3	Attachment	Family		0	1	0
2_C_1	Attachment	Spirituality		0	1	0
2_C_2	Attachment	Spirituality		0	1	0
3_A_1	Care	Self-Reliance		0	1	0
3_A_2	Care	Self-Reliance		0.5	0.5	0
3_A_3	Care	Self-Reliance		0	1	0

3_B_1	Care	Material Advancement		0.5	0.5	0
3_B_2	Care	Material Advancement		0.5	0.5	0
3_B_3	Care	Material Advancement		1	0	0
4_A_1	Balance	Wellbeing and Generativity		0	1	0
4_A_2	Balance	Wellbeing and Generativity		0	1	0
4_A_3	Balance	Wellbeing and Generativity		0	1	0
4_A_4	Balance	Wellbeing and Generativity		0	1	0
4_A_5	Balance	Wellbeing and Generativity		0.5	0.5	0
		SUM		6	18.5	3.5

Table 5. Expert classification of the Social Futuring Index (SFI) by economic-social-nature spheres[11]

[11] The indicators of the SFI will be added after the launching of the index.


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Social Futuring Center (SFC) is an independent and multidisciplinarian research unit of the Corvinus University of Budapest (CUB). Our aims are to develop the conceptual and normative framework of social futuring, to construct the Social Futuring Index (SFI) and to manage the **ConNext2050** research project. The main scope of its research is the analysis and interpretation of social futuring of different social entities, focusing on short and long-term future changes (2017-2050).

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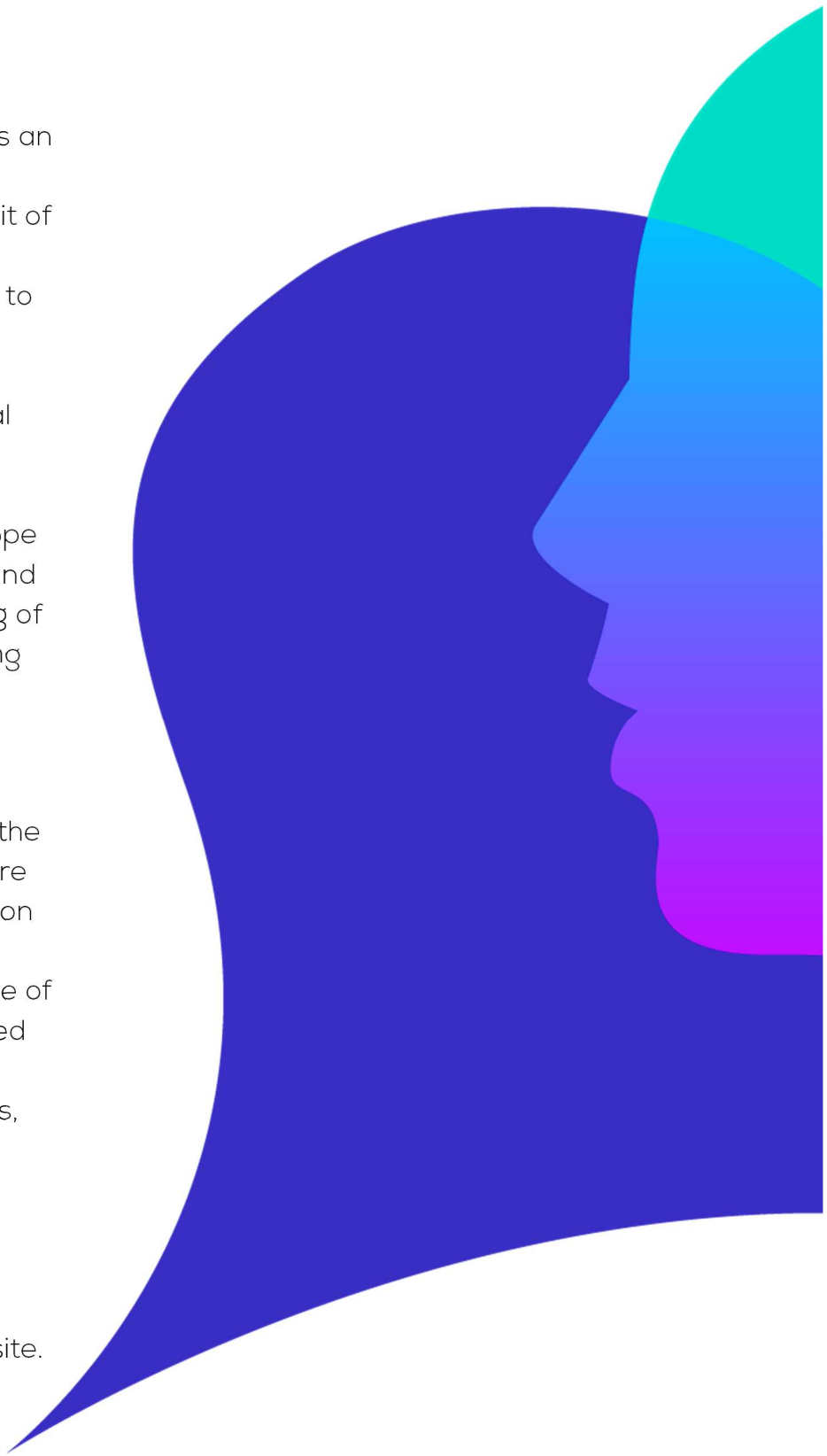

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