

# Fear of flying, Assessment and Treatment issues

**In this article you will find a summary of his theses named “Fear of flying, Assessment and Treatment issues”. Seven of the nine chapters were also published as scientific papers, so the chapters can be read independently of one another or as elements of the book as a whole.**

By Lucas van Gerwen

From the beginning of civilization, humans have been looking up at the immeasurable expanse of sky. The crucial question has always been how to conquer this element, how to reach the sky without being injured or killed and return safely to the ground. It is apt for this thesis to be completed exactly 100 years after the brothers Orville and Wilbur Wright ushered in the age of flight. In the early years, flying was very exciting and not without risks. Today, commercial flying has become one of the safest forms of transportation, but it still remains exciting for many people. Fear of flying should be taken very seriously because an estimated 10 to 40 % of adults in the general population experience some type of fear in response to air travel. Although the residents of the Netherlands believed in 2000 that aviation had become safer in the last 5 years, approximately 2.5 million Dutch people still suffer in some way from fear of flying and one out of every seven adult Dutch men and women (14%) refuses to fly because of fear.

Before 1989, there was no specialized treatment facility and almost no scientific research conducted on this subject in the Netherlands. At the beginning of 1987, two parties came together, KLM Royal Dutch Airlines and the University of Leiden, to negotiate the necessary creation of a facility specializing in fear of flying

treatment and a scientific research center for this complaint. The agency became a joint enterprise of Leiden University, KLM Royal Dutch Airlines and Schiphol Airport Amsterdam at the end of 1989.



Using treatment protocols, this facility was developed under the name the VALK Foundation. The VALK Foundation is both an actual clinical facility and a scientific research institute. Today, in addition to the members of the Board, there are 23 people who work for this facility, of which eight are therapists and ten KLM pilots. The data reported in the thesis were obtained from participants assessed and treated at the VALK Foundation in Leiden, the Netherlands, from February 1990 to January 2003. All participants sought treatment for fear of flying and referred themselves to the VALK Foundation.

Chapter 2 describes how psychologists are at the forefront of helping health care professionals and airline passengers understand more about the onset, maintenance and resolution of fear of flying. Assessment and treatment methods have been studied and documented, and there are now several well-established programs available to people motivated to overcome their problem. The chapter describes how 212 airlines and treatment facilities were approached for information on treatment programs, 43 of which

were active in this field. Extensive information could be obtained from 15 comprehensive fear of flying treatment programs throughout the West, which were the best known and well developed. It provides insight into the facilities established around the world for treating passenger flight anxiety, often as a joint activity involving airlines and private entrepreneurs or mental health professionals. Participants agreed that fear of flying among passengers has epidemic proportions, effecting roughly 10%–40% of the adult population. The results show that all treatment programs have two basic elements in common: an information component and a test flight. The programs vary considerably in terms of additional treatment components. The conclusion is that there is a wide range of facilities for treating fear of flying in terms of methods and protocols used.

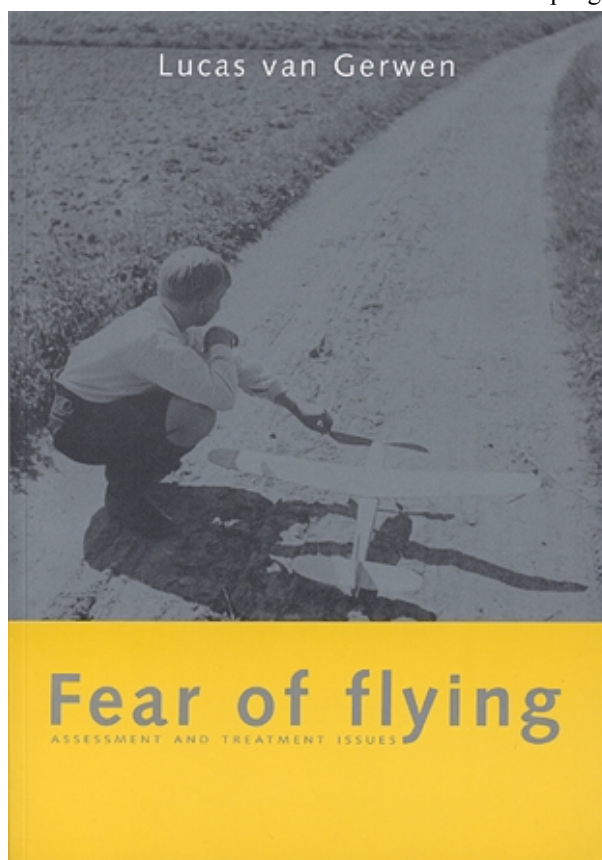
Chapter 3 specifically highlights two aspects of fear of flying: anxiety related to flying experienced in various situations and the symptom modalities in which anxiety in flight situations is expressed. This chapter presents the development, construction of and data on the dimensional structure, reliability and validity of two new inventories for assessing these aspects of fear of flying: the "Flight Anxiety Situations questionnaire" (FAS), which assesses flying-related anxiety experienced in different situations, and the "Flight Anxiety Modality questionnaire" (FAM), which measures symptom modalities in which anxiety in flight situations is expressed. Therefore two initial questionnaires were constructed from multiple sources. Analytic factor studies were conducted to assess their internal structure and the final versions were tested in a sample of 746 patients who experienced fear of flying. A Principal Components Analysis was used to assess the optimal dimensional structure in two randomly created sub samples. A three-factor solution for the FAS and a two factor solution for the

FAM were found. Internal consistency and test-retest reliability were good to excellent. Moderately strong correlations between the subscales suggest sufficient factorial specificity and convergent validity. The subscales proved to be sensitive to change. These questionnaires are now widely used. Besides being available in English and Dutch versions, they have also been translated into French, German, Hebrew, Korean, Portuguese, Spanish and Swedish.

Chapter 4 considers the type of people seeking help for fear of flying. The socio-demographic and clinical characteristics of patients who referred themselves to the VALK Foundation are described. Four specific subtypes of flying phobias were identified using homogeneity analyses to explore the association between flight anxiety and different types of phobia. The subtypes differed in terms of flight-anxiety level, age, sex, complaints like “fear of aircraft accidents, the need to have control over the situation or fear of losing control over themselves” and phobias underlying their fear of flying, such as claustrophobia, acrophobia, social phobia and symptoms of panic attacks. It is argued that the typology identified could have implications for selecting treatment components. This chapter describes the importance and specific relevance of assessment techniques for fear of flying, both for clinical practice and research.

Chapter 5 describes the standardized multimodal treatment program the VALK Foundation uses, explaining the specific stages and components used in a behavioral treatment approach. Multimodal dimensional behavioral treatment methods are among the most effective in helping people with fear of flying to cope with anticipated and actual negative experiences sometimes associated with flying. This chapter also presents the results of an uncontrolled evaluation of the

effectiveness of a two-day cognitive-behavioral group treatment (CBGT) program and a one-day behavioral group treatment (BGT) program. It explains the procedures and outcomes of the fear of flying facility’s well-established clinical program. It gives an assessment of the effectiveness of an actual facility program, in contrast to a program offered under controlled conditions in an academic setting. Results showed that both treatment programs produced statistically significant and clinically relevant decreases in self-reported anxiety and behavioural anxiety indices.



Chapter 6 addresses the prevalence of personality pathology among fearful flyers seeking treatment. Moreover, the effects of personality pathology on the results of the standardized, two-day cognitive-behavioral group treatment program were studied and are reported in this chapter. Studies have been inconclusive about the influence of personality pathology on treatment outcome in anxiety disorders. In general, it has been presumed that treatment outcome is negatively influenced by personality pathology. Personality

pathology was determined with a self-report questionnaire, which provides ICD-10 diagnoses of personality disorders and dimensional severity scores for personality pathology. Treatment outcome was assessed with three different fear of flying questionnaires. Based on clinical judgment after individual-case conceptualization, participants (N = 922) were assigned to a particular fear of flying treatment program. Self-report data for fear of flying were collected at pretreatment and at three, six and 12-month follow-up among 659 participants who completed the two-day treatment program. Moreover, the number of

flights taken in the year following treatment was determined. The results of this study showed that participants with personality pathology report greater fear of flying before treatment than participants without personality pathology. After treatment, fear of flying was significantly reduced. Presence of personality pathology was not predictive for the number of flights taken after treatment or the scores on the Visual Analogue Flight Anxiety Scale (VAFAS) scale in the short or long term. The degree of improvement of participants with personality pathology was less pronounced than that of participants without personality pathology on two questionnaires for fear of flying collected in the short term, although the extent of the differences between groups was relatively small. It was concluded that participants with personality pathology also benefited from fear of flying treatment and that the presence of personality pathology cannot be regarded as a contraindication for a standardized, cognitive-behavioral group treatment program (CBGT) in this study. According to self-efficacy theory, judgments and expectations concerning performance capabilities are relevant for the initiation,

persistence and modification of anxiety problems and specific fears.

Chapter 7 presents a study on the differential effects on self-efficacy expectancies of various treatment components in a fear of flying protocol. The treatment process was measured from assessment to follow-up at eight different intervals with two self-efficacy instruments based on Bandura's work (Bandura, 1977, 1986): the Flight Self-Confidence Scale (FSCS) and the Fear of Flying Coping Scale (FFCS). Fear of flying was assessed with three specific flight anxiety measures before and after treatment, the FAS, FAM and VAFAS. Results showed that the most effective treatment components for enhancing self-efficacy were (in descending order of importance): (a) exposure, graded practice with an in-therapy flight; (b) relaxation training with breathing exercises; (c) information about flying; and (d) controlling upsetting thoughts. The conclusion is also that performance experiencing particular enhanced self-efficacy.

Chapter 8 gives the results of a randomized controlled trial of the VALK Foundation's actual clinical practice. Participants (N = 150) were randomly assigned to a one-day BGT program, a two-day CBGT program, or a waiting list (WL) control group. After a diagnostic assessment phase, participants were randomly assigned to either a one-day behavioural group treatment (BGT) program, or a two-day cognitive behavioural group treatment (CBGT) program or a waiting list (WL) control group. A post-treatment flight on a commercial airline measured participants' ability to fly. Different self-report flight anxiety questionnaires were completed before, during and after treatment at

three, six and 12-month follow-up. Two behavioural measures were also compiled, consisting of whether participants participated in the guided commercial airliner return flight and the number of one-way flights taken at three, six and 12 months after group treatment. Results indicated that both treatments were superior to the WL, but also that the two-day CBGT program was significantly more effective than the one day BGT program in reducing subjective flight anxiety and enhancing self-efficacy. All 50 participants in the two-day CBGT condition and 49 participants in the one-day BGT condition took the guided in-therapy flight, while nobody in the WL group flew. After six months, everyone in both treatment programs had flown by themselves. The difference between the two treatment groups in the number of flights taken after six and 12 months was not statistically significant. Gains observed in the treatment conditions were maintained up to the one-year follow-up.

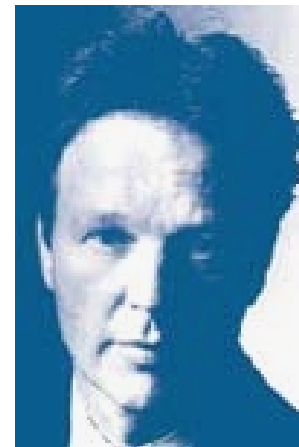
Chapter 9 provides a general discussion, a brief review of the main objectives of this thesis and conclusions from the various studies conducted. It integrates findings and provides their implications for theory and future research. A number of strengths and weaknesses of these studies is also discussed.

### References

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- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs, N.J.: Prentice-Hall.

### About the Author

This summer, Lucas van Gerwen received his PhD at the University of Leiden in social science for his thesis on fear of flying. Lucas van Gerwen is licensed as a commercial pilot (CPL) with Instrument Rating (IFR). He studied psychology at Utrecht University, is registered as a clinical psychologist NIP (Netherlands Institute for Psychologists), psychotherapist BIG (government register of Individual Health care professions), and an aviation psychologist registered with



the European Association for Aviation Psychology (EAAP). From February 1, 1990, to the present, he has been head of the VALK Foundation, a collaborative venture between the University of Leiden, KLM Royal Dutch Airlines and Amsterdam Airport Schiphol, whose aim is to help people overcome their fear of flying. The main goals of the foundation are to help prevent fear of flying, to provide a facility for helping those affected to overcome their fear and work with other organizations on developing their own programs. Scientific research in the fear of flying field is also a main goal.

If you wish to receive a copy of the thesis, please contact the VALK Foundation at [info@valk.org](mailto:info@valk.org) or via the website [www.valk.org](http://www.valk.org)

