The SVARAD Scale for Rapid Dimensional Assessment: Development and Applications in Research

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The SVARAD (acronym for the Italian name "Scala per la VAlutazione RApida Dimensionale") is an instrument for rapid dimensional assessment that was developed in the 1990s, during a period of progressive recognition in the psychiatric field of the limitations inherent in the traditional classification systems for mental disorders and the categorical approach to diagnosis. Psychiatric diagnosis is a complex and difficult issue and has been the subject of considerable discussion and debate over the past several decades. While a comprehensive treatment of this topic is beyond the scope of this chapter, some introductory remarks are appropriate.

1.1 Ontological and Epistemological Issues in Psychiatric Diagnosis

Ontological and epistemological questions permeate the literature on psychiatric nosology [1–3]. Questions of ontology deal with whether mental disorders really exist as abstract entities. Indeed, as noted by Pouncey [4], mental disorders generate ontological scepticism on a number of levels. First, they are abstract entities that

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cannot be directly appreciated with the human senses, even indirectly, as with, for instance, a microscope. Also, it is unclear if they should be considered as abstractions that exist in the world aside from the individuals who experience them and thus instantiate them. Moreover, they are not clearly natural processes whose detection is unaffected by human interpretation or value judgments.

It should be recognised that psychiatry is not alone in dealing with these issues. While most contemporary working scientists and philosophers subscribe to the opinion that there is an objective external reality, it is commonly acknowledged that there is a limit to our access to absolute reality. Given that humans' epistemic access to reality is limited, Pouncey has observed that all scientific constructs (be they phyla, subatomic particles, or diseases) are abstract entities, which can nevertheless be legitimate objects of scientific investigation. In this perspective, mental disorders can be viewed in a similar way to other medical diseases, as "a heterogeneous class of abstract entities that have uncertain ontic status aside from the persons who instantiate them" [4].

On the one hand, mental disorders could be "natural kinds", such as chemical elements, which reflect a deep structure in the universe that exists independently of any human action or will. On the other hand, they could be "social constructs" that do not actually exist in nature but, rather, are concepts that are created by humans. There are no strong arguments to support the position that any disease, let alone any mental disorder, is a natural kind. For instance, as noted by Greenberg [4], there is no difference, from nature's point of view, between the breaking of a tree branch and the breaking of a femur, as nature is indifferent. As nature does not intend hips to break in certain ways, things such as intracapsular, trochanteric, or subtrochanteric fractures do not exist in nature, any more than nature gives a branch different ways to snap off a tree. As observed by Phillips, while a broken bone may be a natural kind, declaring it a disease involves a human value judgment that is not inherent in this altered state of the bone [5]. Outside of psychiatry, the difference between fracture as an artificial vs. a natural category is negligible, aside from a philosophical perspective. As noted by Greenberg, designating a broken femur as a disease requires only assuming that it is in our nature to walk and to be out of pain, which are very broad and relatively uncontroversial assumptions about human nature. However, in psychiatry the issue becomes thorny. Much narrower and more controversial assumptions are needed to designate a state of fear as "generalised anxiety disorder" or sadness accompanied by sleep difficulties, lack of appetite, indecisiveness, and fatigue as "depression" [4]. Indeed, it is not easy to differentiate between mental disorders and homeostatic reaction to negative life events [6]. How much anxiety are humans supposed to feel, aware as they are of their inevitable death? How sad should we be about the human condition? How can such questions be answered? [4] It is equally difficult to sustain the position that mental disorders are merely social constructs with no basis in reality, as this would question the assumption that suffering is a real experience worthy of mitigation, or the existence of a mind that gives us the experience of suffering, or the usefulness of classifying mental suffering into categories in order to work towards alleviating it [4].

While each of these extreme positions hardly seems tenable, a more realistic middle ground, suggested by Zachar, is to consider mental disorders as "practical kinds," and embrace a pragmatic approach to developing diagnoses that best

achieves the things psychiatrists need, both as scientists and clinical practitioners [7]. Such an approach may benefit from the adoption of a coherence theory of truth, by which disorders become more accepted as "true" when they grow increasingly valid over time, explain things about the world in a helpful way, and increasingly fit into our general knowledge about the world [3]. In this perspective, what might be considered the best classification would depend on the particular validator (e.g. genetic, outcome, treatment, neurobiology) that is emphasised. However, classification is more than a matter of preference or ideology; classifications can be invalid, and all classifications should be tested empirically [8]. Nevertheless, there is not a single right or wrong way to address the formidable problem of psychiatric classification. Different approaches have strengths and limitations.

Epistemological questions deal with how we can know anything about mental disorders and are particularly relevant in the field of psychiatric taxonomy. On the one hand, there are purely naturalistic definitions of mental disorders, which are exclusively based on objective, biological criteria, and do not refer to social or normative values. On the other hand, the normativist perspective emphasises the subjective and culturally driven nature of any definition of mental disorders. Indeed, definitions of disease often require value judgments, and even when the value judgment does have a physical explanation in terms of neurobiology, nothing physical can be the basis for deciding which judgment is correct. As noted by Cerullo, a look at areas of medicine outside psychiatry shows there is often a strong normativist element in how diseases are defined [4]. For instance, many diseases such as hypertension or hypercholesterolemia require making arbitrary decisions about cut-off points in laboratory values, based upon public health considerations and the risk/benefit ratio of any decision. In psychiatry, some conditions, such as mood or anxiety disorders, more easily lend themselves to a normativist definition, whereas others, like schizophrenia, seem to be better defined from the naturalist perspective, together with conditions such as Parkinson's disease [4].

Given that all definitions of disease have normativist and naturalist elements, hybrid approaches incorporating both a naturalist and a normative component have been advocated. The best-known of these is probably the "harmful dysfunction" approach proposed by Wakefield, which emphasises the disturbance of a healthy or satisfactory state of being as the basis of a disorder. This approach posits that the nature of the disturbance is simultaneously biological and social, and it situates disorders on the boundary between the given natural world and the constructed social world. A disorder is posited to exist when the failure of a person's internal mechanisms to perform their functions as optimised by nature has a harmful impact on the person's well-being as defined by social values and meanings [9].

While such hybrid approaches to the definition of mental disorder seem to identify a reasonable middle ground, they have also attracted criticism [10]. Indeed, any approach has counterexamples and can be alleged to define mental disorders either too broadly or too narrowly. As noted by Pierre [4], it should be acknowledged that developing an ironclad definition of mental disorder is an intimidating task. Inevitably, one has to face the subjective and relativistic nature of concepts such as "distress" and "suffering" and the value-ladenness of concepts such as "dysfunction".

All these considerations about the uncertain ontological status of psychiatric disorders and the difficulties inherent in coming up with an irreproachable definition of them should not be taken as philosophical evidence that mental disorders do not really exist or that any attempt at classifying them is flawed and unjustified. In fact, as observed by Frances [4], psychiatry is not alone in being "definitionally challenged", as there is really no indisputable operational definition in medicine for the concepts of "disease" or "illness" [4]. Rather, these considerations are useful to put the issue of psychiatric nosology into proper context in order to appreciate its subtleties and difficulties, as well as the fact that a nosological classification is necessary and can be useful despite being, by its very nature, flawed and limited in some ways.

1.2 The Traditional Categorical Approach to Psychiatric Classification

As noted by Berrios, modern psychiatric classification has a long history, stemming from the intense classificatory drive that appeared in the West during the seventeenth and eighteenth centuries. In the nineteenth century, developing a personal classification was part of professional growth and success for an alienist [11], and in subsequent times a myriad of classifications of mental disorders have been proposed, with varying degrees of acceptance and success.

In the last three decades, psychiatric nosology has undergone important developments. As observed by Jablensky, the introduction in the DSM and ICD systems of an internationally shared framework of concepts, a rule-based classification, and explicit diagnostic criteria has dramatically increased reliability and has played an essential role in linking psychiatry to science, keeping psychiatric diagnosis relevant, and furthering research. However imperfect they may be, these classification systems have provided clinicians with a common language for mental disorders, researchers with rigorous diagnostic standards, public health services and insurance companies with diagnostic codes, and judges and attorneys with reliable diagnoses of mental illness [12]. In both the DSM and the ICD systems, the diagnostic categories are defined in terms of syndromes, i.e. symptoms that cluster together and covary over time. Essentially, these systems build on Kraepelin's method of diagnosis, based on the careful examination of longitudinal history and current symptoms, which in turn was built on Kahlbaum's principles of classification of psychiatric disorders on the basis of symptoms, course, and outcome.

Although the introduction of internationally accepted operational diagnostic criteria has had many benefits for psychiatric practice and research, the current classification systems are the subject of much criticism and debate. Kendler and Zachar have noted that the use of the criteria has grown to the extent that they often tend to be reified, as if they represented all anyone would want to know about a given disorder, whereas the current diagnostic classifications are actually remarkably thin, descriptively. They have emphasised that the diagnostic criteria selected to detect a disorder with good reliability, sensitivity, and specificity

should not be confused with the disorder itself [13]. Focusing exclusively on the symptoms and signs listed in the classification systems reflects the conceptual error of mistaking an index of something for the thing itself and may stifle conceptual innovation and thereby lead to a general impoverishment of psychopathology and the psychiatric culture [12, 14].

Criticism of the categorical approach includes claiming that the diagnostic categories often do not adequately reflect the heterogeneity of presentation in patients grouped under a particular category, that they are relatively unhelpful in distinguishing severity, that they do not accommodate subclinical cases usefully, and that they include highly heterogeneous "not otherwise specified" categories. Also, most diagnoses do not meet the validity standards set by Robins and Guze, who expected that each diagnostic category would ultimately be validated by its separation from other disorders, common clinical course, genetic aggregation in families, and differentiation by laboratory tests [15]. To these influential criteria for validating psychiatric diagnostic constructs, Kendler added differential response to treatment [16], which is also an unmet criterion as most pharmacological agents have been found to be effective for a variety of disorders, rather than matching up with specific diagnoses. Moreover, the current work in neuroscience, structural and functional neuroimaging, and genetics has not led to clear patterns that match up with the diagnostic categories [5, 17, 18]. Thus, as noted by Waterman, the assumption that psychopathology can be divided into discrete entities as defined in the classification systems, which is the basic assumption of the categorical approach to diagnosis, "is turning out to be inconsistent with the way genes and environments act and interact to produce brain function and dysfunction" [4].

Despite persistent doubts about the scientific legitimacy of psychiatric nosology [13], it should be recognised that psychiatry is not the only discipline that has worries about how to classify. In all scientific fields that rely on a taxonomy, no classificatory effort ever seems to do a perfect job of "carving nature at its joints". For instance, astronomers held a vote in 2006 to decide whether Pluto is really a planet, and they rewrote the definition of a planet [19]. Biology itself has been struggling with this problem since long before psychiatry came to be defined as a medical specialty. As observed by Zachar, we should not expect more clarity in a psychiatric nosology than we can achieve in a biological taxonomy. Failure to appreciate the complexity of biological taxonomies may lead to unrealistic standards for what counts as an adequate psychiatric nosology [8]. Even if there are important conceptual reasons why psychiatric classifications are not working well, it should not be inferred from this fact that classifying in psychiatry is a useless exercise. Instead, as noted by Berrios, when psychiatric classifications are not working optimally, this indicates that much more conceptual work is necessary to identify stable elements that anchor classifications to "nature" in order to develop classifications which do not only behave as "actuarial devices" [11].

Also, although most mental disorders cannot yet be described as valid disease categories, this does not mean that they are not valuable concepts. Kendell and Jablensky have suggested that a diagnostic rubric may be said to possess utility if it provides non-negligible information about prognosis and likely treatment outcome

or testable propositions about biological and social correlates [18]. Many of the diagnostic concepts represented by the categories of disorder listed in the DSM and ICD nomenclatures are extremely useful to practicing clinicians [18] and may be viewed as possessing predictive validity [20]. However, given that utility may vary with the context in which these concepts are used, statements about utility must always be related to context, including who is using the diagnosis, in what circumstances, and for what purposes.

1.3 The Prototype-Matching Approach

An alternative approach to psychiatric diagnosis that does not rely on strict operational criteria is the prototype-matching approach or "prototype diagnosis", which has attracted considerable interest in recent years. In this context, the term "prototype" refers to the use of idealised models or archetypes of disease, and placement into a diagnostic category is determined by how much a given patient resembles the typical exemplars of the category in question. From a phenomenological perspective, Schwartz and Wiggins suggested that the clinician's experience is pervaded by "typifications" which help to structure the clinician's diagnosis meaningfully [21]. Husserl himself had indicated that perceptual meaning is itself based on such a typification process, as humans never perceive individual things or persons in isolation but instead perceive them in terms of the type that epitomises that individual entity [22]. Also, Westen has argued that research in cognitive science suggests that the prototype-matching approach is more congruent with the ways humans think and classify in general [23]. Indeed, it has been reported that clinicians tend to diagnose in their daily practice by pattern matching, rather than counting criteria for categorical diagnosis and applying cut-offs [24]. Schaffner has also noted that an approach that identifies the most robust categories as prototypes, related to other prototypes by similarity, is supported by the deep structure of biology [25].

In its operationalised form, prototype diagnosis involves assessing the extent to which the patient's clinical presentation matches paragraph-length descriptions of disorders "that weave together diagnostic criteria into a memorable *gestalt* designed to facilitate pattern recognition" [23]. The resemblance to the prototype is rated on a numerical scale, where the lowest score indicates no resemblance and the highest score indicates a resemblance so high that the patient exemplifies the disorder. High ratings (e.g. 4 or 5 on a 5-point scale) imply that the patient resembles the diagnosis enough to be described as having the disorder; middle ratings (e.g. 2 or 3 on a 5-point scale) mean that the patient has some or subthreshold features of the disorder; and low ratings (e.g. 1 on a 5-point scale) indicate that there is little or no match between the patient's clinical presentation and the prototype.

This approach has been the object of intense study in the field of personality disorders, where it was found to outperform diagnosis based on operational criteria in inter-rater reliability, validity, and ratings of clinical utility [26]. Studies on other classes of mental disorders, such as eating disorders or mood and anxiety disorders [27], corroborated the view that a diagnostic system based on refined prototypes

may be as reliable as one based on operational criteria while being more user-friendly and having greater clinical utility. It may also reduce the portion of comorbidity that is an artifact of current diagnostic methods, as clinicians are required to make configural judgments, rather than judgments about isolated symptoms. In a sense, this system incorporates the advantages of both categorical and dimensional diagnosis, as patients can be described as having a given disorder and can also be rated for the extent to which they have the disorder in question.

However, there are also some potential disadvantages in the prototype-matching approach. As noted by Maj, some clinicians may be reluctant to change the templates of mental disorders they have built up in their mind over years of practice, and it cannot be taken for granted that they will not have difficulties memorising, recalling, and correctly applying the standardised prototypes proposed by a diagnostic system [28]. Also, prototype diagnosis may promote confirmatory biases and other heuristics that can lead clinicians to see what they expect to see, or to cling to hypotheses about a patient, despite disconfirming information. For instance, the expectation that a given patient will present the various features of a prototype may lead the clinician to form the erroneous opinion that certain clinical aspects are present in this patient, when they are actually absent. Finally, different clinicians may disagree in their conclusions; while a clinician may reason that a patient matches a given prototype because a number of components are present, another clinician may conclude that the same patient does not match that prototype because some other aspects are absent [28].

Although prototype diagnosis includes a dimensional element, it should be recognised that it is mostly a categorical approach to diagnosis. In fact, both the polythetic diagnostic criteria built into the DSM and, to an even greater extent, the clinical manual of the ICD-10 can be viewed as efforts to operationalise prototype matching. Indeed, although it lacks a way of operationalising clinical judgment to maximise reliability, the clinician version of the ICD-10 is close to a prototype-matching procedure, as clinicians are presented with what are usually paragraph-length descriptions of a disorder, frequently with an additional set of considerations, and they are instructed to diagnose the patient with whatever degree of certainty they feel comfortable [23]. Therefore, on the one hand, prototype diagnosis holds the promise of being clinically helpful and reliable and of allowing for clinically rich, empirically derived, and culturally relevant psychiatric classification. On the other hand, it mainly resides within the realm of the categorical approach to psychiatric diagnosis, the validity of which is itself under debate.

1.4 The Dimensional Approach

Although many of the diagnostic categories of psychiatric classificatory systems are quite useful for clinicians, it is a matter of fact that no ideal way of classifying even the common disorders has emerged. Further, some of the limitations of psychiatric classificatory systems are inherent in any taxonomy. As observed by Jablensky, the problem of drawing boundaries between psychiatric diagnostic entities has so far

defeated all attempts at finding an optimal solution by various rearrangements of symptoms and signs [12]. Goldberg has stated that we appear to be drawing lines in the fog, rather than "carving nature at its joints" [29].

However, it is unclear if there are real "joints" between mental disorders, and dimensional approaches have been proposed in opposition to the categorical approach. The first way of using the concept of "dimension" in the context of psychiatric taxonomy is to contrast dimensions vs. categories in terms of which is the best way to conceptualise mental disorders. Categorical diagnostic systems, indeed, draw a sharp line between individuals meeting criteria for a disorder and those not meeting criteria, who may nonetheless have a form of illness. The question here is not whether psychiatric disorders are categorical or dimensional in nature, because, as noted by Kraemer and colleagues, every disorder is both [30]; each disorder is either present or not (categorical), but when it is present, patients may vary with respect to a variety of features of the disorder (dimensional). Indeed, every dimensional diagnosis can be transformed into a corresponding categorical one by judiciously applying a dichotomisation rule, while every categorical diagnosis can be transformed into a corresponding dimensional one by, for instance, requiring multiple assessments and using the percentage positive [30]. As observed by Zachar and Kendler, the really relevant question from a clinical and research perspective is whether psychiatric disorders are best understood as diseases with discrete boundaries or as the pathological ends of functional dimensions [31]. In considering this issue, it should be recognised that discrete disease entities and dimensions of continuous variation are not mutually exclusive ways of conceptualising mental disorders; both ways are consistent with a threshold model of disease and may account for different or even overlapping portions of psychiatric morbidity [18].

Dimensions can be used one at a time, for example, when the diagnosis of major depressive disorder is based on exceeding the cut-off score on a numerical scale of depression severity, rather than using rule-based diagnostic criteria. However, another way of making use of dimensions is to use many of them in order to construct a diagnostic system based on a numerically derived phenotypic classification. In psychiatry, systems of this kind are based on factorially derived structural models for representing the phenotypic variation found in the domain of mental disorders. Such systems work best in describing phenomena that are distributed continuously and that do not have clear boundaries, as is often the case with mental disorders. In fact, from a categorical perspective, various classes of disorders show relations of continuity rather than discontinuity. Kendell and Jablensky have noted that several attempts have been made to demonstrate natural boundaries between related syndromes, or between a common syndrome such as major depressive disorder and normality, either by identifying a zone of rarity between them or by demonstrating a nonlinear relationship between the symptom profiles and a validating variable such as outcome or heritability. Most such attempts have been unsuccessful [18]. As observed by Zachar, compared with the common classification systems, dimensional models offer a better solution to the problem of understanding the overlap that occurs between different groups of cases (i.e. diagnostic categories), although they cannot account for all the patterns that exist in any domain, and they do not eliminate classificatory conundrums [8].

Also, keeping in mind that categorical and dimensional models are not incompatible but complementary, the dimensions can be used not to construct an alternative taxonomy but rather to supplement the traditional categorical taxonomy in order to provide an enhanced characterisation of patients based on their most prominent symptom clusters. This approach aims at optimising decisions about treatment and providing opportunities for research activities that are not constrained by exclusive reliance on categorical diagnosis and the ensuing obligation to work within criterial boundaries.

Papers suggesting the use of a dimensional approach to psychiatric diagnosis began to appear with some frequency in the literature during the last decades of the twentieth century, following early seminal work in this direction [32]. For instance, Mundt suggested a transnosological psychopathology implying both biological functional entities and trans-symptomatological functional psychological entities [32], while van Praag and his colleagues proposed a functional psychopathology based on biological mechanisms [33, 34]. In the latter approach, psychiatric symptoms are viewed as the behavioural expression of a psychological dysfunction, putatively correlated with alterations in specific functional systems in the brain. The basic units of classification are these psychological dysfunctions, rather than syndromes or diagnostic categories. This approach is clearly dimensional in orientation, as it views each psychiatric disorder as a conglomerate of psychological dysfunctions, most of them nosologically non-specific and occurring in different severities and in different combinations in the various psychiatric syndromes. Conceptualised as complementary, rather than as an alternative to the categorical approach, this approach would allow for more refined treatment, from both a pharmacological and a psychotherapeutic perspective [35].

In recent years, the concepts of psychopathological dimensions and dimensional diagnosis have gained further interest. They are based on the observation that psychiatric disorders appear to occur along a range of dimensions, which cut across diagnostic boundaries [29]. It is the diverse combination of a number of symptom clusters, called psychopathological dimensions, that gives rise to the wide variety of clinical pictures that can be observed in patients receiving the same categorical diagnosis. A fertile ground for dimensional conceptualisations has been the field of personality disorders, where proposals have been made to provide dimensional profiles of the existing diagnostic categories, or to reorganise the existing sets of diagnostic criteria into more clinically useful and empirically valid dimensions of maladaptive personality functioning, or to integrate the classification of personality disorders with dimensional models of general personality structure [36].

Focusing our attention back on Axis I, the dimensional approach to diagnosis has received empirical support, which further stimulated interest in this approach. For instance, a large number of studies have investigated the symptom structure of psychotic disorders. Already decades ago, studies began to suggest that dimensional representations of psychopathological features were more useful than categorical representations as predictors of illness course and treatment decisions [37]. More recent studies came to similar conclusions in showing that symptom dimensions are superior to diagnostic categories in explaining illness-related characteristics,

including risk factors, premorbid, clinical, and outcome variables [38]. Most of this literature agrees that either four or five dimensions can adequately describe the psychosis construct, with positive, negative, disorganisation, and affective symptom dimensions most frequently reported. Studies comparing the fit of dimensional and categorical models within the same data set have supported the value of dimensions. Also, studies comparing the predictive ability of empirically derived dimensions with existing diagnostic categories of psychotic disorders, using clinical or outcome measures as external validators, agreed that a complementary approach incorporating both dimensions and categories may provide the best system of classification, thus providing strong support for the utility of dimensions [39].

Further support for the dimensional approach comes from a recent study of 239 patients with schizophrenia. The patients had been admitted to a random sample of all Italian public and private acute inpatient units during an index period. Factor mixture analysis (FMA) with heteroscedastic components was used to explore unobserved population heterogeneity in this group of patients. The analysis indicated the presence of three heterogeneous groups and yielded a five-factor solution with Depression, Positive Symptoms, Disorganisation, Negative Symptoms, and Activation identified as the factors. As compared with traditional clinical subtypes, psychopathological dimensions displayed much greater discriminatory power between groups identified by FMA [40]. These findings are consistent with those of other studies using cluster analytic approaches that failed to identify the DSM-IV schizophrenia subtypes [41, 42] and form one of the pieces of evidence that led to the elimination of the subtypes from the DSM and the recommendation to use psychopathological dimensions in order to describe the heterogeneity of schizophrenia in a manner that is more valid and clinically useful [43].

It should be clear from the discussion above that there are many ways of conceptualising dimensions and using them in the context of psychiatric diagnosis. Apart from psychopathological dimensions, the term “dimension” is also used in the psychiatric literature to refer to basic dimensions of psychological functioning that have been the focus of neuroscience research over the past several decades. In this regard, it is worth mentioning the recent NIMH-sponsored Research Domain Criteria (RDoC) project, which focuses its pathophysiologic spotlight not so much on categorically defined disorders, but on endophenotypes and dimensions of symptoms, both within and across disorders. This project aims at shifting researchers towards a focus on dysregulated neurobiological systems, rather than categorical diagnoses, as the organising principle for selecting study populations. Therefore, the RDoC project is not intended to function as a diagnostic classification system, but rather as a research framework to assist researchers in relating the fundamental domains of behavioural functioning to their underlying neurobiological components, with the ultimate aim of linking dysfunctions in neurocircuitry with clinically relevant psychiatric conditions [44]. While this project traces new directions in aetiological research and holds hope for important advances in psychiatric diagnosis and in the understanding of psychopathology, at its current stage, it is still a long way from becoming or generating an alternative diagnostic system that may inform treatment decisions. Indeed, its distance from several issues relevant to clinical

practice [45] is at the heart of the criticisms levelled against the RDoC approach, for example, the absence of consideration of environmental influences [46], and the lack of appreciation of clinically important concepts such as the difference between well and sick, and the importance of time in defining course or prognosis [47]. Possibly, as suggested by Jablensky, rather than clinical neuroscience replacing psychopathology in the diagnosis of mental disorders, clinical psychiatry will retain psychopathology as its core, and classification will evolve towards a dual system with an aetiological axis, using neurobiological and genetic organising concepts, and a behavioural-dimensional or syndromal axis, which would be isomorphic to clinical reality [12].

1.5 Development, Validation, and Use of the SVARAD

When, more than 20 years ago, we started to conceive the idea of developing a dimensional assessment system, the literature on the dimensional approach to psychiatric diagnosis was relatively scarce. Proceeding from the common-knowledge notion that clever clinicians commonly use symptomatic and severity dimensions to personalise treatment independent of diagnosis, we selected a limited number of symptom clusters, or "psychopathological dimensions", based on their clinical relevance and consistent identification in factor analytic studies of psychiatric symptoms, with the aim of developing a standardised assessment system that would enable clinicians to accurately characterise each patient for treatment purposes by the relative prominence of one or more psychopathological dimensions. For many of these dimensions, a putative underlying biological dysfunction had been hypothesised. However, we reasoned that a standardised dimensional assessment may be useful for individualised planning, not only of pharmacological treatment but also of psychotherapeutic treatment. It should be emphasised that our intention was not, and never has been, to replace categorical diagnosis with the dimensional assessment. Rather, we always viewed dimensional and categorical diagnoses as complementary, not antagonistic, in the firm belief that an optimal diagnostic process should make use of all available resources, be it dimensional or categorical.

We felt encouraged to undertake this work by the consideration that, in principle, clinicians view the dimensional approach to diagnosis favourably. Indeed, in the recent WPA-WHO global survey of attitudes towards mental disorders classification, involving nearly 5000 psychiatrists from over 40 countries, the majority of participants were favourable to the inclusion of a dimensional component in a diagnostic system, either because it would make the system more detailed and personalised or because it would be a more accurate reflection of the underlying psychopathology [48]. However, we were aware that a crucial issue in every proposal to incorporate dimensional measurements into a diagnostic process performed by a clinician is practicality. As noted by Whooley, between researchers and clinicians, there is, in fact, an epistemological tension that reflects the classic Aristotelian distinction between *episteme* and *phronesis*. While researchers understand psychiatric knowledge as aimed towards illuminating universal and general rules,

clinicians understand it differently, adopting a more practical posture that aims not towards identifying a universal truth, but instead towards a particular one, namely, what will be the most effective intervention for a specific patient [49]. Therefore, adding a complex dimensional evaluation based on multiple scales would have likely been seen merely as a bureaucratic burden by clinicians, and would only have served to widen the divide between the *episteme* of researchers and the *phronesis* of clinicians, without any benefit to the patients. For clinicians to be interested in dimensions, they need to be measured in a practical way, and this is a key principle that has guided our work in developing the SVARAD.

The SVARAD is an observer-rated scale that consists of ten items, each scored on a 5-point scale, ranging from 0 ("not present") to 4 ("extremely severe"). For each item, a detailed description of the dimension being rated is included, along with defined anchor points for severity. To facilitate its use in clinical practice, scoring instructions were included directly into the scale, rather than being provided separately in a scoring manual [50]. The SVARAD, the English version of which (known by the acronym RADAS) is illustrated in Fig. 1.1, comprises the following items:

1. Apprehension/Fear: state of anxiety and worry; sense of constriction; perception of imminent threat; feelings of worry, fear, and anguish.
2. Sadness/Demoralisation: distrust in oneself and one's own abilities; decreased creativity and energy; pessimism; decreased interests and pleasure.
3. Anger/Aggressiveness: feelings of irritation, resentment, and anger; display of irritability, litigiousness, and hostility; verbal or physical violence.
4. Obsessiveness: doubtfulness, rigidity, meticulousness, and perfectionism; repetitive behaviours aimed at preventing, checking, and controlling; presence of obsessions and/or compulsions.
5. Apathy: indifference, detachment, affective flattening and blunting; decreased planning and initiative.
6. Impulsivity: tendency to suddenly act in ways that are improper or potentially harmful to oneself or others, without adequate reflection on the causes or the consequences of one's own actions.
7. Reality Distortion: difficulty distinguishing between reality and fantasy; tendency to attribute unusual and unshared meanings to events or experiences; presence of delusions or hallucinations.
8. Thought Disorganisation: disruption of connection between ideas and of principles governing the organisation of thought, which thereby becomes altered in its logical organisation and impaired in its communicative functions.
9. Somatic Preoccupation/Somatisation: preoccupation with one's own body; physical symptoms with no organic basis; excessive concern about one's own health; exaggerated and unjustified fear of being ill.
10. Activation: increased motor activity; racing thoughts; disinhibition; feelings of excessive energy and self-confidence; euphoria or irritability.

The validation study provided evidence of inter-rater reliability, content validity, and criterion validity for the SVARAD [51]. Content validity was formally

RA.D.A.S.
RAPID DIMENSIONAL ASSESSMENT SCALE
by Paolo Pancheri, Massimo Biondi, Paola Gaetano, Angelo Picardi

The **AIM** of this instrument is to quickly assess the degree of impairment of some basic psychological and behavioural functions ranging seamlessly from normalcy to pathology. It measures traits, signs and symptoms that describe psychopathological "trans-nosographic" dimensions. Each of these can have a different "relative weight" in the individual clinical presentation.
INSTRUCTIONS on how to carryout the assessment:

- The assessment must be based on what is reported by the patient and on the clinician's observation of the patient's behaviour;
- Completion of the instrument must not be influenced by the categorical diagnosis, as it measures the impairment of functions that are present in a variety of disorders or within specific stages of the same disorder.

Name..... Surname..... Age..... Date of completion.....

APPREHENSION/FEAR

State of anxiety and worry; sense of constriction; perception of imminent threat; feelings of worry, fear and anguish.

0 **Absent**

1 **Mild**: present only occasionally or in response to specific stimuli, non-pervasive, with no impairment of the patient's social or occupational functioning.

2 **Moderate**:frequent, non-pervasive, appearing spontaneously or in response to unimportant stimuli, with no impairment of the patient's social or occupational functioning.

3 **Severe**: sub-continuous, pervasive, with a mild reduction of the social or occupational functioning.

4 **Profound**: continuous, pervasive, with a severe reduction of the social or occupational functioning.

SADNESS/DEMORALIZATION

Distrust in oneself and one's own abilities; decreased creativity and energy; pessimism; decreased interests and pleasure.

0 **Absent**

1 **Mild**: modifiable following pleasant stimuli, limited to some areas of experience, with no impairment of the patient's social or occupational functioning.

2 **Moderate**: poorly modifiable, extended to almost all areas of experience, mild reduction of the patient's social or occupational functioning.

3 **Severe**: non-modifiable, pervasive, with moderate reduction of the patient's social or occupational functioning.

4 **Profound**: non-modifiable, pervasive, with severe reduction of the patient's social or occupational functioning.

ANGER/AGGRESSIVENESS

Feelings of irritation, resentment and anger; display of irritability, litigiousness, hostility; verbal or physical violence.

0 **Absent**

1 **Mild**: only occasionally present, the patient can control his/her impulses.

2 **Moderate**: frequent, generally controlled.

3 **Severe**: pervasive, very frequent, little controlled, with problems in social relationships.

4 **Profound**: pervasive, continuous, poorly controlled, severe social consequences.

Fig. 1.1 The English version of the SVARAD

OBSESSIVENESS

Doubtfulness, rigidity, meticulousness, perfectionism; repetitive behaviors aimed at preventing, checking, controlling; presence of obsessionsand/orcompulsions.

0 **Absent**

1 **Mild**: present, with no clear structured obsessions or compulsions.

2 **Moderate**: obsessions or compulsions only occasionally present, non-invasive, partially controllable, and non-interfering with everyday activities.

3 **Severe**: frequent obsessions or compulsions, invasive, poorly controllable, interfering with the patient's everyday social and occupational activities without, however, compromising them.

4 **Profound**: invasive obsessions and compulsions, present for the vast majority of the day, non-controllable, with impairment of the social and occupational activities.

APATHY

Indifference, detachment, affective flattening and blunting; decreased planning and initiative.

0 **Absent**

1 **Mild**: slightly present, variable or modifiable, with a fair level of planning; social functioning is mildly altered.

2 **Moderate**: obvious, modifiable by specific stimuli, with reduced planning; reasonable social functioning.

3 **Severe**: dominant, hardly modified by even intense stimuli, with highly reduced planning; poor social functioning.

4 **Profound**: constant, non-modifiable, planning almost absent; severely impaired social functioning.

IMPULSIVITY

Tendency to suddenly act in ways that are improper or potentially harmful to oneself or others, without adequate reflection on the causes or the consequences of one's own actions.

0 **Absent**

1 **Mild**: generally controllable or changeable impulsive acts, they are rare, in response to significant stimuli.

2 **Moderate**: partially controllable or changeable impulsive acts, infrequent, in response even to mild stimuli, with moderate social interference.

3 **Severe**: poorly controllable or changeable impulsive acts, frequent, with serious social consequences.

4 **Profound**: lack of any impulse control, highly frequent impulsive acts, with severe social and legal consequences.

REALITY DISTORTION

Difficulty distinguishing between reality and fantasy; tendency to attribute unusual and unshared meanings to events or experiences; presence of delusions or hallucinations.

0 **Absent**

1 **Mild**: tendency to attribute out of the ordinary or uncommonly shared meaning to events, unusual perceptive experiences.

2 **Moderate**: delusions with partial criticism, fluctuating or not very congruous; or hallucinations experienced occasionally or in special conditions, with partial or fluctuating criticism.

3 **Severe**: clear but not pervasive delusions, with poor or no criticism; or hallucinations, frequent but not continuous, with poor or no criticism.

4 **Profound**: clear, continuous, pervasive delusions with no hint of criticism; or continuous and nagging or pervasive hallucinations that are not criticised.

Fig. 1.1 (continued)

THOUGHT DISORGANIZATION

Disruption of connection between ideas and of principles governing the organization of thought, which there by becomes altered in its logical organization and impaired in its communicative functions.

0	**Absent**
1	**Mild**: only occasionally present in spontaneous speech, or in response to specific stimuli.
2	**Moderate:** frequent in spontaneous speech, tends to diminish in a led conversation, a fairly effective communication is however possible.
3	**Severe**: constant in spontaneous speech, clear in the led discourse, communication is difficult.
4	**Profound**: continuous, pervasive, communication is impossible.

SOMATIC PREOCCUPATION/SOMATIZATION

Preoccupation with one's own body; physical symptoms with no organic basis; excessive concern about one's own health; exaggerated and unjustified fear of being ill.

0	**Absent**
1	**Mild**: rare, of mild intensity, sensitive to reassurances.
2	**Moderate**: frequent, clear, hardly sensitive to reassurances; little interference with the patient's social and occupational functioning.
3	**Severe**: sub-continuous, dominant, only temporarily sensitive to reassurances, significant interference with the patient's social and occupational functioning.
4	**Profound**: constant, pervasive, non-sensitive to any reassurance, disabling.

ACTIVATION

Increased motor activity; racing thoughts; disinhibition; feelings of excessive energy and self-confidence; euphoria or irritability.

0	**Absent**
1	**Mild**: mildly elated mood, irritability, disinhibition; psychomotor restlessness; judgement and critical thinking abilities are preserved.
2	**Moderate**: elated and irritable mood, obvious disinhibition, tendency toward a potentially risky or damaging hyperactivity; judgement and critical thinking abilities are fluctuating.
3	**Severe**: euphoric or highly irritable mood, marked disinhibition, hyperactivity that is poorly directed to any specific goal, exaggerated and potentially harmful; judgement and critical thinking abilities are reduced.
4	**Profound**: overexcited or severely irascible mood; activities clearly exaggerated, not directed to any specific goal, and severely interfering with social activities; judgement and critical thinking abilities severely impaired.

Name of the assessor .....

Fig. 1.1 (continued)

measured by asking 12 psychiatrists who had not been involved in the construction of the instrument to rate on a 5-point scale the adequacy of each item to measure the related construct and then by computing Aiken's V index [52]. Aiken's V index was statistically significant for all items, which supports content validity.

Inter-rater reliability was assessed in 68 psychiatric outpatients who were each independently rated by two psychiatrists. Criterion validity against selected items of the Positive and Negative Syndrome Scale (PANSS), the 21-item version of the Hamilton Depression Rating Scale (HDRS), and the Hamilton Anxiety Rating Scale was assessed in 70 psychiatric outpatients. Inter-rater reliability was found to be satisfactory, with values of the Cohen's kappa coefficient (measuring agreement after adjusting for chance) ranging from 0.48 to 0.68 and values of Spearman's rho coefficient (measuring correlation between assessments) ranging from 0.66 to 0.82 for the various items. Recent data collected on 22 psychiatrists, senior psychiatry residents, and clinical psychologists who independently rated videotaped clinical interviews of five patients as part of an ongoing study provided further support for the reliability of the SVARAD. For all items, the kappa coefficient was above 0.50, with very high values for Sadness/Demoralisation (0.94), Obsessiveness (0.93), Apathy (0.84), Reality Distortion (0.94), Somatic Preoccupation/Somatisation (0.73), and Activation (0.92).

In the validation study, the pattern of correlations between each SVARAD dimension and the relevant items of the PANSS and the Hamilton's scales provided evidence of criterion validity for all SVARAD items [51]. The criterion validity of the scale has subsequently been corroborated by unpublished data from a study that generated several publications [53–55] and from an ongoing study that is currently being performed at the Department of Human Neurosciences of the Sapienza University of Rome. In the first of these studies, 151 psychiatric inpatients were administered the SVARAD together with several other assessment instruments, among which the 24-item Brief Psychiatric Rating Scale (BPRS), the Bech-Rafaelsen Mania Scale, and the 21-item HDRS. In the second study, 105 psychiatric inpatients and outpatients were administered the SVARAD and a number of other assessment instruments, including the 24-item BPRS. In both these data sets, the patterns of correlation between the SVARAD items and the relevant items of the other rating scales were consistent with expectations and supported the criterion validity of the SVARAD. Table 1.1 summarises in detail the correlations between the SVARAD items and the criterion items in these three data sets.

Following its development and validation, the SVARAD began to be routinely used for clinical evaluation in the outpatient and inpatient clinics of the Department of Human Neurosciences of the Sapienza University of Rome, and it was also employed in several studies. Practical and research experience has suggested that, thanks to its brevity and ease of administration and scoring, the SVARAD can be used even in busy clinical settings where there is only a very limited amount of time devoted to standardised assessment or research. Using the SVARAD allows clinicians and researchers to broaden the scope of the assessment to encompass areas of psychopathology that rating scales with a narrower focus would neglect. The next chapter discusses in detail how the SVARAD enabled our group to collect

Table 1.1 Correlations between the SVARAD items and relevant items of the Positive and Negative Syndrome Scale (PANSS), 24-item Brief Psychiatric Rating Scale (BPRS), Bech-Rafaelsen Mania Scale (BRMS), 21-item Hamilton Depression Rating Scale (HDRS), Hamilton Anxiety Rating Scale (HARS)

	Apprehension/ Fear			Sadness/ Demoralisation			Anger/ Aggressiveness			Obsessiveness			Apathy			Impulsivity			Reality Distortion			Thought Disorganisation			Somatic Preoccupation/ Somatisation			Activation		
Source of data[a]	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
BPRS/PANSS anxiety	0.56	0.74	0.47																											
HDRS psychic anxiety	0.49	0.46																												
HARS anxiety	0.64																													
HARS tension	0.41																													
HARS fears	0.62																													
HARS depressed mood				0.80																										
HDRS depressed mood				0.83	0.70																									
HDRS guilt				0.52	0.31																									
HDRS motor retardation				0.51	0.41																									
HDRS work and interests				0.42	0.50								0.49	0.38																
BPRS/PANSS depression				0.83	0.71	0.79																								
BPRS suicidality					0.42	0.48																								

(continued)

Table 1.1 (continued)

	Apprehension/ Fear			Sadness/ Demoralisation			Anger/ Aggressiveness			Obsessiveness			Apathy			Impulsivity			Reality Distortion			Thought Disorganisation			Somatic Preoccupation/ Somatisation			Activation		
BPRS/PANSS guilt				0.42	0.42	0.35																								
BPRS/PANSS motor retardation				0.51	0.64	0.26							0.45	0.66	0.43															
BRMS agitation								0.34									0.31													
BRMS hostility/ destructiveness								0.37																						
BPRS/PANSS hostility							0.36	0.48	0.72								0.33	0.49												
BPRS/PANSS motor tension	0.50	0.42					0.31	0.27	0.47								0.25	0.51												
BPRS uncooperativeness								0.18	0.46									0.47												
HDRS obsessive-compulsive symptoms										0.62	0.70																			
BPRS self-neglect														0.51	0.38															
BPRS/PANSS blunted affect													0.45	0.59	0.51															
BPRS/PANSS emotional withdrawal													0.58	0.50	0.49															
PANSS apathetic social withdrawal													0.51																	

PANSS disturbance of volition												0.52																
PANSS poor impulse control							0.56								0.83													
HDRS paranoid symptoms																		0.66	0.61									
PANSS delusions																		0.89										
BPRS/PANSS suspiciousness																		0.62	0.48	0.74								
BPRS/PANSS hallucinations																		0.73	0.51	0.51								
BPRS unusual thought content																		0.68	0.72	0.92								
BRMS flight of thoughts																						0.42						
BPRS/PANSS conceptual disorganization																					0.67	0.66	0.94					
PANSS difficulty in abstract thinking																					0.77							
PANSS stereotyped thinking																					0.63							
HDRS somatic anxiety																								0.43	0.59			
HDRS hypochondriasis																								0.80	0.69			
BPRS/PANSS somatic concern																								0.79	0.80	0.65		

(continued)

Table 1.1 (continued)

	Apprehension/ Fear			Sadness/ Demoralisation			Anger/ Aggressiveness			Obsessiveness			Apathy			Impulsivity			Reality Distortion			Thought Disorganisation			Somatic Preoccupation/ Somatisation			Activation		
BRMS motor activity																	0.28												0.70	
BRMS verbal activity																													0.56	
BRMS voice level																													0.51	
BRMS elevated mood																													0.53	
BPRS elevated mood																													0.57	0.67
BPRS/PANSS grandiosity																												0.62	0.32	0.75
BPRS/PANSS excitement																	0.28	0.46										0.71	0.63	0.73
BPRS motor hyperactivity																	0.26	0.51											0.45	0.70

[a]Data indicated as A come from the first validation study [51]; data indicated as B are unpublished data collected on 151 psychiatric inpatients as part of a study that generated several publications [53–55]; data indicated as C come from an ongoing study performed at Sapienza University of Rome on psychiatric inpatients and outpatients

Only statistically significant correlations are reported in the table

standardised, quantitative data about psychopathological dimensions in a large sample of 1124 psychiatric outpatients [56] and 846 psychiatric inpatients.

Subsequently, in a series of studies, the SVARAD was used to investigate the symptom structure of unipolar depression. A first study [57] was carried out on 380 first-contact adult outpatients who had received a diagnosis of a DSM-IV unipolar depressive condition (major depressive disorder, dysthymic disorder, depressive disorder not otherwise specified, adjustment disorder with depressed mood, and adjustment disorder with mixed anxiety and depressed mood). The patients had no comorbid psychiatric diagnosis on DSM-IV Axis I or II, had not received treatment with antidepressant drugs in the preceding 2 months, and were free from severe medical illness. Exploratory factor analysis suggested that three main symptom domains underlay depressive symptomatology, namely, core depression (Sadness/Demoralisation, Apathy), anxiety (Apprehension/Fear, Somatic Preoccupation/Somatisation), and anger/irritability (Anger/Aggressiveness, Impulsivity, Activation). From a clinical perspective, the Anger/Aggressiveness dimension was particularly relevant, as 98 (26%) patients received a rating of 2 or more on the Anger/Aggressiveness item, as compared with 36 (9%) and 3 (1%) patients who were rated 2 or more on Impulsivity and on Activation, respectively.

Similar results were obtained in a subsequent study [58], which focused on major depressive disorder and involved 222 first-contact outpatients who had no comorbid psychiatric diagnosis on DSM-IV Axis I or II, had not been treated with antidepressants in the preceding 2 months, and were free from severe medical illness. In these patients, too, the anger/irritability domain appeared to be clinically relevant in a substantial proportion of patients, as 48 (22%) patients received a rating of 2 or more on the Anger/Aggressiveness item, 16 (7%) on the Impulsivity item, and 2 (1%) on the Activation item.

Interestingly, a related study [59] showed that the mean scores on the Anger/Aggressiveness item were significantly higher ($p < 0.01$) in these patients with major depressive disorder as compared with 258 patients with anxiety disorders and 26 patients with somatoform disorders. The difference remained significant ($p < 0.01$) after adjustment for age and gender. Also, about twice as many patients with major depression (22%) had a rating of 2 or more on Anger/Aggressiveness, compared with patients with anxiety (12%) or somatoform disorders (11%). The difference was significant ($p < 0.01$) in a multiple logistic regression model including age and gender.

Overall, these studies supported the notion that in depressive disorders there are psychopathological dimensions other than depressed mood that deserve greater clinical recognition and research. One of these is anxiety, which despite not being part of the diagnostic criteria for the major depressive episode, is nevertheless covered by the rating scales that are commonly used to assess depressed patients and thus, when present, is usually recognised. The other dimension is operationalised in the SVARAD Anger/Aggressiveness item and includes clinical features such as anger, irritability, aggressiveness, and hostility.

Neither concurrent antidepressant treatment nor misdiagnosis of bipolar II disorder was likely to explain our finding that a substantial proportion of depressed patients

presented with clinically significant levels of anger, irritability, aggressiveness, and hostility. A link between depression and anger is indeed not surprising, as it was suggested by sources as diverse as psychoanalysts [60, 61], cognitive psychotherapists [62], neurobiologists [63], and attachment theorists [64]. However, the SVARAD was instrumental in providing quantitative evidence of the relevance of anger and aggressiveness in patients with unipolar depression, as most instruments that were available at that time for the assessment of depression did not assess these clinical features. Clearly, the proper recognition of significant levels of anger and related clinical phenomena is important, as it has substantial implications for treatment.

The SVARAD also allowed detection of treatment-related changes in Anger/Aggressiveness in a subsequent study of cancer patients who had been identified through a multistage screening process as suffering from a mood or anxiety disorder. Together with common measures such as the Hamilton Anxiety Rating Scale and the Beck Depression Inventory, the SVARAD enabled the detection of highly significant ($p < 0.001$) differences from baseline in patients treated with psychotropic drugs, not only in depressive and anxiety symptoms but also in the Anger/Aggressiveness dimension [65]. Apart from suggesting the usefulness of broad dimensional assessment via the SVARAD in psycho-oncology, this study provided preliminary evidence that the instrument is sensitive to clinical change.

Further evidence of responsiveness of the SVARAD was provided by a subsequent study on depressed patients with dysphoric mood [66]. A single-group, open-trial design was used to examine the effectiveness of a combination of a selective serotonin reuptake inhibitor (SSRI) and an anticonvulsant, mostly valproate, in unipolar depressed patients presenting with prominent symptoms of anger, irritability, and hostility. The participant group consisted of 35 consecutive outpatients with a unipolar depressive disorder and notable anger, aggressiveness, or hostility as attested by the SVARAD. The participants had neither comorbid cluster A personality disorder nor borderline personality disorder and were free from severe physical illness. At the 12-week follow-up visit, most patients (82%) were rated as "improved" or "very much improved" on the Global Improvement item of the Clinical Global Improvement (CGI) scale. Similarly, 80% of patients experienced a reduction in HDRS total score of at least 35%. There was a highly significant ($p < 0.001$) decrease in HDRS total score, HDRS and SVARAD items covering anxiety symptoms and core depression symptoms, and SVARAD anger/irritability symptoms. The average percentage of improvement in anger/irritability was 69%, while the average percentage of improvement in the depressive and anxiety domains was 56% and 36% on the HDRS and 69% and 35% on the SVARAD, respectively. Although limitations in the study design suggest caution in drawing inferences about the effectiveness of this drug combination, this study suggested that adding valproate and possibly other anticonvulsants to SSRI medication might be a profitable strategy when dealing with unipolar depressed patients presenting with prominent symptoms of anger, irritability, and hostility. With regard to the SVARAD, these findings provided not only further evidence of sensitivity to clinical change but also evidence of criterion validity, as changes in the HDRS core depression and anxiety factors closely paralleled changes in the SVARAD items covering related constructs.

Another study showed that the SVARAD can be useful for investigating subtle psychopathological issues. This study examined the association between psychopathological dimensions and specific obsession subtypes, such as aggressive, contamination, sexual, hoarding/saving, symmetry/exactness, religious, and somatic subtypes [67]. The study was carried out on 57 first-contact outpatients with severe obsessive-compulsive disorder (OCD) with a duration of at least 1 year. The patients were administered several assessment instruments, among which were the Yale-Brown Obsessive-Compulsive Scale and the SVARAD. Significant correlations were found between the Sadness/Demoralisation item and contamination and somatic obsessions; between the Apprehension/Fear item and contamination, religious, and somatic obsessions; and between the Somatic Preoccupation/Somatisation item and contamination and somatic obsessions. The most interesting findings concerned the Anger/Aggressiveness and Impulsivity items, which were correlated with aggressive, sexual, and, to a lesser degree, contamination obsessions. These findings are consistent with cognitive accounts of OCD, which emphasise that obsessive-compulsive phenomena are related to difficulties in identifying, understanding, expressing, and regulating anger [62] and that disgust and anger are important components of moral judgment and moral violation [68]. Freud himself [69] suggested that persistent unwanted aggressive, horrific, or sexual thoughts accompanied by ritualistic behaviours are the result of unsuccessful defence mechanisms against potential violations of moral standards.

Concerning obsessive-compulsive disorder, it is worth mentioning that more than a decade before its separation from anxiety disorders in DSM-5, we performed a study aimed at comparing its dimensional profile with that of other anxiety disorders [70]. The participants were consecutive adult outpatients with a DSM-IV anxiety disorder, free from psychiatric or medical comorbidity, of whom 33 received a diagnosis of OCD, 104 of panic disorder (PD), 18 of generalised anxiety disorder (GAD), and 67 of anxiety disorder not otherwise specified (ADNOS). All participants were rated on the SVARAD by a psychiatrist. On the one hand, the patients with OCD displayed higher scores on Sadness/Demoralisation and Apathy than those with PD and ADNOS. Also, they showed higher scores on Reality Distortion and Thought Disorganisation than patients with PD, GAD, and ADNOS. On the other hand, they displayed lower scores on Somatic Preoccupation/Somatisation than patients with other anxiety disorders, particularly PD. This study showed that there are several differences in psychopathology between OCD and the other anxiety disorders, thus questioning the appropriateness of the classification of OCD among anxiety disorders.

Finally, a recent study showed that the SVARAD can also be used in critical settings with limited time, information, and resources, such as emergency settings [71]. Indeed, a dimensional approach to acute psychopathology is particularly suitable to emergency settings, where clinicians are required to rapidly identify the psychopathological domains to be treated, independent of categorical diagnosis. The majority of the instruments allowing a comprehensive assessment of psychopathology require too much time to be routinely used in emergency settings, whereas the SVARAD can be completed quickly and covers more dimensions than

disorder-specific rating scales. This study involved 312 consecutive patients undergoing psychiatric evaluation in the emergency room of the Policlinico Umberto I hospital in Rome over a 6-month period. A replication study was performed in another Rome hospital on a random sample of 118 patients. In both samples, the patients who were recommended for psychiatric hospitalisation displayed significantly higher levels of Anger/Aggressiveness, Apathy, Impulsivity, Reality Distortion, Thought Disorganisation, and Activation. Multivariate analysis pointed to Reality Distortion, Impulsivity, and Apathy as the most important psychopathological predictors. Also, other variables such as the almost self-fulfilling proposal for compulsory admission and, more importantly, the categorical diagnosis of psychotic or mood disorder were identified as independent predictors of hospitalisation. Hierarchical regression analysis revealed that the dimensional assessment was the strongest predictor of hospitalisation. This study suggests that, in emergency settings, a standardised dimensional assessment may usefully complement the categorical approach to psychopathology in the identification of the patients who need psychiatric hospitalisation and may also help select appropriate treatment more quickly and efficiently.

In addition to research on the validity and the clinical and research usefulness of the SVARAD, recent activities have included the development of foreign language versions of the instrument. Steps for the construction and validation of a Brazilian version of the SVARAD have recently been undertaken [72]. Also, an English version, named with the acronym RADAS (Rapid Dimensional Assessment Scale), has recently been developed according to established procedures for the cross-cultural adaptation of psychosocial measures [73], involving three independent translators fluent in both Italian and English, who followed an iterative process of reviewing and commenting aimed at converging on an optimal translation. We concentrated our efforts on producing a good translation while refraining from performing iterative back-translation. Iterative back-translation, which merely seeks to achieve linguistic and conceptual equivalence, has been criticised as a quality assurance measure by several authors for both theoretical and practical reasons [74], as it has been described as a suboptimal procedure with limited effectiveness in determining the accuracy of the target text in relation to the original source text [75]. It has also been accused of overlooking clarity and understandability and not taking into account context and milieu [76]. The previously presented description of the SVARAD items is based on this carefully developed English version, which is illustrated in Fig. 1.1.

1.6 Final Comments

In conclusion, more than 20 years of clinical and research experience with the SVARAD have corroborated its reliability, validity, and ease of use. Its dimensional nature may help in individualising treatment for a wide variety of clinical presentations, even for patients with clinical pictures that have fuzzy boundaries and are not well characterised in categorical terms, such as patients with somatic symptom

disorders [77]. Its main limitation, which is inherent in all dimensional approaches to psychiatric diagnosis, lies in the cross-sectional nature of the assessment, which needs to be supplemented with longitudinal information in order to optimise evaluation and treatment. Also, the choice of using a single item to evaluate each dimension, while maximising ease and rapidity of use, involves some reduction in reliability and a restricted range of scores. Moreover, some areas of psychopathology, such as dissociative experiences, are not covered. With these limitations in mind, the instrument has proved to be suitable even for busy clinical practices where professionals have little time to devote to standardised assessment. While longer and more sophisticated rating scales might be preferable in specific settings and for other purposes, such as detailed evaluation of symptoms or outcome assessment in clinical trials, the SVARAD finds its sweet spot in clinical settings where a reliable, comprehensive, yet rapid assessment of psychopathology is needed. It is also a valuable resource in the training of residents in psychiatry and clinical psychologists, as it forces the rater to pay attention to all clinical aspects, rather than only to the diagnostic criteria relevant to each patient's specific disorder. It is our hope that the readers of this book will find something of interest in the following chapters, which provide a detailed presentation of the clinical, biological, and treatment aspects of all SVARAD dimensions.

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