Mobility with Dignity:
a re-formation of the standard walker

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Abstract
As the population ages, the need for intelligent solutions to mobility concerns increases. Many existing products succeed in targeting the functional aspects of use but fail to address critical psychological and aesthetic elements in the design process. This thesis asks the question: can a walking device address concerns of dignity, beauty, and functionality?
Mobility with Dignity: a re-formation of the standard walker

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This thesis is submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Science in Architecture with a concentration in Industrial Design.

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This thesis is dedicated to the support and guidance of my family, friends, and committee members.
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Design 1975-2000

Century of Chair Design

Skin

Background and Research
As the world population ages, the need for intelligent solutions to mobility concerns increases. Currently, there exists a noticeable lack of collaboration between engineers and industrial designers during product development. This is evidenced by the overwhelming amount of visually sterile and emotionally off-putting assistive devices for the elderly and differently abled.

Many existing products succeed in targeting the functional aspects of use but they fail to address critical social elements in the design process. However retailers such as Target, have blurred the line between the specialty store and retail chain by employing architects and fashion designers to redesign everyday products, thus raising the bar on product design for the mass consumer. Consumers today are more design savvy than ever. They are exposed to a wide variety of choice in purchasing even the most mundane of items. This is not the case with assistive devices.

It is time for assistive products to follow current design trends. By the year 2030, the over 65 population in the United States will double to 66 million people. Designers and engineers must begin to work together to execute quality products that address the psychological and social stigmas surrounding many existing products. Through thoughtful choices in textures, materials, colors, and form, product design must begin to include assistive criteria.
Current, 13% of the population is over the age of 65. In 30 years, the 65+ population will double to 66 million people. Over age 85 is the fastest growing segment of the population.


Administration on Aging: Profile of Older Americans as of 2000

The population of persons over 65 numbered 34.5 million in 1999, representing 12% of the U.S. population, or nearly one in every eight Americans.

Since 1900, the percentage of Americans 65+ has more than tripled (4.1% in 1900 to 12.7% in 1999), and the number has increased eleven times (from 3.1 million to 34.5 million).

The older population itself is getting older. In 1999, the 65-74 age group (18.2 million) was eight times larger than in 1900. The 75-84 group (12.1 million) was 16 times larger and the 85+ group (4.2 million) was 34 times larger.


Figure One: Number of Persons 65+
1900-2000 (numbers in millions)
The coming generation of elders is more affluent and active than previous generations, making them a very attractive market to well-known companies such as Ford, Tupperware, and Whirlpool. Baby boomers’ real median household income is 35 to 53 percent higher than that of their parents. Reaching out to these aging customers has become a science in itself among marketing professionals. By the year 2020, the entire baby boom generation will be over 55. As the AARP (American Association of Retired Persons) points out, these 75 million aging baby boomers, and their children as they age, are likely to be very different customers from their parents and grandparents: “...products that offer youthfulness without denigrating aging will do well. These customers are not like their parents - they don’t feel that older is ugly”.


Connie Hallquist, CEO of Gold Violin, believes the aging of baby boomers and their parents likely will have the same effect on the senior marketplace that the children of boomers had on the children’s market. “Baby boomers are one of the most demanding generations commercially,” said Hallquist. “When they had children, look at all the advances in style and new technology that came along in strollers, toys, and things like baby monitors. As we begin to get older and care for our aging parents, there’s going to be that same demand. We come from a group that wants style and quality. They’re going to have a lot of disposable income. I think it will start a revolution.”

Can a walking device address the concerns of dignity, beauty, and functionality?

As supported by the aforementioned quotes, a new era in the design of medical equipment has begun to emerge. Purely engineered solutions, such as the standard walker, no longer suffice in meeting the needs of today’s user. These devices lack a critical aesthetic consideration and are presently overshadowed by issues of function. This thesis addresses the question: can a walking device address the concerns of dignity, beauty, and functionality?
ETHNOGRAPHIC RESEARCH
Interview Summary

**Location:** Heritage Hall Nursing Home, Blacksburg, VA  
**Description:** Long Term Care Facility  
**Participants:** Karrie Vogel, Physical Therapy Assistant  
Deborah Pizzi, Physical Therapy Assistant

**General Information**

There are two types of walkers: rolling (wheels) and four point (no wheels). A physician will prescribe a rolling walker for patients who fatigue easily and need extra assistance. A fourpoint is more stable as it has no ability to roll. Wheels increase the risk of falling. Most patients will use one type consistently.

**Common Modifications**

Walker accessories, such as baskets and gliders for feet, although desirable, are not covered by medicare. To compensate, many users place tennis balls over the rubber feet of the walker to reduce vibration and noise as they encounter particular surfaces and/or attach home-made fabric pouches to transport small items. Physical therapists often add weights to walkers to give users more confidence and control over their movements.

**Features**

Collapsibility of the walker is a desired feature for ambulatory patients as they enjoy the potential for storage and portability. This feature could be dangerous for patients with limited dexterity or dementia.

**Style**

The psychological implications of the physical appearance of a walker are significant. To quote one therapist, “no one wants to look like an old lady with a walker”. Improvement in form, material, and color should be considered.
Interview Summary Part Two: Results of Person to Person Interviews with Walker Users:

Location: Showalter Center, Warm Hearth Village, Blacksburg, VA
Description: Independent and Assisted Care Facility
Participants: 8 walker users: 7 female, 1 male
Activities Coordinator

General Information
Three women in the group used rolling walkers with seats. The rest used standard aluminum frame walkers, two with wheels, three without.

Reasons for Use
Increased stability over a cane
Relief of pressure on weakened or sore legs
Increased speed and ease of mobility or “making better time”

Storage
All users expressed need for storage or some means of transporting items. Six of seven users had a wire basket built in to the rolling unit or a basket or bag attached to the front of the standard unit.

It is often difficult for users to find items easily when using a hanging bag without compartments.

Items most commonly transported included food, drinks, and mail. Women expressed a need to store a handbag while shopping.

The group, as a whole, seemed impressed with the seating and storage capabilities of the higher-end models.

Final Thoughts
Most users agreed that improvements in style could be made. The group, as a whole, preferred the look of the rolling, wheeled walkers to the standard aluminum frame walkers.

Some felt an increased sense of independence by using a walker, while some resented being dependent on it to get around.
existing product analysis
Assistive products are of varying scale, from items to assist with everyday tasks such as eating and dressing (commonly referred to as ADL’s or assistive devices for daily living) to items which modify homes, providing access for the differently abled. The subject of this thesis is walking and mobility. Samples of mobility devices ranging from canes to shopping carts to walkers have been selected. Included here are canes ranging in quality and price based on choices in materials. The selection of canes below represent the standard cane constructed of extruded anodized aluminum tubing with a range of handle types. The leopard print cane and the red walking stick show a recent attempt by designers such as Pauline Trigere, a nonagenarian herself, that begin to address issues of style and dignity in the design of objects for seniors and the mobility impaired. As one can see in the range of products depicted here, aesthetics are beginning to factor into the design and construction of selected assistive devices.