

# Chapter Ten

## Breakdown In the Fitting Process

### An Idiographic Approach To Fitting: A Matter of Perspective

by Steffi B. Resnick, PhD

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*"I am surrounded by exciting opportunities skillfully disguised as insoluble problems."* Anon.

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For those of us engaged in the daily practice of dispensing hearing aids, there are, in addition to a legion of delighted clients, a substantial number of disaffected, disappointed, disgruntled, and/or dissatisfied ones. Among the unhappy are those who have rejected one or more fittings because of what they perceive to be insufficient benefit; those who have retained their fitting but use it intermittently, if at all; those who consider the fitting unsatisfactory but persist in its use because of their financial investment, or the pressure (or encouragement) of family members; and those who engage in a relentless quest for an instrument or provider who will restore their hearing as they remember it, the sound of their own voice as they remember it, or the sound of music, again, as they remember it. Among them, as well, are those who reported they were pleased initially, but whose peripheral sensitivity, dexterity, cognitive status, processing abilities, or communication environment has changed, producing new difficulties in the utilization, management, or control of a previously satisfactory, or partially satisfactory fitting.

The demands of clinical practice and the goals of clinical efficacy and fiscal viability dictate that we each

attempt to evaluate, as dispassionately as possible, the degree of user satisfaction or dissatisfaction with a given fitting, whether it is retained, or returned, by the client. One may, indeed, adopt the position that identification of the variables contributing to an unsuccessful fitting is as useful as identification of those giving rise to a successful one. Although the literature tends to emphasize the electroacoustic characteristics contributing to improved performance and increased client satisfaction with hearing aids, the clinical practitioner repeatedly confronts reports of dissatisfaction and unacceptably poor device performance from the user. Thus, the audiologist frequently faces the task of identifying the cause or causes of dissatisfaction and either rectifying the problems or replacing the fitting entirely. It falls to the clinician to determine whether the dissatisfaction is a consequence of one or more of the following: 1) the provider; 2) the product; 3) the particular characteristics of the user; 4) the perception by the user (and/or the general public) of the product and/or its provider; 5) the process of selection; 6) a mismatch between a provider, a product, and a particular client; or 7) unidentified factors. Generating an increased proportion of satisfied hearing aid users within one's own practice requires that one seek to understand and catalog (and thereby avoid) the factors he or she identifies as contributing to a given unsuccessful fitting or to the majority of unsuccessful fittings.

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### Dispenser Competencies

One may attempt to determine, by entertaining one or more working hypotheses, the variables contributing to an unsuccessful fitting for a particular user. For example, as difficult as it may be to accept, one working hypothesis is that the unsuccessful fitting reflects on the competencies of the practitioner (as evidenced by erroneous product selection, poor impression-taking technique, or inadequate counseling regarding realistic expectations for corrective amplification.) Practitioner competency is a frequently cited cause of “remakes” by manufacturers (1). The audiologist who judges this hypothesis to be correct in one or more instances may elect to rectify the situation by becoming familiar with a greater range of products or with the idiosyncrasies of a manufacturer’s product line. He or she may embark on an endless pursuit of the virtually infallible impression-taking technique, of the newest measurement strategy, of the most highly touted fitting protocol, or of the most popular user questionnaire, and seek to learn about user variables beyond those treated in the audiological literature. The pursuit of greater competency has innumerable positive consequences in addition to the development of particular skills, of course. It leads to an increase of knowledge, clinical acumen, and confidence as well as to the development of a healthy skepticism toward the propaganda (negative and positive) and financial incentives with which we are constantly confronted by manufacturers and audiology “experts.”

Within the profession, the emphasis has been to offer providers continuing education that tends to be oriented toward assessment of auditory pathology and toward the introduction of newly developed or revised products and procedures. These programs are generally offered by academicians, service providers with a flair for self-promotion, consultants to manufacturers, and product representatives from *within the profession*. Consequently, the information is limited to products and their selection and is derived from individuals with training much like our own. Little is available on the impact of an individual’s developmental, cognitive, physical, and psychosocial characteristics on selection, fitting, use, and rejection of hearing aids. Thus, the dispensing audiologist may find it necessary to venture far afield to address his or her weaknesses in information relevant to acceptance and utilization of products by the end user of the aid.

### Product Characteristics

Once having confronted one’s own competencies, one is in a stronger position to examine the products and

practices of vendors, the hearing aid manufacturers, and their representatives. The provider will recognize, however, that the enhancement of skills and information is a necessary, but not sufficient, condition for increased client satisfaction. It will come as no surprise that manufacturers provided with a suitable impression will differ in their ability to fabricate a comfortable or adequate shell, to deliver an operational instrument, or to provide a product that remains operational after 2 weeks of use. Experience with a specific product line from a given manufacturer may lead one to suspect that the problems encountered in a specific fitting (inadequate control in the fabrication process, inadequate specification of the characteristics of appropriate candidates, and/or too rapid a release of a poorly tested or constructed product) reflect the particular priorities of the manufacturer at a given time. If one finds that to be the case, one may choose to defer additional fittings from that manufacturer until the quality control issues have been addressed or to attempt to engage in frank discussion with the manufacturer regarding the product limitations. Efforts to obtain information from manufacturers about product limitations or defects can be a frustrating and minimally productive pursuit. Product recall for defective components and poor construction has not been a hallmark of the hearing aid industry. Deficiencies of product design and repair may be denied or dismissed as the idiosyncratic experiences of a given dispenser. Frequently, marked (but temporary) changes in the quality of products are accompanied by an exodus of personnel with whom one has become familiar or by an influx of personnel previously associated with another manufacturer. Instead of receiving a candid report of the deficiencies, the dispenser may find that a product has disappeared somewhat mysteriously from the product line or has been replaced by an “improved” or “updated” model. The audiologist is then faced with the unenviable responsibility of maintaining the instrument operational for 3 to 5 years, so as not to undermine client confidence in his or her ability to make informed choices about products. The hearing aid manufacturer and product developer seek sales volume; the audiologist, however, must repeatedly confront product reliability, longevity, repair history, quality, and speed of repairs.

Although testimonials of colleagues may be helpful when one is considering a product, their reports must be interpreted with caution and should be evaluated carefully within the framework of one’s own experience. The increasing availability of financing packages offered by

some of the manufacturers as incentives for purchasing their instruments may prompt greater utilization of a given product (despite its flaws) than may be warranted on the basis of product efficacy alone. Colleagues also may be wedded to the use of one manufacturer's products simply because they are unfamiliar with alternatives or because the institutional setting in which they operate favors the volume discounts awarded by that manufacturer, or it has chosen to install the fitting software of selected manufacturers. In addition, it should be noted that the manufacturer's interest in satisfying a given dispenser may depend on the institutional structure in which he or she is housed and in the volume of business generated. Thus, the experiences of a dispenser in a large, institutionally based setting may not correspond to those of one in a small solo practice. It soon becomes painfully clear that the reported experience of colleagues, although potentially instructive, cannot substitute for direct observation and experience. Unfortunately, acquiring experience with a range of products is a costly pursuit that may be only partially offset by professional fees, as distinct from the product costs. It may well be, however, that it is precisely those experiences that are of the greatest value to the client, since they permit the dispenser to distinguish the most appropriate product from the rest.

### User Attributes

Having assessed the impact of dispenser competence and product characteristics on the client's satisfaction or dissatisfaction, one may wish to consider the hypothesis that the attributes of the user may be the primary determinants of his or her satisfaction in a given instance. If this is the case, one must seek to define those variables, and address, circumvent, reduce, or eliminate them as factors in subsequent efforts to provide more suitable corrective amplification. For example, a user's poor motor or cognitive capabilities may cause difficulty and frustration in activating a T-switch. In that case, one may eliminate the T-switch (despite the virtually constant harangue one receives to include all-too-often inadequate T-switches for the sake of assistive listening device (ALD) compatibility and telephone use). Or these same limitations may preclude the user's mastery of a less-than-user-friendly remote control. One may select a product that offers a simpler remote with an easily read visual prompt, or one may select a device incorporating adaptive or digital signal processing that does not require user control or activation of the program.

It is also possible that the client's dissatisfaction is not a function of the characteristics of the instrument but a reflection of the person's own disappointment at his or her dependence upon it. Consider, for example, the complaints expressed recently by a disgruntled user, "I hate this damn thing. I can't do without it. I have to use it all the time, and now, I suppose, I better get a spare one just like it."

It is conceivable, as well, that the audiologist may regard a given client as simply too difficult to please. The identification and management of "troublesome" clients is treated delightfully by McCollum and Mynders (2).

Increasingly, the research community is addressing quantification of the users' assessment of the benefit derived from, rather than their satisfaction with, hearing aids. Users who acknowledge the acoustic benefit derived from a given fitting may still judge the fitting unsatisfactory on other bases, or may engage in a seemingly perpetual quest for a better, or a smaller, instrument. The search for predictor variables that can be used to determine user benefit appears a potentially fruitful area, provided the experimental questions are expanded to address broader issues of user satisfaction and usage (3,4). Identification of those variables for specific groups, such as the elderly, may be particularly complex (5,6). Efforts to identify predictor variables may, however, further prompt assessment of personality variables, communication environments, and communication strategies (7). At the present time, clinicians have limited access to assessment tools that can assist them in predicting client satisfaction and use. And it is precisely this satisfaction (and dissatisfaction) that is the frequent topic of conversation among hearing aid users, nonusers, and potential users.

Clinicians will recognize the particular challenges posed by aged adults who regard their hearing impairment as minimally handicapping, but is acceding to the pressures exerted by family members, friends, or bridge partners who urge them to try an instrument that some acquaintance has reported to be satisfactory, or one that has been recently advertised (8). Such people may come equipped with consumer information literature from our own professional association, suggesting to them that trial of several instruments may be required before they consider themselves satisfied. The matter may be further complicated by the financial constraints imposed by managed care companies, whose administrators presumably believe that they should be appropriately compensated for their time but that fitting services should be provided at no charge. That, unfortunately, may prompt

the client to regard the provider more as a retail merchant than as a knowledgeable health care professional.

### Perceptions of the Provider

Providers need to evaluate the extent to which people's perceptions of them as professionals are influenced by decisions they, or their superiors, may have made to eliminate charges for professional services (including hearing aid selection, dispensing, and follow-up). Similarly, providers may wish to examine the extent to which such perceptions are impacted by their affiliations with specific product lines in printed advertising and promotional "open house" activities (frequently encouraged by the manufacturers to acquaint potential "customers" with their products). Providers may determine that, in their particular environment, with their particular client groups, manufacturer marketing activities do not undermine the perception of his or her professionalism in making impartial recommendations guided only by the best interests of the users. If the clinician determines otherwise, it may be advisable to eliminate promotion of particular products and to devote more energy instead to professional preparation and expertise. The consequence of such efforts may be recognition by users of the professionalism and competence of the provider.

### Selection Procedures

The clinical provider who thoughtfully reviews the causes of a fitting failure may modify pre-selection, selection, and post-selection procedures accordingly. Or he or she may judge there to be insufficient evidence that a change is warranted. Alternatively, the provider who rejects the challenging (sometimes arduous, time-consuming, and frequently painful) process of a thorough evaluation of the causes of the fitting failure, may prefer to overlook expressions of dissatisfaction, advising the user that his or her expectations were unrealistic and that the user must adjust to the new device. After having failed to persuade the client of the veracity of those assertions, the provider may simply accept the returned instrument and move on to the next client to repeat the process. Or, rather than relying on a personal assessment of problems with the fitting and the myriad factors affecting any fitting, the clinician may turn to the lofty pronouncements of experts who propose to lead one to more successful fittings through the adoption of a guaranteed approach, or the utilization of a newly developed, but always highly touted, "revolutionary" product.

If the proliferation of product-related and procedure-related publications is any indication of our collec-

tive proclivity, we seem constantly to be in search of the perfect product, the unblemished signal-processing scheme, and the flawless selection procedure—each of which is presumed to work for the "majority" of users. It may be quite reassuring to adopt products and procedures whose merit may have been demonstrated to be suitable for the majority of highly motivated, cognitively and motorically intact, individuals with moderate hearing impairment with good word recognition ability and recruitment, who are tested under conditions that lend themselves to experimental control. To the extent that we adopt the position that the performance and experiences of unpaid volunteers or paid participants in experimental investigations (who do not purchase the products with which they are tested, or purchase them at much reduced prices—ones the manufacturers and researchers may decline to divulge) will predict the performance and experiences of our clients, we may find ourselves increasingly disadvantaged in our attempts to satisfy a particular individual. Although we may evaluate quite critically whether the audiometric configuration of a given group of experimental subjects corresponds to the audiometric configuration of the person for whom we are considering a particular fitting, we often do not question whether the characteristics of the experimental subjects are compatible with those of our own client population or with those of a particular individual. We may not identify the particular characteristics and communication needs of our client that distinguish him or her from the prototypical participant in experimental investigations of a particular product. If we fail to do so initially, we learn over time that familiarity with the technology and research does not obviate the need for knowledge of the unique characteristics of the individual users and their preferences.

From a purely practical standpoint, it may be of some assistance to become informed about the sources of financial support for refereed and non-refereed paper presentations and articles dealing with hearing aids. Such presentations and publications are the primary vehicle for acquiring information about the value of various products and procedures. Therefore, attention should be paid to the motivation for that research. For example, manufacturers may be in the position of providing post hoc justification for their desired claims of product efficacy and may fund research to provide that justification. The demands of regulatory agencies, rather than the adequacy of the research and experimental controls, may dictate the research design. Under those conditions, the soundness of the science may be sacrificed to the exigencies of the funding situation and to the need for manufacturer ap-

proval of the protocol. Failure to recognize those realities of the “research” marketplace may impair the ability to evaluate the research findings critically to determine their applicability for one’s own clients.

As audiologists, we may be well trained to evaluate the auditory function of our clients and to determine the need for corrective amplification based on a set of somewhat arbitrary criteria. Our abilities to diagnose and assess hearing impairment are better developed, and derive from a more extensive research base, than do our abilities to deal with the vagaries of hearing aid selection and provision. Those vagaries, however, do give us an increased opportunity to exercise our professional judgment, provided we choose to do so. We may choose to accept that challenge and seek to expand and strengthen the bases of that judgment. Or we may retreat to the security of a newly developed fitting protocol or an easily administered questionnaire, despite the lack of evidence that those approaches enhance user satisfaction. We may find it more satisfying to adopt the position that it is in the development and exercise of our judgment and skill (derived from information and experience) that the success and satisfaction of each individual client may ultimately depend. Our responsibility becomes one of acquiring the tools that can assist us in developing our judgment and skill. It then becomes our responsibility to evaluate the value of our sources of information with respect to products, to examine the validity of fitting strategies and techniques, to acquaint ourselves with approaches for assessing and documenting user characteristics and preferences, and to determine the unique features of the user that require adaptation, modification, or rejection of our customary approach.

We often are in the unfortunate position of exercising our judgment based on limited and imperfect information about the products at our disposal and insufficient validation of the procedures for selecting those products. Our sources of product information impact significantly on our ability to make judgments about product merit. Invariably, product information is received as promotional material from manufacturers, descriptive articles in trade journals, visits from manufacturers’ representatives, and/or sponsored seminars. We frequently encounter the endorsements of colleagues who report (for a variety of personal, professional, or pecuniary incentives) their unqualified success with a newly released product. We learn of the unique properties of a particular component from its developer (who holds the patent) or from the manufacturer who incorporates it in his product. Unfortunately,

the accolades of colleagues, product developers, or manufacturers rarely are accompanied by discussions of product reliability or the characteristics which define the unsuccessful user. Only later, after the less-than-stellar performance of the product in our practice, do we learn that some versions used by some manufacturers have proven less reliable under actual use conditions or that the user selection criteria have been made more stringent to reflect the manufacturer’s experience with complaints or returns. Guided by an interest in providing the most advanced product, as touted by manufacturer and colleague alike, we may succumb to the temptation (sometimes enhanced by financial incentives) to try a new device for a select group of our clients. When we encounter repeated failure or adverse reactions by users, we may be advised by manufacturer and colleague alike that product reliability issues will be addressed by minor design changes or that the user selection criteria are undergoing revision. Thus, the clinician unknowingly, and frequently unwillingly, has provided valuable field testing of the product and has assumed both professional and financial responsibility for the endeavor. Recognition of this role may prompt one to defer use of the product until evidence of its superiority is available, and to temper one’s future enthusiasm for other revolutionary products. Considered in this context, Dr. Teter’s cautions to the dispenser deserve particular attention:

“When we hear claims of unparalleled superiority relating to a particular hearing instrument surely we must objectively evaluate such claims. When any manufacturer or manufacturer’s representative states that a given system of output control, amplification, filtering, compression, or fitting methodology is so superior as to be the only solution—implicating [sic] that not using it in your everyday fitting would border on negligence—then we must reflect on such statements, as well as reflect on the individual making the statements” (9).

The cautions to be observed with new products have their counterparts in the critical evaluation merited by various fitting algorithms and protocols. We literally have been deluged by algorithms for specification of the frequency response or output limiting characteristics of the devices. Interest in them and their respective rationales have spawned numerous research projects and have occupied chapter after chapter in texts devoted to fitting both pediatric and geriatric clients. One might conclude

that the attention to formulating and justifying prescriptive formulae (based on threshold or suprathreshold characteristics of the client) reflects the enormous importance of the proper selection of the frequency response or output limiting characteristics of the instruments for user satisfaction. The dispensing audiologist confronted by client complaints about sound quality and product performance may find him or herself questioning the wisdom of enthusiastic adherence to a prescribed fitting rule. Plomp's comments on the "uninterrupted flow of papers" devoted to selection of the optimal amplitude-frequency response since publication of the Harvard report (1947) may place the emphasis on fitting rules in a useful perspective:

"In my opinion, this large number of studies on the selection and fitting procedure of hearing aids leads to the following two conclusions. First, the everlasting search for a better amplitude-frequency response illustrates the fact that many subjects are not satisfied with their hearing aid(s); the explanation for this is likely to be the unavoidable noise problem rather than an inappropriate hearing aid as such. Second, the abundance of fitting procedures should be seen as evidence that the amplitude-frequency response is not as critical as the literature seems to suggest" (10).

In that context, the suggestion by Punch that the potential value of fitting procedures that allow listeners to choose an individualized response rather than being prescribed a formula-based response (11), assumes particular significance for the dispensing audiologist. The advent of digitally programmed instruments and multiple memory devices permits effective implementation of procedures based on individual preferences and systematic alteration of performance characteristics to assist the client in adapting to corrective amplification. Indeed, the introduction of digitally programmable, single and multiple memory hearing aids, considered in combination with the absence of consensus on suitable prescriptive algorithms, may put the responsibility for response selection (at different points in the adaptation process and under different listening conditions) once again into the hands of the audiologist. Adherence to a given fitting algorithm may be discarded in favor of the requirement that the user considers a given program satisfactory in his or her unique communication environments (12-14). The audiologist who dispenses multiple memory devices may be

guided by the manufacturers' suggestions for response modifications appropriate to specific environments, such as the Speech Audibility and Stability (SAS) Rule offered by Widex (15) or the comfort programs provided by Phonak (16). In addition, researchers are again proposing computational approaches to determining frequency response characteristics appropriate to the interaction between audiometric configuration and noise environment (17).

We may find ourselves again seduced by the ease of implementing a computational formula for determining the settings of digitally programmable, multiple memory instruments. Again, however, we may find that the client's satisfaction may depend on the audiologist's ability to listen and respond to the user's recitation of the successes and failures of the instrument in the communication environments he or she considers most significant, rather than in a broad range of environments encountered by the prototypical hearing aid user.

To fill the void left by the rejection of many of the rules of fitting based on specification of the optimal frequency response, we now are being advised to pursue measures of loudness growth as a major determinant of user success, and that compression products offer untold benefits for persons with hearing impairment. We are advised that we would be more than somewhat remiss if we fail to include loudness judgments in our selection procedures. We are encouraged to use measures of loudness growth for nonspeech signals (which fail to consider issues of temporal and spatial summation in the loudness percept of complex signals). Again, we are to be lulled into the comfortable belief that if we standardize the measurement technique and apply it to all clients, we can overlook the questionable validity of the procedures.

Ricketts has called into question the value of the "fitting by loudness" approaches that have proliferated of late. Before embarking on the use of those measures, one would do well to recall his caveat that:

"Although [. . . fitting by loudness . . .] strategies are currently being advocated for the fitting of low-threshold compression hearing aids, many assumptions made in their development have yet to be validated" (18).

Indeed the very value of these compression instruments and the basis of the "surge in sales" is being called into question (19,20). That, apparently, has not dampened the enthusiasm of the Independent Hearing Aid Fitting Forum, which advocates the inclusion of frequency spe-

cific loudness judgments as part of a comprehensive fitting protocol for the fitting of nonlinear instruments (21,22).

Technological advances in hearing aid design (which reflect industry-based efforts) appear to have outstripped the abilities of the audiology community to capitalize on them and to employ them successfully. The attention of those doing “applied” research appears to be oriented primarily toward the assessment of the relative efficacy of various signal-processing strategies or of the advantages of advanced signal processing over conventional linear instruments (usually the client’s own instrument), documentation of user auditory characteristics, and the refinement and application of user questionnaires (23).

Increasing attention is being paid to the use of questionnaires for the quantification of perceived acoustic benefit, as part of the emphasis on accountability. The Abbreviated Profile of Hearing Aid Benefit (APHAB), has gained well-placed popularity as a convenient and clinically practical vehicle for quantifying the frequency and type of acoustic problems encountered under unaided and aided listening conditions (24). Concerns have been raised, however, regarding the efficacy of the APHAB for assisting in the clinical selection of amplification (25). Like word recognition measures, questionnaires may lack the sensitivity to differentiate between alternative adaptive, or digital, signal-processing strategies, and may serve simply as a vehicle to document that the user realizes some advantage of using corrective amplification and to organize the data gathered in a convenient way. The provider may wish to evaluate, prior to adopting them as part of his or her standard clinical protocol, the extent to which available questionnaires address issues related to user physical comfort, to time required by the user to achieve mastery of the product, to ease of insertion and removal, to battery life and ease of battery replacement, to cosmetic considerations, to product reliability, to ease of telephone use, to problems with feedback, and to other factors that the provider may view as critical to client acceptance, use, and satisfaction. Indeed, the suggestion has been offered that the communication benefit derived from hearing aid use is “extrinsic to the hearing aids themselves” and is determined by the noise and reverberation characteristics of the communication environment, the distance to the talker, and the characteristics of the communication partner (26).

Although the literature is extensive on the documentation of audiological status of the client that should

precede provision of a hearing aid, evaluation of the myriad nonauditory characteristics affecting the individual’s interest in, and acceptance of, amplification has been scanty at best. Considered in that context, the judgment, experience, and expertise of the provider may assume substantially greater significance in achieving user satisfaction than the merits, real or purported, of the product itself. In addition, clinical experience suggests client satisfaction with a given product may reflect the practitioner’s ability to identify characteristics, preferences, and limitations of the client and to select the product or products that meet his or her needs. Schweitzer (27), addressing hearing aid fitting in the context of private practice, suggested that hearing aid fittings may be enhanced by developing “some intuitive wisdom about the personality features that may contribute to greater success with a client” (p. 39). Perhaps it is our responsibility to develop more than an “intuitive wisdom.” Indeed, is it possible that client variables, such as cognitive status, the presence of a significant other in the home, and the demands on the person for communication efficiency are as critical, if not more critical, in determining hearing aid use and client satisfaction. If that is the case, then one’s role as a clinical provider is expanded to include identification of factors affecting the client’s active and positive participation in the adjustment process, and of the personality characteristics important to the client’s evaluation of the product, the process, and the provider. The expansion of the provider’s role dictates his or her assessment of the user’s communication environment and the user’s cognitive ability to utilize and to appreciate the benefits of corrective amplification. The expanded role is a more complex one, demanding that the provider be guided, but not restricted, by generally accepted clinical procedures.

Indeed, the clinical provider, faced with the daunting task of hearing aid selection, may adopt a position, likely to be regarded as heretical by hearing aid manufacturers and “measurement-driven” members of the audiology community, that the presence of significant hearing loss is not the *sine qua non* of hearing aid provision. The provider may choose to provide fewer individuals with personal corrective amplification and to restrict provision to those whose potential for satisfaction and whose demands for effective communication are the greatest. Perhaps one could increase the proportion of satisfied users were one more selective in identifying hearing aid candidates and more rigorous in limiting the instruments one is prepared to provide.

About 20 years ago, an analytic approach was proposed that sought to address and weight the factors of user motivation, self assessment of communicative impact, attribution of communication difficulty, age, user flexibility and adaptability, and dexterity in the prediction of client success with hearing aid use (28). Although the Self Assessment of Hearing Handicap has received subsequent attention (29), and has been used for the evaluation of hearing aid benefit, its implications for determination of hearing aid candidacy have not been explored.

The multiplicity of issues impacting on hearing aid use may have been too complex for the audiology community to address in a systematic way. In a recent special issue on hearing aids in *Ear and Hearing*, only one article was devoted to nonauditory measures to estimate the benefits provided by amplification (4). There is, however, encouraging evidence that researchers increasingly are addressing features other than peripheral auditory sensitivity in their assessment of auditory function, particularly in the elderly. That research is finding a forum in publications readily accessible to clinical providers (30–33).

There is an increased recognition of the impact of disruption in central auditory processing on the audiologic management of the geriatric person (34). A larger issue, perhaps, is the individual's overall level of function, cognitive ability, manual dexterity, and visual acuity. We have been cautioned to consider the "biopsychosocial variables" when deciding on the rehabilitation potential (i.e., candidacy) of an older hearing-impaired adult (35 p. 492). We similarly have been advised that the variability among aging persons must be considered and that counseling should be "tailored to the unique listening needs, skills and strategies of the individual" (36 p. 352). We have been in the position of relying on our observations. Formal assessments typically do not occur within the context of hearing aid selection and determination of hearing aid candidacy. Simple measures of cognitive status form part of the physician's clinical armamentarium (37), and are being applied in audiology research studies to establish eligibility of potential participants. Perhaps they should be an integral part of our clinical armamentarium as well.

The astute reader will recognize, of course, that no formulae or standardized protocols have been proffered for increasing client satisfaction and reducing breakdowns in the fitting process. Lest one be left with the impression that I consider the possibilities for generating an increased proportion of satisfied users of amplification an

unattainable goal, I offer the following approaches that have assisted me in developing an idiographic approach to hearing aid selection in the context of an independent audiology practice.

1. Cultivate relationships with other knowledgeable and experienced audiologists from other areas of the country who have experience with a broad range of products and are prepared to engage in a frank exchange of information regarding the merits and shortcomings of those products. Beware, however, the practitioner who emphasizes his or her success, admits to few failures, and devotes excessive discussion to the number of products dispensed and to his or her profit margin or bottom line.
2. Invest in software and hardware and in the educational preparation required to dispense a broad range of digitally programmable products. This capability may serve to restore excitement in the process of amplification selection and to examine critically and with minimum cost the assumptions underlying hearing aid fittings. The flexibility to alter a variety of electroacoustic characteristics and to engage the client actively in the process of selection and adjustment imbues that process with a degree of precision and professionalism previously unavailable.
3. Attend continuing education offerings and consult reference material to acquire information outside the audiology arena that may prove useful for understanding the physiological and psychological characteristics of the population served. Judgments regarding potential corrective amplification devices may be made more efficiently and expertly when considered within a general framework of information about the user and his or her similarly aged peers. For example, I have found the Merck Manual of Geriatrics (38) and texts by Whitbourne (39) and Kemp et al., (40) to be particularly valuable in placing the hearing impairment and its amelioration in suitable context for the aging adult.
4. Trust to your intellect and your experience to determine the products best suited to your client. Investigate the benefits of alternative approaches and discard adherence to procedures of questionable merit and validity. Question the pronouncements of experts and the hyperbole of advertising. Attend to the maximization of user satisfaction and user benefit, and limit the provision of products to those persons whose motivation, psychological status, and

environment make them suitable candidates for hearing aid use.

5. Provide clients with alternative sources of information about products and procedures so that they can assist in defining their specific requirements, needs, and preferences and are aware of the implications of their choices. Among the reference materials I have used are texts by Erber, Hays, and Shimon (41–43).

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