

Abnormal Use of Personal Pronouns in Sign Language of Autistic Deaf Children

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Abstract: Abnormal use of personal pronouns is an important feature of autistic children's oral development. After comparing autistic deaf children with autistic children and deaf children respectively, it is found that pronoun avoidance also exists in the sign language development of autistic deaf children, but pronoun reversal rarely occurs. In pronoun avoidance, the sign language performance of autistic deaf children is more similar to that of autistic children than deaf children, which is more likely to be due to autistic children's own disorders than differences in language forms. Different from autistic children and deaf children, autistic deaf children have their own unique performance in pronoun reversal: palm reversal. The reason may be that the disorder of personal pronoun reversal in autistic children may have different performance due to differences in language forms.

Keywords: Autistic, Deaf children sign language, Personal pronoun, Pronoun avoidance, Pronoun reversal

1. Introduction

1943 Year, in the case description of 11 autistic children, Kanner first reported the abnormal use of personal pronouns of autistic children^[1]. Subsequently, more and more studies have proved that autistic children have difficulties in the correct use of personal pronouns, mainly manifested in avoidance and reversal of personal pronouns. Most of the researches on the personal pronouns of autistic children focus on oral English. However, people with autism are more likely to suffer from deafness or hearing loss than ordinary people. Rosenhall found in a study of 199 autistic children and adolescents. The subjects of 3.5% have binaural hearing loss or deafness, and the incidence rate is 30 times^[2] of the general population. Researchers also found that the incidence of autism in hearing impaired children is also high. Hearing impaired children of 5.3% also have autism spectrum disorders^[3]. For autistic deaf children, sign language is an important way of daily communication and communication. So will the abnormal use of personal pronouns in spoken language of autistic children also occur in the development of sign language? On the basis of comparing autistic deaf children's sign language with autistic children's spoken language and deaf children's sign language respectively, this paper sorts out the basic viewpoints and related researches on the abnormal use of personal pronouns in autistic deaf children's sign language, and also discusses the causes of similarities and differences, hoping to deepen the understanding of the use of personal pronouns in autistic deaf children's sign language, provide inspiration for early differential diagnosis and educational intervention of autistic deaf children, and promote the research on autistic deaf children's sign language.

2. Personal Pronoun Avoidance

2.1 Comparative Study of Autistic Deaf Children and Autistic Children

2.1.1 Personal Pronoun Avoidance Appears in Both

Autistic children often use names or other names instead of personal pronouns in speech expression. Jordan In a picture recognition task, a comparative study of 11 autistic children and 22 non-autistic children (ordinary children and

mentally retarded children) with matching language abilities found that 8 autistic children refer to themselves with names instead of first-person pronouns, and only 4 non-autistic children use names instead of pronouns in similar picture recognition tasks. Lee and others also found that 12 among autistic children 9 children would use names instead of pronouns to express themselves, while 12 among non-autistic children only 3 children did so, while autistic children with lower ability tended to use names to refer to themselves or experimenters [5]. when answering experimenters' questions. Dennis also found that the usage rate of personal pronouns of autistic children is lower than that of typical developmental children [6]. In a control experiment of a group of autistic children and typical developmental children (typical developmental children) In the theoretical research on the time self-awareness and psychological relationship of autistic children, Chinese scholars also found that autistic children use the first person " I " less often than ordinary children to refer to themselves, and replace them with their own names or nicknames, with a proportion as high as 71.4% , this result is also consistent with the research results of Lee. [7]

In order to determine whether pronoun avoidance also exists in sign language expression of autistic deaf children, some researchers have studied 14 autistic deaf children who have used sign language since childhood. On the basis of Jordan, and Lee picture recognition tasks. The results show that in the first person test, only 5 names of 14 autistic deaf children who use sign language have first person gestures pointing to themselves, and 9 names all use sign language names or spell their names with finger language to express themselves. In the second person test, pronouns were used by 7 autistic deaf children, and 7 children, 3 children used sign language names or English names of spelling experimenters to refer to experimenters, 4 children used " man " " doctor " and other nouns to refer to experimenters [8]. This phenomenon also echoes the interview results of mothers of autistic deaf children. Shield and colleagues recorded the abnormal use of sign language pronouns in autistic deaf children in interviews. For example, the mother of a deaf child with autism said that his son probably learned to use pronouns at the age of 4 or 5 . Sometimes he pointed to himself, but sometimes he spelled out his name in sign language. The two methods often use "alternately. " When he mentions us, he tends to spell our name. If he can spell 'Mommy' , His brother's name and his own name. He seldom uses directional gestures to communicate with us. Pronoun gestures also appear in certain occasions. For example, when fighting with his elder brother, he will point to his elder brother and shout ' You Wrong' [9].

2.1.2 Discussion on the Reason of Similarity

Although personal pronouns in sign language have obvious indicative characteristics, autistic deaf children still have the same problems as hearing autistic children in sign language expression, which to some extent indicates that pronoun avoidance in autistic children is not due to arbitrariness of spoken pronouns, but is closely related to autism's own disorders. Jordan speculated that this phenomenon may be related to parents' language input. Parents may use more names [10]. In order to better communicate with autistic children in daily life. Lee and others attribute the phenomenon of pronoun avoidance in autistic children to the difference of autistic children's self-concept (self-concept), and believe that the lag of self-concept formation will affect the use of autistic children's personal pronouns [11]. In addition, Shield and others found in experiments that autistic deaf children with higher sign language ability also showed better pronoun use ability. Therefore, he believes that the phenomenon of avoidance of personal pronouns in autistic children is not only related to children's self-representation but also depends on children's overall language development level. [12] In the subsequent experiments on autistic deaf children, they further proved that the language development of autistic deaf children, whether in spoken language or sign language, is closely related to the development of psychological theory, and believed that although the early language environment of sign language is quite important for the language development of autistic deaf children, it is not enough to completely overcome the influence of autistic deaf children's own disorders on sign language use. [13]

2.2 Comparative Study of Autistic Deaf Children and Deaf Children

In the above picture recognition task, the researcher further classified 6 as the autistic deaf child with the highest score (the average original score was 27.8) and 6 are the deaf children with the lowest scores (average original score 28.0) and found that the performance of the two groups of children in the first person task is similar. Specifically, 3 autistic deaf children and 3 deaf children use first-person pronouns, while 2 autistic deaf children and 1 deaf children use both personal

pronouns and names, 1 autistic deaf children and 2 deaf children do not use first-person pronouns. However, in the second person's statement, there was a significant difference in the performance of the two groups of children. In the autistic deaf children group, 3 children use pronouns to express themselves alone, 1 children use pronouns and names to refer to experimenters at the same time, 2 autistic deaf children only spell the names of experimenters, while 6 deaf children all produce second personal pronouns. Therefore, even if the language level is relatively matched, autistic deaf children still produce fewer second personal pronouns than deaf children, and the avoidance degree is higher than deaf children. However, due to the small number of children in the study, the difference has not yet reached a significant level. In addition, when children are presented with pictures of themselves and asked “ who is this ”, deaf children often laugh and point at themselves again. However, even when autistic deaf children correctly use pronouns to answer questions, they do not have any expression. A comparative experimental study of a group of autistic deaf children and deaf children found that, compared with deaf children, autistic deaf children have greater difficulty in understanding facial expressions. At the same time, research also shows that facial expression recognition difficulties of autistic children may have some influence on the understanding of sign language^[14] when autistic deaf children use names instead of personal pronouns to describe themselves or the pictures of experimenters, they are more like a third person describing them relatively independently, showing certain separation characteristics. In contrast, deaf children showed their identification with themselves and the experimenter in the picture recognition. The difference in pronoun avoidance between deaf children with autism and deaf children further reflects the influence of autism's own disorder on pronoun use in autistic children.

2.3 Summary

Autistic children often avoid personal pronouns in oral expression. The specific way of avoidance is to refer to themselves with names or nicknames. Autistic deaf children also avoid personal pronouns in sign language expression, and the specific way of avoidance is similar to autistic children, i.e. spelling their own names with finger language or expressing themselves with sign language names. At the same time, compared with deaf children, autistic deaf children have a higher degree of avoidance of personal pronoun gestures and lack corresponding facial expressions, although deaf children have the phenomenon of personal pronoun avoidance, they all appear in the control experiment with autistic deaf children, and lack the pronoun avoidance research with deaf children as the main body. Through comparison with autistic children and deaf children, the article holds that the specific performance of the avoidance of personal pronouns in sign language for autistic deaf children is more inclined to autistic children than deaf children, and the main reason is more likely to come from the disorder of autistic deaf children themselves than the linguistic difference between spoken language and sign language.

3. Reversal of Personal Pronouns

“Pronoun Reversal” Is another significant feature in language use of autistic children. In general, autistic children describe themselves as “you” and the object of conversation as “I”, which indicates that they have difficulty in changing the dialogue roles between the speaker and the listener during communication, and reflects that autistic children have problems in conceptualizing the concepts of themselves and others.^[15]

3.1 Comparative Study of Autistic Deaf Children and Autistic Children

3.1.1 Reversal Common in Spoken Language of Autistic Children

In the case of Kanner, it was reported that an autistic child only repeated the personal pronouns he heard and would not change the use of pronouns according to the change of situation. If his mother says “I will give you a glass of milk”, he will repeat the same words to express his desire for milk. Therefore, he often uses “you” to refer to himself and “me” to refer to each other. Another child has the same phenomenon. When he wants to take off his shoes, he will say to his mother, “ Take off your shoes” when he wants to take a bath, he will say “ Do you want to take a bath? ” Children in the Fourth Case and Paul seldom use the first person and often use the second person to refer to themselves. If his hand is scalded by the radiator, he will say “ Your hand is scalded”^[16]. Bosch and subsequently also indicate that autistic children misuse “ You ” and “ ME ”.^[17] The interview results with teachers also show the existence of pronoun reversal

in autistic children, Lee and others asked “ in interviews with teachers who are familiar with the participants, Are there any difficulties for children to understand and express personal pronouns at present? Both teachers said that 25 had 17 among autistic children ^[18] had misused personal pronouns in daily life, but this phenomenon did not exist among non-autistic children matched with their psychological age. Tager Flusberg and are also recording 6 name 3—9 autistic child 1673 spoken pronouns. The error rate of pronoun reversal is found to be 13.15% ^[19]. In order to assess the proportion of pronoun reversal between autistic children and typical developmental children, Cheng and others followed 10 autistic children and 18 typical developmental children for two years every four months. Every observation, children will play 30 minute semi-structured game with their parents. Children's spontaneous language is encoded into first-person and second-person pronouns, and whether each pronoun is correct or inverted. The results show that the percentage of pronouns used by the two groups of children is also different in different observations. With the increase of age, both groups have strengthened the use of pronouns. The change of pronoun reversal is mainly reflected in specific personal pronouns. In such as observation 1, autistic children use “ I ” instead of “ You ” more. However, in observing 3 and 5, more “ You ” replaces “ I ”. On the contrary, the typical development children in observation 1 use “ You ” instead of “ I ” more. However, in the observation of 3 and 5, “ I ” replaces “ You ”. Autistic children have more pronoun reversals than typical developmental children, and in the reversal, “ you ” describe yourself ^[20] is more commonly used. A recent study also shows that the proportion of pronoun reversal in autistic children is significantly higher than that in typical developmental children. ^[21]

Different researchers have different explanations for the phenomenon of reversal of personal pronouns in autistic children. Kanner first proposed the phenomenon of pronoun reversal in autistic children and then explained it with echoic speech and imitation. However, this conclusion was questioned in subsequent studies. Dale and others found negative correlation between imitation and reversal rate after studying 30 children. The case of Demuth also shows that a large part of the reversal of personal pronouns is non-imitative. With the rise of cognitive research in psychology, the phenomenon of pronoun reversal is more and more inclined to be interpreted as a specific cognitive impairment. From a general view of the cognitive theory on pronoun reversal, we can find that the core lies in the lack of the ability to understand the relationship between self and others. The discussion focuses on the damage of autistic children's psychological theory. ^[22] At present, no consistent conclusion has been reached on the reasons for the reversal of personal pronouns in autistic children, and the reasons and specific situations for the reversal of personal pronouns in autistic children still need to be further elaborated.

3.1.2 Reversal is Rare in Sign Language for Autistic Deaf Children

Although pronoun reversal is a characteristic of language development disorder in autistic children, relevant studies show that this characteristic is relatively rare in autistic deaf children. In a group of autistic deaf children and deaf children's comparative experiments, the experimenter first presents the child's own photos through iPad and asks “ who is this? ”. Then present the photos of the experimenter again and ask the same question. The result shows that there is no phenomenon of pronoun reversal in children. Although the age of the children in the experiment (3—9 years) may exceed the age of observing pronoun reversal, the experimenter thinks that pronoun reversal may be more related to language development ability than age. The study found that some hearing autistic children with low language ability may have pronoun reversal until the age of 9. ^[23] Therefore, researchers believe that autistic deaf children and autistic children with pronoun reversal in the experiment are comparable to some extent. After encoding the 393 sign language pronouns produced by 16 autistic deaf children, researchers found that there are only two possible pronoun reversals, and both occur in echoic speech. This is very different from the incidence of reversal of spoken personal pronouns in autistic children mentioned above. ^[24] later research on echogenic gestures of autistic deaf children also provided evidence for this. Researchers recorded and coded echogenic gestures of 17 autistic deaf children in a series of tasks through video. After analysis, it was found that there were 19 echogenic pronoun gestures, accounting for 13% of all echogenic gestures. Only one of the 19 echogenic pronoun gestures 180° reversed. Researchers believe that this is not sufficient evidence for pronoun reversal in autistic deaf children. Pronoun reversal in autistic children's spoken language is often more often expressed as referring to oneself with a second person and less as referring to others with a first person. In addition, it is not representative that only one child has a gesture of pronoun reversal. ^[25]

3.1.3 Discussion on Reasons for Differences

Reversal of personal pronouns is rare in sign language for autistic deaf children. Some researchers believe that there may be different manifestations in sign language due to the defect of reversal of spoken personal pronouns: palm reversal. A lack of understanding of the relationship between self and others may cause autistic children to copy gestures from their own perspective instead of others. An outward gesture may be imitated by autistic children as an inward gesture, and vice-versa. Autistic deaf children seldom have the phenomenon of personal pronoun reversal in sign language expression, probably because the reproduction of gestures observed from the perspective of children produces the correct pronoun, and the real pronoun reversal in sign language should be manifested as children pointing to themselves when expressing “ You ”. In the interaction between 4 autistic deaf children and teachers and parents, researchers observed 30 minutes respectively, and observed 4 deaf children in structured tasks, and transcribed and encoded the recorded gestures as palm-oriented, hand-shaped, position and movement pattern. In the transcription of sign language samples, it was found that all children did not show any reversal of personal pronoun gestures, but all autistic deaf children showed palm reversal, and the reversal directions were not consistent, but deaf children did not show any palm reversal. Researchers speculate that autistic children's own social and cognitive deficits will lead to different language effects of visual gesture language, and believe that palm reversal and oral pronoun reversal are closely related.^[26] Previous studies have also shown that autistic deaf children have volar inversion, especially volar inversion inside and outside. In natural observation, Spelling of finger language and imitation of meaningless gestures and other tasks, 6 All autistic deaf children have made mistakes in palm orientation reversal. Different subjects with different backgrounds and different tasks have palm orientation errors, which indicates that palm orientation reversal may be an important feature of sign language for autistic deaf children, and this is consistent with the research results on gesture imitation for autistic children.^[27] Chinese scholars found in the experimental study of the autistic children's hand posture imitation ability that when the demonstrator's palm is facing outward, the autistic children's imitation action is that the palm faces itself, and by this direct displacement imitation, the “palm outward ” of others is transformed into its own “palm inward”, maintaining the consistency with the orientation of others^[28]. Interviews with mothers of autistic deaf children also confirmed the phenomenon of gesture palm reversal. In the interview, both mothers said that when their son expressed the gesture of “ water ”, there was a phenomenon of palm reversal . Even though some sign languages have strong iconicity, autistic deaf children will still make mistakes in reversing the direction of gestures. For example, a mother said that even though the gesture “ bird ” has strong iconicity, her son will still use the reversed direction to express the gesture “ bird ” ,and the reversal of gesture direction just hides the iconicity^[29]. Experiments on finger spelling tasks of autistic deaf children and deaf children also provide evidence for them. The experiment provided 10 different English words for all subjects, and the subjects spelt the finger language. The experimental results showed that 3 autistic deaf children had palm direction reversal errors, especially internal and external direction reversal, while 12 deaf children did not have palm orientation reversal errors.^[30] The disorder causing pronoun reversal in autistic children may have different manifestations due to different language forms, and whether this disorder is due to the lack of understanding of autistic children's self-relationship with others still needs a lot of research results to support it.

3.2 Reversal of Personal Pronouns in Deaf Children

The phonetic form of personal pronouns in spoken language has no obvious hint to the objects represented by pronouns, but the personal pronouns in sign language are not composed of any symbols, but clearly indicate the intended objects with gestures through the indicating points of themselves and others . Although sign language is relatively clear in the expression of personal pronouns, there are still studies showing that deaf children have the phenomenon of personal pronoun reversal. Petitto and report that two deaf children who have used sign language since birth mistakenly used a second personal pronoun to express themselves at the age of 21—23. In the case, Kate and want to put on their hats, they will use sign language to indicate “ youwant ” instead of “ mewant ”. She would point to herself who was eating in the photo and say to the experimenter “ you are eating ”, but in fact the experimenter did not appear in the photo.^[31] Jakson reported that a normal hearing child (whose parents are deaf) who used sign language since childhood used the first person “ MINE ” instead of the second person “ YOURS ”^[32] at the age of 21—24 ” 1990 Year, Pizzuto, Reported a Deaf

Child Misusing 15—20 Months “ ME ” Representing “ You ”^[33]. But not all deaf children will go through this stage, Hatzopoulou No mistakes in pronoun use have been found in the study^[34]. Although the above researchers pointed out that deaf children have the performance of personal pronoun reversal, it is not difficult to find that the age of reversal is basically concentrated before the age of 2 , and the occurrence time is similar to that of ordinary children. The process of mastering ordinary children's pronouns usually follows a specific sequence, i.e. mastering the first personal pronoun “ I ” about 18—22 months, and then mastering the second personal pronoun “you”^[35] about 22 months In addition, no reversal of personal pronouns was found in the above-mentioned autistic deaf children and deaf children's controlled experiments. At present, there is little research on the personal pronouns of deaf children, so it is difficult to make a comprehensive and in-depth comparison.

3.3 Summary

Personal pronoun reversal is one of the manifestations of language development disorders in autistic children. Pronoun reversal lasts for a long time and has individual differences in reversal direction, but it is more concentrated on referring to oneself by the second person name. Although deaf children have also experienced the reversal of personal pronouns, the reversal age is within the normal development level of personal pronouns, and there are few records on the reversal of personal pronouns of deaf children. In the control experiment and natural observation of autistic deaf children and deaf children, no reversal of personal pronouns was found in either of them. But it is worth noting that autistic deaf children have reversed palm direction, and the reversed direction also has individual differences, and this phenomenon is rare among deaf children. Therefore, autistic deaf children are different from autistic children and deaf children in the specific performance of personal pronoun reversal, and have their own unique performance, namely palm reversal. However, whether the cause of palm reversal in autistic deaf children is the cause of oral personal pronoun reversal in autistic children or whether there is a close relationship between the two needs to be clarified through subsequent research.

4. Summary and Enlightenment

4.1 Summary

Through a simple comparison of the personal pronouns of autistic children and deaf children, it is not difficult to find that the use of sign language personal pronouns of autistic deaf children is not only similar to the spoken language of autistic children and deaf children's sign language, but also has certain differences. From the initial discovery of the characteristics of sign language personal pronouns for autistic deaf children, to the comparison with autistic deaf children and deaf children, and to the exploration of the underlying causes and mechanisms, the research content has been continuously enriched, the research methods have been improved day by day, and the understanding of sign language personal pronouns for autistic deaf children has been further deepened, and specific. First, in the study of personal pronoun avoidance, the sign language of autistic deaf children shows similar characteristics to the spoken language of autistic children, i.e. the phenomenon of personal pronoun avoidance occurs in both. The discussion of the reasons mainly focuses on the development of autistic deaf children's self-concept and language level. Although the phenomenon of avoidance of personal pronouns has also been found in the control experiment between deaf children with autism and deaf children, there is no corresponding explanation for this. Considering that the reason for pronoun avoidance of autistic deaf children is not clear, it is necessary to study it in combination with the core disorders of autistic children. At the same time, most researches on personal pronoun avoidance of autistic deaf children are based on experimental conditions and lack of researches on natural environment, and artificial experimental tasks may affect the experimental results to some extent. Therefore, future research needs to examine the phenomenon of pronoun avoidance in a natural environment in order to obtain more real results. In addition, since parents' language input is related to the avoidance of spoken personal pronouns in autistic children, will it also affect the sign language performance of autistic deaf children? Compared with spoken language, personal pronouns in sign language communication are more likely to be omitted, so future research should also strengthen the study of parents' language input and the pronoun avoidance relationship of autistic deaf children. Is the degree to which autistic deaf children use facial information in sign language expression related to personal pronoun avoidance? Will it affect the use of personal pronouns? If there is an impact, the degree of impact is also worth further

research through experiments.

Second, in the study of personal pronoun reversal, pronoun reversal is a prominent feature of autistic children's spoken language development. There are occasional pronoun reversals in deaf children's sign language development, but they are rare. The age of occurrence is mainly before the age of 2, which is similar to that of ordinary children. Autistic deaf children also have less or no pronoun reversal phenomenon, and instead have palm reversal. Whether it is the pronoun reversal of autistic children or the palm reversal of autistic deaf children, the reason is inclined to be interpreted as the obstacle of understanding the relationship between self and others. Although some researchers have suggested that the disorder causing the reversal of spoken personal pronouns in autistic children may have different manifestations in spoken language and sign language, there is still not enough theory to fully explain this. At the same time, the current control group for pronoun reversal research on autistic deaf children is mainly deaf children, lacking direct comparison with autistic children, which may be an important way to deeply explore the specific causes of palm reversal and individual differences of autistic deaf children. In addition, since the sign language palm reversal phenomenon of autistic deaf children is similar to that of autistic children's gesture imitation research results, the two can be studied together.

Third, in the overall study of personal pronouns in sign language for autistic deaf children, it is found that foreign studies have begun to deeply explore the relationship between sign language for autistic deaf children and psychological theory and cognitive mechanism on the basis of the phenomena of pronoun avoidance and palm reversal. At present, there is little research on autistic deaf children in our country, especially on sign language of autistic deaf children. Therefore, we should find and pay attention to the cases of autistic deaf children in our daily life, pay attention to the localization of empirical research on autistic deaf children while absorbing and learning from foreign research results, and pay attention to the comparison with autistic and deaf children to promote the development of language education for autistic deaf children.

4.2 Inspiration

Through the study of the sign language personal pronouns of autistic deaf children, the following enlightenment can be drawn for the education of autistic deaf children: First, in the early identification process of autistic deaf children, on the one hand, the above-mentioned picture identification test can be included, and attention should be paid to the observation of children's expressions in the test, so as to provide reference for judging whether children's self-perception development is abnormal; on the other hand, teachers and clinicians should make it clear that unlike autistic children, autistic deaf children seldom have the phenomenon of reversal of personal pronouns in sign language expression, so in daily observation, especially when comparing with deaf children, they should focus on whether children have the phenomenon of palm reversal (especially the phenomenon of — outward reversal) Secondly, in the education and intervention training of autistic deaf children, we should not only consider the characteristics of sign language itself, but also learn from oral teaching experience, and pay more attention to the role of visual support. Specifically, from the perspective of sign language, teachers and parents should try their best to sit side by side with autistic deaf children instead of face-to-face for educational intervention. Previous studies have shown that sitting side by side is conducive to reducing imitation errors caused by autistic children in face-to-face mode ^[36]. Starting from oral language teaching experience, ^[37] can be used to refer to individuals by name in the training process. After a period of training, when children have a fixed impression of the relationship between names and people, then personal pronoun gestures are added after names, and gradually transition to referring to individuals directly by personal pronouns. From the perspective of visual support, teachers should strengthen the use of facial expressions in sign language teaching for autistic deaf children, because Denmark and others have confirmed the importance of facial information in sign language understanding for autistic deaf children through facial masking experiments. ^[38] Finally, the concept of individualized difference should be really deepened into the language education of autistic deaf children, the different expressions of sign language personal pronouns used by different children should be paid attention to, and the analysis and research on different sign language expressions of autistic deaf children, and deaf children should be further refined. Based on this, more targeted language rehabilitation strategies should be put forward to take the path of physical development of language rehabilitation.

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