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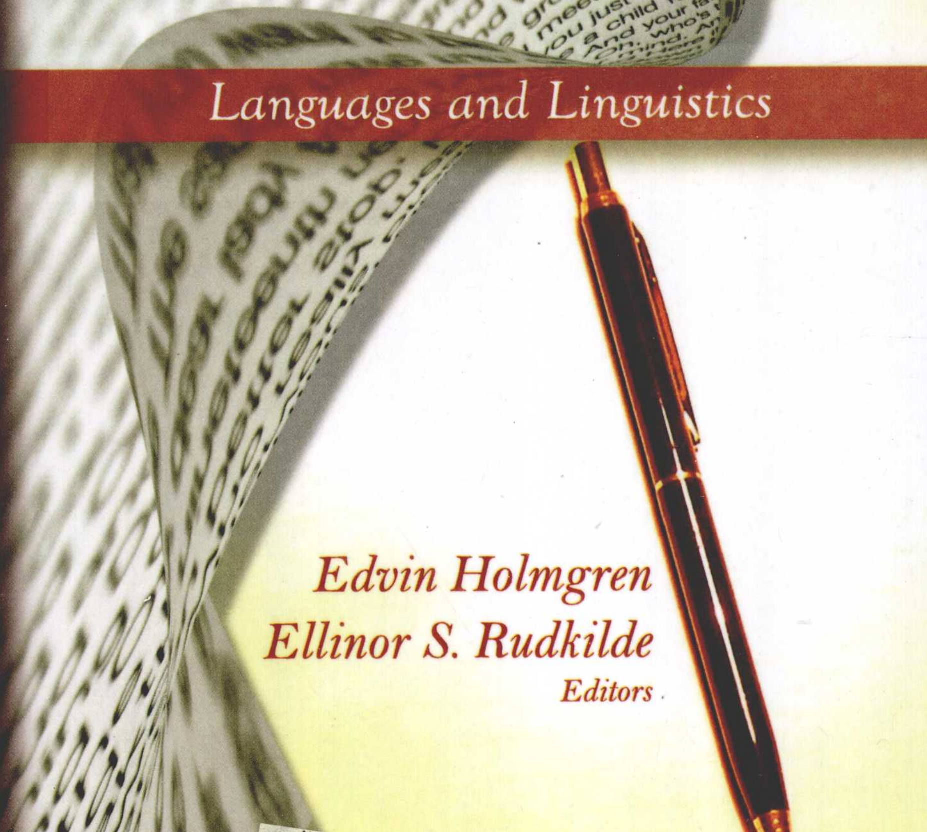

Edvin Holmgren
Ellinor S. Rudkilde
Editors

APHASIA

Classification, Management Practices and Prognosis

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LANGUAGES AND LINGUISTICS

APHASIA

CLASSIFICATION, MANAGEMENT PRACTICES AND PROGNOSIS

EDVIN HOLMGREN
AND
ELLINOR S. RUDKILDE
EDITORS

New York

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CLASSIFICATION, MANAGEMENT PRACTICES AND PROGNOSIS

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Preface

Aphasia is an acquired impairment of production or comprehension of language or both resulting from damage to the language network in the brain. In this book, the authors present topical research in the study of the classification, management practices and prognosis of an aphasia diagnosis. Topics discussed include aphasia consequences to the patient and care-givers; the clinical patterns of aphasia; intensive treatment, pharmacotherapy, transcranial magnetic/electric stimulation as a potential adjuvant treatment for aphasia; diagnosis and management of language impairment in acute stroke; and aphasia classifications.

Chapter I - This chapter describes consequences from aphasia from the perspective of those affected and their close relatives. Nine persons with lived experiences of aphasia contribute to data by means of interviews, published books and diaries, and seventeen close relatives narrated about their situation as informal caregivers. All that information was interpreted in three parts in accordance with a lifeworld hermeneutic approach. The first, which dealt with existential consequences of aphasia, indicated that the intentional, non-verbal act when something is recognized *as* something is *not* affected by aphasia. Aphasia merely affects the world of symbols, which is necessary for interaction with others. It is therefore connected with feelings of alienation, inferiority and shame in social settings. The second part, which dealt with the issue of professional aphasia care, suggests that adequate care from the affected person's point of view presupposes a secure base and a caregiver who recognizes and trusts the patient's ability to think and communicate albeit not always verbally. In the third part the investigation is directed to close relative's situation. It is suggested that a life together with an aphasic person means being used as a bridge between the aphasic person and the surrounding world.

This leaves close relatives with a lonely burden of responsibility. Finally a synthesizing analyse suggests that aphasia management practice includes care and support as a mutual concern and a shared responsibility for professional carers, close relatives and community service. The principles for that are outlined under seven main heads.

Chapter II - From the simplistic explanations of Wernicke's and Broca's, to the latest investigative headways made into the understanding of intricacies involved in the use of the spoken and written words; modern science is still in the process of understanding Aphasias. The use of radiological and pathological diagnostic modalities in the study of language deficits has helped in the recognition of two categories of aphasias. The acute and sub-acute presentations seen mostly in association with cerebrovascular accidents, CNS infections, and head trauma shows involvement of specific parts of the perisylvian language network which is located in the left hemisphere in majority of right as well as left-handed individuals. Based upon the evaluation of spontaneous speech, naming, comprehension, repetition, reading and writing, and diagnostic imaging these aphasias are divided into central aphasias and the disconnection syndromes. The central aphasias, namely Wernicke's and Broca's are due to damage of the two classical, though not anatomically discrete language centers bearing the same names. The disconnection syndromes are a result of damage to areas of the language network other than the classical centers and include Transcortical and Conduction Aphasias among others. The slowly progressive aphasias caused by neurodegenerative diseases are referred to as Primary progressive aphasias (PPA). In order to simplify understanding of these aphasias and thereby help find cures these aphasias have recently been classified into the agrammatic, semantic, and logopenic variants. Management and prognostic issues pertaining exclusively to language disruption are widely studied in the aphasias with actual presentation. The mainstay of treatment is speech and language therapy; however some drugs are also showing promise especially when combined with language therapy. In post-stroke aphasic patients there is a strong correlation between initial severity and eventual recovery. Although most improvement occurs in the first few months, late language therapy has also shown benefit. Ongoing research also points to the potential utility of transcranial magnetic and electric stimulation for the treatment of certain aphasias.

Chapter III - Aphasia after stroke is a common and disabling symptom, which can recover in the weeks, months or years following brain injury, showing that the adult brain can reorganize to adjust to impaired functions.

Standard rehabilitation approaches aim to improve the deficient function through speech and language therapy (SLT). In parallel with increasing knowledge about central nervous system plasticity, different adjuvant interventions have been recently implemented to enhance the outcome of speech and language therapy. One of them consists in increasing the intensity of SLT in order to obtain better recovery. This is achieved for instance with computer-assisted therapy (CAT) or with constraint-induced aphasia therapy (CIAT) approaches.

A second approach tested the combination of a number of drugs with SLT, with the aim to increase its effect. The mechanism thought to underlie enhanced recovery with the addition of specific drugs includes increasing attention and learning though modulation of neurotransmission or restoring metabolic function. Several substances have been assessed, including noradrenergic drugs and drugs acting on the dopaminergic, glutaminergic, gabaergic, and cholinergic systems.

Finally, another, still experimental, intervention in stroke rehabilitation consists of neuromodulation via non-invasive cortical stimulation, e.g. through transcranial magnetic stimulation (TMS) or direct current stimulation (tDCS). These techniques have recently been proposed to potentially endorse functional recovery after stroke through (i) enhancing excitability of the stroke hemisphere or (ii) suppressing the non-stroke hemisphere to reduce its potential interference with functional recovery of the stroke hemisphere.

While both treatment intensity and TMS have led to several promising results on efficacy in aphasia rehabilitation, the effect of pharmacotherapy seems to be less straightforward. In the present chapter we will perform a review of recent literature on the effects of these approaches as potential adjuvant to standard SLT in the rehabilitation of aphasia.

Chapter IV - Language impairments are frequent in stroke, especially in the hyper acute phase, occurring in 15 to 50% of stroke patients. Recovery from aphasia remains difficult to predict. Language impairment still exists in at least 50% of initially aphasic patients one year after stroke. Post-stroke aphasia is a major source of disability that can lead to impaired communication, reduced social activities, depression and a decreased likelihood of resuming work. The role of the stroke unit in improving morbidity, mortality and recovery has been clearly demonstrated. Nevertheless, the need for intense and sustained acute management of aphasia in specialized stroke units remains controversial. The recent validation of a tool to rapidly screen for aphasia (LAST) after stroke allows for its early detection and management. Early detection of aphasia after stroke may improve outcomes by taking advantage of the synergy between intensive speech therapy and early neural reorganization. Daily re-evaluation will facilitate tailored rehabilitation sessions, multidisciplinary management by the stroke team, and development of educational resources for patients and their caregivers. Standardizing protocols for identifying and managing aphasia requires the co-operation and coordination of the entire stroke team, along with the daily presence of speech therapists. These considerations are crucial for patients in the stroke unit to achieve the full benefit of the management proposed in this chapter, to ultimately promote better long term functional prognosis.

Chapter V - In this chapter it is emphasized that there are only two fundamental forms of aphasia, which are linked to impairments in the lexical/semantic and grammatical systems of language (Wernicke-type aphasia and Broca-type aphasia, respectively). Other aphasic syndromes do not really impair language knowledge per se, but rather either some peripheral mechanisms required to produce language (conduction aphasia and aphasia of the supplementary motor area), or the executive control of the language (extra-Sylvian or transcortical motor aphasia). A new classification of aphasic syndromes is suggested. In this proposed classification a distinction is established between primary (or ''central'') aphasias (Wernicke's aphasia—three subtypes—and Broca's aphasia); secondary (or ''peripheral'') aphasias (conduction aphasia and supplementary motor area aphasia); and dysexecutive aphasia.

Contents

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Chapter I

Aphasia Management Practice: Care and Support – A Mutual Concern and a Shared Responsibility

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Abstract

This chapter describes consequences from aphasia from the perspective of those affected and their close relatives. Nine persons with lived experiences of aphasia contribute to data by means of interviews, published books and diaries, and seventeen close relatives narrated about their situation as informal caregivers. All that information was interpreted in three parts in accordance with a lifeworld hermeneutic approach. The first, which dealt with existential consequences of aphasia, indicated that the intentional, non-verbal act when something is recognized *as* something is *not* affected by aphasia. Aphasia merely affects the world of symbols, which is necessary for interaction with others. It is therefore connected with feelings of alienation, inferiority and shame in social settings. The second part, which dealt with the issue of professional aphasia care, suggests that adequate care from the affected person's point of view presupposes a secure base and a caregiver who recognizes and trusts the patient's ability to think and communicate albeit not always verbally. In the third part the investigation is directed to close relative's situation. It is suggested that a life together with an aphasic person means being used as a bridge between the aphasic person and the surrounding world. This leaves close relatives with a lonely burden of responsibility. Finally a synthesizing analyse suggests that aphasia management practice includes care and support as a mutual concern and a shared responsibility for professional carers, close relatives and community service. The principles for that are outlined under seven main heads.

Introduction

Many models for recovery from aphasia processes do not take into account that remaining speech impairments lead to difficulties in interacting with friends and relatives, which in turn, can delay recovery. This chapter on aphasia management practice therefore concentrates on interpersonal relations as a secure base for further rehabilitation.

Aphasia victims meet professional carers from the on-set of their illness. Yet in a literature review Tacke (1999) found no research investigating the carer's significance for the results of the aphasia treatment. On the contrary the review shows that carers working in general hospitals rarely centred their attention on the individual needs of the aphasic patient, with the result that there is little interaction between carers and patients during the hospital stay.

However, interest in caring science research has increased during the 21st century, and it has been found that professional carers can provide support that enhances the patient's self-esteem and help them to gain a positive but realistic view of the situation. Adequate caring might even encourage progress towards rehabilitation, and turn a blocked situation into a secure one. Andersson and Fridlund (2002) found that interactions with professionals were adequate when they balanced and compensated for disabilities. Sundin and Janson (2003) observed patient-carer interactions during morning care, and they interviewed excellent carers, who were recommended for the study by colleagues. Those professional carers neither reflected nor talked much during caring; instead they used their hands to communicate through touching. The carers thought that talking disturbed the ability of severely aphasic patients' to concentrate.

Caring measures also need to take existential issues that follow on from aphasia into account. That is particularly important preventing the development of post-stroke depression. Depression is a common experience related to coping with post-stroke effects and has a negative impact on rehabilitation (Robinson, 2002). Depressed persons with aphasia often suffer from reduced self-esteem, which may change their self-image Depression may further affect the motivation needed to improve functional independence, as failure to participate in the community due to impaired verbal ability often results in feelings of loneliness and isolation.

That the effectiveness of conventional therapies has not been conclusively proven (c.f. Berthier, 2005) has led to attempts to integrate knowledge from several therapeutic domains in efforts to introduce other strategies. Cunningham (1998) suggested a counselling approach for patients with severe aphasia, in order to facilitate adaptation to the situation. Van der Gaag et al. (2005) proposed that therapeutic approaches should include family members in order to improve quality of life and communication, as most caregiving is provided by close relatives, at least in the long run.

Research into informal caregiving also emphasizes the importance of non-professional careproviders (Lau and McKenna, 2001). Yet little research is directed to close relatives' problems in an abruptly changed life situation (c.f. Sawatzky and Fowler-Kerry, 2003; Blake, Lincoln and Clark, 2003; Tooth et.al 2005). The same is true for close relatives' educational needs (c.f. O'Connell and Baker, 2003).

According to Bäckström and Sundin (2007) close relatives of stroke survivors often sacrifice themselves and disregard their own needs. Wallengren, Friberg and Segesten (2008) describe such experiences as being "shadows", partly because they are invisible to professional caregivers who focus entirely on the patients and frequently forget their families.

The ability and willingness of close relatives to understand and respond to the aphasic person seems nevertheless to be of vital importance. This is in clear contrast to the amount of attention that has been paid to specific problems from the perspective of informal caregivers.

The starting point for the study that now follows is the assumption that we need knowledge about the consequences of aphasia as an existential challenge in order to provide adequate care and support, which in turn can serve as a firm base for further rehabilitation. The first part describes the experience of suffering stroke and aphasia and the struggle to regain the ability to communicate. The second part describes the conditions needed for properly functioning professional aphasia care, seen from aphasic persons' viewpoint. The third part concerns those closely related to an aphasic person, and their need for support from community service.[1] Finally the three parts are

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[1] The three parts were initially interpreted separately and have been published as three different papers (Nyström 2006; 2009; 2011).

compared and synthesized in order to reach a further understanding on how to provide a firm and solid caring base for a person with aphasia, which can serve as a foundation for further rehabilitation.

Study Design - A Lifeworld Hermeneutic Approach

The study has a lifeworld hermeneutic design. Lifeworld research emphasizes individuals as living wholes and focuses on the world as it is experienced prior to the formulating of any hypothesis to explain it (Dahlberg, Dahlberg and Nyström, 2008). It does not look at objects and events as such, but at the way in which they are perceived and experienced as phenomena. Lifeworld research basically draws on the works of the philosophers Edmund Husserl (1970) and Hans-George Gadamer (1997).

The interpretative analysis was inspired by Paul Ricoeur (1976). It was through the dialectic of understanding or explanation that Ricoeur developed his interpretation theory, in which understanding and explanation overlap and cross each other. The range of propositions and meanings in the set of data, which is described below, has thus been unfolded in the phases of explanation.

Understanding emerges from the chain of partial meanings moving toward a whole in an act of synthesis, and it relies on the meaningfulness of expressions such as vocal and written signs. This is in accordance with Ricoeur who suggested that understanding, explanation, and interpretation are mutual forms of the concept of understanding that rely on the same sphere of meaning.

In approaching the issues involved in suffering from aphasia, professional aphasia care and being closely related to an aphasic person, interpretations necessarily involve several attempts to explain meanings in the data. For this reason, theories from existential philosophy and psychodynamics are sometimes used as analytical tools. When that is the case the theoretic tool is briefly mentioned in the findings.

Four women and five men, aged 45-72 at the time of data collection, participated in the first two parts of the study. The data comprise transcribed interviews, autobiographies and excerpts from diaries. Data were collected in Sweden, from nine Swedish-speaking informants, who made their contributions to the data set on 16 different occasions. They were purposefully selected from among members of two branches of the Swedish National

Fellowship for Aphasia, in order to obtain variation in age, gender, type of aphasia and timelapse since occurrence of the cerebral lesion. Type of aphasia was reported by the informants themselves or their spouses.

During the interviews it was necessary to communicate in a way that facilitated understanding. Some interviewees could speak adequately, while others still exhibited the symptoms of expressive and/or impressive aphasia. One important criterion, which limited the number of potential interviewees, was the need to communicate relatively well, orally and/or in writing. In this study communication includes both explicit and implicit meanings that are expressed and interpreted in social intercourse. The interviewees had thus either recovered or learned how to carry on a conversation in spite of the difficulties of speaking or understanding words.

The interviews followed the principles of the life-world approach mentioned above. The interviewees were invited to reflect as openly and deeply as possible on their experiences of aphasia, their struggle to regain the ability to communicate, and their experiences of aphasia care. These interviews were audio-taped and transcribed verbatim.

When more information was required in order to establish the relevance of a tentative interpretation, some informants were contacted again for follow-up interviews. In these interviews the questions were more specific and aimed at obtaining information that could further illuminate the relevance of tentative interpretations (see validity criteria below). The follow-up interviews were not audio-taped but notes were made.

Three interviewees supplemented their interviews with written material that further illuminated their statements. These included diaries or written advice from the interviewees to others with aphasia. Two autobiographies that described experiences of aphasia (Tropp-Erblad, 2002/1882; Dahlin, 1997) were also used as data, but were complemented with interviews. Time lapse since the occurrence of the brain lesion varied from 1-23 years.

The close relatives, 11 women and 6 men, who were interviewed for the third part of the study were purposefully chosen through the aphasia associations. As it was presumed there would be variations in community service they were selected from three different Swedish municipalities, a big city, a smaller town and a rural municipality.

There were 10 spouses, 6 adult children and one parent of aphasic persons. These interviews also followed the principles of an open life-world approach, and all began with a question about what it is like to be closely related to a person with aphasia. The interviewees were encouraged to describe their experiences and their actual life situation as deeply as possible. Pliable probing questions were asked in order to get them to reflect on matters that were not at first described.

Interpretative Analysis

Within the three texts statements were compared and put together according to similarities so that further meanings could be abstracted from the data. Tentative interpretations emerged, each illuminating one aspect of the complexity that characterized personal experiences of aphasia, professional care and the situation as close relative. The relevance of the tentative interpretations was evaluated using the following validity criteria:

- The source of an interpretation should only be an actual piece of the data. If theoretical support is used, it is merely as a tool to suggest explanations for a certain item of information. Thus no theory must guide the whole interpretative process.
- No other interpretations should be found that better (more meaningfully) explain the same data.
- There must be no contradictions between an interpretation and the data.
- When more information is required in order to establish the relevance of a tentative interpretation, informants must be contacted again for follow-up interviews.

All interpretations that were deemed to be valid were compared with each other in order to arrive at a comprehensive understanding for each analytical part of the study. In the final synthetizing analysis all three parts were compared, with the following validity criteria in mind:

- The level of abstraction is connected to the principle of moving from the parts to the whole and vice versa, striving for consistency in the jigsaw puzzle of interpretation.
- The consistency of the picture that emerges must be further strengthened by ensuring that no data of general importance are omitted from the synthetizing analysis.

The First Analysis

Existential Consequences of Aphasia

The following first interpretative analysis is based on data from nine informants with personal experiences of suffering a stroke with aphasia. They are also familiar with the struggle to regain the capacity to communicate. As mentioned above, they contributed to the data in several ways by means of interviews, auto biographies and diaries.

Below six interpretations are presented of that information which covers six different aspects of the research phenomenon; existential consequences of aphasia. A comparison of these different aspects culminates in a comprehensive understanding that illuminates the existential meaning of losing the world of symbols. The quotations are excerpted from the data.

It is Essential to Repress Feelings in Order to Act Rationally During the Acute Phase

Despite the fact that warning signs, such as TIA or venal thrombosis, were common, all the interviewees experienced their aphasia as a bolt from the blue. For some, all verbal communication suddenly ceased; while others could speak fluently but without making any sense. Finding oneself in such a situation was generally perceived as a horrific experience, although in retrospect it was only partly associated with feelings of shock and fear.

When the stroke occurred only one interviewee became unconscious, while the others were confused and unable to act rationally. One of them recalled that she just wanted to take a nap and lie down in the snow beside her car. For another, the first indication of a brain lesion was somewhat unusual; he bid on everything at an auction. Those who were less confused recognized that they must act in order to get help, and afterwards they were surprised by their ability to act rationally. One man, for example, was alone in his weekend cottage when it happened and knew immediately that he was unfit to drive. He understood that he had to walk quite a distance in order to contact his neighbour.

Some concluded that the capacity to repress feelings of shock and fear is due to a biological process associated with their cerebral lesion, while others explained their calmness as a mix of biological and psychological processes.

> Your body cannot accept that you cannot speak. You can't understand it emotionally. (Is this, do you think, due to the cerebral lesion?) No, not just the lesion, it is also a psychological process.