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# Applications of French Phonetics to Flute Playing: A Historical Perspective

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#### Abstract

When people speak, they shape their mouths differently for different languages. It follows, then, that there are inherent differences in flutists' playing based on their native language. In the case of teaching syllables—syllables that the flutist "says" while playing in order to achieve a certain articulation or embouchure formation, such as "tu"—this can become confusing. Therefore, it is important for flutists to study the pronunciation systems of foreign languages, in order to know how to correctly produce teaching syllables used by flutists and teachers of other cultures. Flute pedagogy has a strong French tradition, and many modern day, American, English-speaking flutists still use translations of historical French treatises, so studying French pronunciations is a good place to start. The treatises used in this study are standards, including those by Jacques-Martin Hotteterre, Michel Corrette, François Devienne, Jean-Louis Tulou, Paul Taffanel, and Michel Debost. These publications span almost three centuries collectively, from the early 1700s to the 1990s, but regardless of the age or author of the treatise, the teaching syllables are almost never translated from the original French. Because of the lack of translation, American, English-speaking flutists pronounce the syllables quite differently from what the French teachers would have expected. This study seeks to use phonetics to compare the French pronunciation of these syllables to the English approximation. In addition to historical context and phonetic analysis, practical applications of these syllables to flute playing are provided, as well as some exercises for English-speaking flutists who wish to acquire these French pronunciations.

#### Research Process

In the Fall of my sophomore year, I took a French class that was all about phonetics, hoping to improve my spoken French through gaining a more precise knowledge of how to pronounce certain sounds in French. My speaking did improve, but the class gave me an idea for something even bigger: a cross-discipline project, in which I would study how speaking French could help improve one's flute playing. This idea stemmed from the fact that my textbook, *D'accord: La Pronunciation du Français International Acquisition et Perfectionnement* by Sylvie Carduner and M. Peter Hagiwara, frequently used language reminiscent of that which I encountered every day in my music classes—rhythm, pitch, and articulation—as well as diagrams and descriptions of mouth shape and tongue position that reminded me of something that a highly technical flute teacher might use.

As my project took shape, I decided that I should focus my study specifically on the teaching syllables used in historical French treatises and how they might be pronounced differently by native English-speakers than by native French-speakers. To do this, I studied the sections dealing with articulation and tone production or embouchure formation in eight treatises by seven famous flute pedagogues: Jacques-Martin Hotteterre, Michel Corrette, François Devienne, Jean-Louis Tulou, Paul Taffanel, Michel Debost, and Johann George Tromlitz (I wanted to include this German flutist because of his importance to flute pedagogy and for contrast). Fortunately, the Lucile Caudill Little Fine Arts Library had English translations of all of these treatises available for me to check out. Had I not had access to these publications through the library, I would have had to purchase them myself, which would have been extremely expensive. In addition, some of these treatises would have been very difficult to find without the library, and others may even be out of print.

While reading through these teachings, I took notes on which syllables flutists recommended for various elements of flute playing. There was quite a bit of variation between the seven teachers; some preferred "tu" for a clean articulation and a clear tone, others liked "du" for a legato articulation, still others were strongly against "tu" and "du" but recommended "ti" and "di." I also discovered that many of these teachers wrote about "ti ri" or "tu ru" for double-tonguing—an idea that seems bizarre to English-speaking flutists, who usually teach "tuh kuh" or "doo goo" for this skill. After compiling notes on the treatises, I compared the graphemes, or written letters, of the teaching syllables to their respective phonemes, or symbols representing sounds, in *D'accord* in order to analyze the correct French pronunciation of each syllable. I then compared the correct pronunciations to the possible English approximations.

After establishing how each teaching syllable could be pronounced differently in English and French, I experimented with the French versions of these syllables in my own playing, and Dr. Hobbs, the flute professor at the University of Kentucky and my faculty mentor for this project, asked other members of the UK Flute Studio to experiment with them as well. We found that consciously trying to produce the French version of the teaching syllables contributed significantly to many facets of flute playing, from tone color changes to octave jumps to resonance in each register. In order to put some of these findings to practical use, Dr. Hobbs checked out some pieces by the flutists I studied, as well as other French composers, using interlibrary loan. I also used Naxos Music Online, a database available through UK Libraries, to listen to recordings of some of the authors of the treatises I studied, as well as flutists who were their students. I tried to listen extra closely to the elements that I had discovered the French teaching syllables improved and compared them to the American flutists I am used to hearing

every day. Some of the recordings on Naxos are not available on other websites, such as Youtube, so it was very helpful to have access to that database.

In addition to discussing the history, correct way to pronounce, and the applications to flute playing of each syllable, I also included detailed information on how the mouth shape differed from the English approximation of each syllable. For the syllables that are more difficult for English-speakers to produce, I presented both playing and speaking exercises to help with the acquisition of these French sounds. Some of these exercises were quoted from *D'accord*, and some were of my own invention. I hope that including exercises will help other flutists understand my research even better. In order to show my research to other flutists, I have presented this research to the UK Flute Studio, and I have been invited to present it at the Flute Society of Kentucky annual conference. I also plan to submit my research for presentation at other conferences and for publication in two flute journals.

In general, the research process was exciting, engaging, and informative for me. It helped me connect two of my interests and study aspects of each with which I was previously less familiar. Without the ability to check out treatises from the UK Lucille Caudill Little Fine Arts Library, to listen to recordings on Naxos Music Online, and to check out music through interlibrary loan, this project would have been much more expensive and much more difficult, if not impossible.

The Applications of French Phonetics to Flute Playing:

A Historical Perspective

Mary Margaret Zrull

#### **Introduction and Historical Context**

The pedagogy surrounding embouchure for the flute is doubtlessly a subjective and widely varied topic, whether it is a question of articulation, tone color, register changes, or one of countless other subjects related to mouth shape. It sometimes seems as if a flutist could take lessons with a hundred different teachers and each would have their own syllable used to teach the exact same element of flute playing-- and this might concern only American English-speaking flutists! Learning about and teaching flute playing within the scope of a foreign language provides even more syllables that can be used to teach articulation, tone color, and various other elements of playing. As Michel Debost writes in *The Simple Flute: from A to Z*, "Learning a foreign tongue or two opens one's mental scope; for a musician, and particularly for a flutist, it is a charming and helpful tool for articulation and for natural phrasing" (27).

While there is, very literally, an entire world of languages available for study and application to flute playing, French is one of the most beneficial languages for flutists to use in this manner. Any language would provide unique syllables to be used in various nuances of flute playing, but the history of flute playing and teaching is deeply rooted in French language and culture. From Jacques-Martin Hotteterre's invention of the one-keyed flute, to 18th- and early 19th-century flute tutors, to the Paris Conservatoire, France is a good place for flutists to start when examining foreign languages.

According to Paul Marshall Douglass in his translation of Hotteterre's *Principles of the Flute, Recorder, and Oboe*, "It would indeed be difficult, if not impossible, to study the history of the development of the flute without considering... The *Principes de la Flûte* by Jacques-

Martin Hotteterre." Jacques-Martin Hotteterre was a court musician for Louis XIV during the late 15<sup>th</sup> and early 16<sup>th</sup> centuries, and he played both flute and oboe. He came from a prominent family of instrument makers and was regarded as the best musician in the family<sup>2</sup>. He is credited with the invention of the one-keyed flute. Any study of French flute teaching would be incomplete without *Rudiments of the Flute, Recorder, and Oboe*, originally published in 1707, since its author made such a crucial development to the flute.

Later in the 18<sup>th</sup> century, two important treatises were published. The first is Michel Corrette's *Method for Easily Learning to Play on the Transverse Flute*. Little is known about Corrette's life, but his compositions and methods are informative regarding 16<sup>th</sup> century performance practice. Corrette was an organist, composer, arranger, and teacher, and he wrote treatises for many instruments, including organ, harpsichord, violin, viola, cello, contrabass, guitar, harp, oboe, bassoon, flute, and voice.<sup>3</sup> The dating of his flute method is somewhat unclear, but the date used in Carol Reglin Farrar's translation and discussion is 1741. At this point in the century, Corrette would have been writing about a German flute, still with only one key.<sup>4</sup> Around fifty years later comes François Devienne's *Nouvelle Méthode Théorique et Practique pour la Flute*, which was written in 1794, during the French Revolution. At this time, Devienne performed on both bassoon and flute for the Paris Opera, and composed *opèra comique*, as well as chamber music and orchestral works<sup>5</sup>. His flute treatise has been reprinted

<sup>&</sup>lt;sup>1</sup> Jacques Maritn Hotteterre, *Principles of the Flute, Recorder, and Oboe,* trans. Paul Marshall Douglass (New York: Dover Publications, 1968), VII.

<sup>&</sup>lt;sup>2</sup> Tula Gianni, "Hotteterre Family," *Grove Music Online*, (14 Mar. 2018).

<sup>&</sup>lt;sup>3</sup> David Fuller and Bruce Gustafson, "Corrette, Michel," *Grove Music Online*, (14 Mar. 2018).

<sup>&</sup>lt;sup>4</sup> Michel Corrette and Carol Reglin Farrar, *Michel Corrette and Flute-Playing in the Eighteenth Century* (Brooklyn: Institute of Medieval Music, 1970), 14.

<sup>&</sup>lt;sup>5</sup> William Montgomery, "Devienne, François," *Grove Music Online*, (14 Mar. 2018).

and translated many times since its original publication, with commentary from other important flutists and scholars, such as Thomas Boehm and Philippe Gaubert. <sup>6</sup>

The last three treatises examined in this paper were all written by flute teachers who worked at the Paris Conservatoire. The first, A Method for the Flute by Jean-Louis Tulou, was written in 1851. Tulou attended the Paris Conservatoire, winning its first prize for flute at the age of ten. He was the principal flutist of the Paris Opera from 1815 to 1822, but he had some difficulties with employment under Louis XVIII, for political reasons. In 1829, he was appointed flute teacher at the Conservatoire, where he taught until 1856. Nearly forty years after Tulou retired from the Paris Conservatoire, Paul Taffanel was appointed. Taffanel taught at the Conservatoire from 1894 to 1908, and he also worked as a conductor starting in 1892<sup>8</sup>. Although the 17 Daily Exercises are most well-known, the entirety of Methode Complete de Flute, written by Taffanel and completed for publication in 1923 by his student Philippe Gaubert, remains an invaluable resource for flutists. The last, and most recent, method discussed in this paper is Michel Debost's *The Simple Flute*. Debost taught at the Paris Conservatoire in the 1980s, and he published *The Simple Flute* in 1996. *The Simple Flute* offers a unique perspective that is very useful to this project, because Debost has experience teaching both French- and Englishspeaking flutists.

It is undeniable that a large body of flute resources come from France and that these works are just as useful to English-speaking flutists as they are to French-speaking flutists.

However, it is not enough to just read the translations of these treatises. To make good use of the

<sup>&</sup>lt;sup>6</sup> François Devienne, François Devienne's Nouvelle Méthode théorique Et Pratique Pour La Flute: Facsimile of the Original Edition, with an Introduction, Annotated Catalogue of Later Editions, and Translation, trans. Jane Bowers (Brookfield: Ashgate, 1999), 14.

<sup>&</sup>lt;sup>7</sup> Philip Bate and Edward Blakeman, "Tulou, Jean-Louis," *Grove Music Online,* (14 Mar. 2018).

<sup>&</sup>lt;sup>8</sup> Edward Blakeman, "Taffanel, (Claude) Paul," *Grove Music Online*, (14 Mar. 2018).

syllables and mouth shape teachings provided in these methods, the flutist must have a basic understanding of the language of their original publication--French. It is this type of working knowledge of French language and phonetics that this paper provides.

## Phonetic Terminology<sup>9</sup>

Because this paper focuses on the sounds of spoken language, it is necessary to have some background knowledge on the topic of phonetics. Phonemes are sounds in symbolic form and are appear between slashes. For example, /u/ or /i/. Again, written phonemes represent sounds and are not to be confused with graphemes, which are the symbols used in written language. For example, the words "tree" and "ski" use different graphemes to represent the same sound. However, the sound produced at the end of both words, when spoken, is represented by one phoneme, /i/. In this paper, graphemes will be represented as they are above; an entire word will be placed in quotation marks, and the grapheme related to the sound in question will be in bold font. While this paper explores phonemes related to the French language, it is written for English speakers, so examples of English words, rather than French words, will be given. Thus, it is important to note that some of the examples provided will not be perfect matches to the phonemes they represent, but they will be as close as one can get between the two languages.

<sup>&</sup>lt;sup>9</sup> All phonetic terminology and details of mouth shape will come from the book *D'accord:* La Prononciation du Français International Acquisition et Perfectionnement by Sylvie Carduner and M. Peter Hagiwara. While there are other resources available on the subject of French phonetics, it was chosen for its clarity, availability, and the fact that it is one of few such resources that is written in English, as well as my own familiarity with this book in particular. Full citation information for *D'accord* can be found in the Works Cited page at the end of the paper.

## History and Articulation of /i/

In one of the first sections of his treatise, Jacques-Martin Hotteterre describes the basic embouchure for a standard tone on the flute. Although he does not explicitly state it, he advocates an embouchure somewhat mimics the /i/ sound, as in "see" or "tree." Hotteterre explains that the corners should be pulled back so that the lips are smooth and flat, and he emphasizes that the lips should not be pushed out. <sup>10</sup> Later flutists, such as Michel Corrette, also advocate similar lip positions. <sup>11</sup>

Perhaps these French flute teachers felt it necessary to make these specifications because the majority of the French language is spoken with the lips rounded and pushed forward. However, the only French vowel that does not require the lips to be rounded, but rather requires them to be pulled back in the manner that Hotteterre and the others describe, is /i/. In addition to the lips being pulled back, the blade, or middle part, of the tongue must be raised, almost touching the soft palate (Carduner and Hagiwara 89).

While Hotteterre and the others merely allude the /i/-like pulling back of the lips in their description of an ideal embouchure, Michel Debost actually recommends a "ti" (pronounced like "tee") articulation. His reasoning for this largely centers around the process of elimination; he dislikes many other articulation styles (Debost et al. 30). However, he is certainly not the only flutist who suggests this sort of embouchure position.

In general, the /i/ sound is usually easy for English speakers to acquire, although there is one common issue: the diphthong. A diphthong is a sound that combines two vowels, starting with one sound and gliding the tongue to end with the other. Diphthongs occur quite naturally in

<sup>11</sup> Michel Corrette and Carol Reglin Farrar, 26.

<sup>&</sup>lt;sup>10</sup> Jacques Maritn Hotteterre, 11.

that a diphthong would not be a useful articulating tool, as moving the tongue during the articulation of a note could muddy the sound or alter the intonation. In the case of /i/, the problem would be the diphthong /i<sup>j</sup>/, as in "eat." It is produced by pronouncing the /i/ sound, followed by a glide with the tongue to add the /j/ sound ("y" as in "yes"). When pronouncing /i/, it is important to keep the tongue still, so as to avoid diphthongization. <sup>13</sup>

## Application of /i/ to Flute Playing

Although so many historical flutists advocated the use of an /i/-like embouchure, this is not how American beginning flutists are taught. In my own experience, "tah" and "too" are more commonly taught to beginners. However, this does not mean that the /i/ syllable is not helpful to flute playing. In my own experimentation, I found that /i/ was most useful in playing loudly in the high register, but it was very difficult to play high quietly using the /i/ syllable. For this, it is easier to switch from an /i/ shape to an /y/ shape, which will be discussed later.

The /i/ syllable was also useful in producing a rich, edgy low register tone. This could be because the tension of the lips required to produce the /i/ sound pushes more of the air down into the flute. Of course, the danger is that the lips could become too close together, making the aperture too small, and causing the notes to crack or jump octaves. The /i/ syllable was the least helpful in the middle register, causing the notes to crack and producing an airy tone.

## History and Articulation of /y/

<sup>&</sup>lt;sup>12</sup> Sylvie Cardunner and M. Peter Hagiwara, *D'accord: La Prononciation du Français International Acquisition et Perfectionnement,* (Hoboken: John Wiley & Sons, Inc., 1982), 89. <sup>13</sup> Ibid.

Jacques-Martin Hotteterre suggests a "tu" syllable as the basic mode of tonguing, as well as other syllables ending in "u," such as "ru." Countless other performers and teachers added his suggestion to their own treatises, including Jean-Louis Tulou, who suggests "tu" or "du," and François Devienne. However, other flutists, like Michel Corrette, are adamantly against this type of articulation. In his treatise, Corrette does not provide an alternative tonguing system, although the translator, Farrar, states that he probably would have used "tootle." Michel Debost also disagrees with "u" related syllables, preferring "ti." Michel Debost also disagrees with "u" related syllables, preferring "ti." 17

Regardless of their various opinions on the "tu" syllable, it is important to realize that these French-speaking flutists were writing about a very different "tu" syllable than American English-speaking flutists think of when reading these treatises. As English speakers, we might pronounce "tu" syllable with the diphthong /u<sup>w</sup>/, a pronunciation of the /u/ sound accompanied by a glide of the tongue to pronounce a /w/ sound, as in "boot." The diphthong cannot be the sound that the French tutors were looking for when they wrote about "tu," because it did not exist in their language. Another common English pronunciation of the "tu" syllable would be to use the /u/ sound, as in "too." This may seem to be an accurate pronunciation, but there is actually a subtle, but very important, difference, which will be discussed later.

In French, neither /u/ nor /u<sup>w</sup>/ is represented by a written "u." The /u/ sound is represented by a written "ou," "oû," or "où," and as was discussed in the previous paragraph, the /u<sup>w</sup>/ sound does not exist in French. <sup>18</sup> So, what sound are these French pedagogues looking for

<sup>&</sup>lt;sup>14</sup> Jacques Maritn Hotteterre, 36.

<sup>&</sup>lt;sup>15</sup> Jean Louis Tulou, *A Method for the Flute*, trans. Janice Dockendorff Boland and Martha F. Cannon, (Bloomington: Indiana University Press, 1995), 8.

<sup>&</sup>lt;sup>16</sup> Michel Corrette and Carol Reglin Farrar, 8.

<sup>&</sup>lt;sup>17</sup>Michel Debost, *The Simple Flute: From A to Z,* (New York: Oxford University Press, 2002), 30.

<sup>&</sup>lt;sup>18</sup> Sylvie Cardunner and M. Peter Hagiwara, 102.

when they write about the "tu" syllable? In French, the written "u" represents the phoneme /y/. The difference between the /u/ and /y/ sounds is the tongue position; for /u/, the back of the tongue is raised, but for /y/, the front of the tongue is raised.

The French "u" is not a comfortable sound for English speakers. In fact, Michel Debost-who has the interesting perspective of having taught both French- and English-speaking flutists over the course of his career-- says, "The French language's idiomatic 'tu' attack cannot be reproduced in English. At best, a 'tu' replica would be 'too,' a muddy attack, or worse yet, 'tew.'" Here, he identifies the two common English substitutions for "tu" that were addressed earlier:  $\langle u' \rangle$ , as in "too," and  $\langle u^w \rangle$ , as in "tew." Mr. Debost's assessment is grim, but in *D'accord: La Prononciation du Français International Acquistion et Perfectionnement,* Sylvie Carduner and M. Peter Hagiwara offer a potential solution for English speakers who would like to achieve the  $\langle y' \rangle$  sound. Practice saying an  $\langle ii \rangle$  syllable, then slowly round the lips: " $\langle ii \rangle \rightarrow$  lip rounding  $\rightarrow$   $\langle y' \rangle$ ." The tongue position should remain the same for  $\langle ii \rangle$  and  $\langle y' \rangle$ , with the blade of the tongue almost touching the soft palate.

#### History and Articulation of /u/

While /y/ was the sound that the French tutors were probably referencing when they wrote about the "tu" articulation, it can still be useful to know how to pronounce /u/, as in "too." For this sound, the lips are as rounded as possible, as if to say "hoo hoo hoo," like an owl. The lips should be more rounded than they are for /y/. The back of the tongue should be raised, unlike /y/, in which the blade, or middle part, of the tongue is raised.<sup>21</sup>

<sup>&</sup>lt;sup>19</sup> Michel Debost, 30.

<sup>&</sup>lt;sup>20</sup> Sylvie Cardunner and M. Peter Hagiwara, 102.

<sup>&</sup>lt;sup>21</sup> Ibid.. 101.

### Application of /u/ and /y/ to Flute Playing

In experimenting with these sounds, it is easy to see why Debost would call "too" a "muddy attack." The extreme lip rounding required makes the sound airy and, in the middle and upper registers, sharp. However, several students from the University of Kentucky flute studio and I found that moving from a /y/ shape to a /u/ shape seems to be helpful in executing tapers without going flat, because it brings the air angle up. It might be useful to practice saying /y/, then raising the back of the tongue and rounding the lips to turn the sound into an /u/. This could be practiced first without a flute, then added to a taper exercise. However, it would be necessary to do a larger study with more subjects to accurately confirm this theory.

My experimentations also showed why so many flute performers and pedagogues chose to teach "tu;" of all of the vowels, it provided the clearest tone, especially in the middle and high registers. Although it is impossible to say without studying many other flutists' articulation styles, it seems that "tu" (with the /y/ sound, rather than the /u/) is the syllable that most collegiate and professional flutists use, but they do not realize this since it is not a syllable they use in everyday speech, so they describe it using a close English equivalent. If this is, in fact, the case, then a knowledge of how to produce the /y/ sound would be useful for teaching beginning students. Educators could describe the /y/ sound to their beginning flutists, pointing out that the middle part (blade) of the tongue should be high, rather than the back. They could also use the "/i/  $\rightarrow$  lip rounding  $\rightarrow$  /y/"<sup>22</sup> exercise to teach this syllable. This could help beginning flutists acquire clear tone more easily and more quickly.

## Articulation and Application of /o/ and /o/

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<sup>&</sup>lt;sup>22</sup> Ibid., 102.

The last French vowels that will be discussed in this paper are /o/ and /ɔ/. Although there is little historical context for the study of these sounds-- none of the treatises examined used them-- they do have potentially important implications for flutists. While there are no examples of pedagogical syllables using these sounds in historical French treatises, /o/ and /ɔ/ are used in French words, such as "beau" and "bonne," respectively. <sup>23</sup> Unfortunately, it is difficult to describe the articulation of these sounds, because like /y/, they do not relate well to any English sounds. The /o/ sound would be best explained as the vowel sound in "toe," but with more lip rounding and tension (so as not to produce a diphthong). To produce the /o/ sound, the back of the tongue must be very high. The /ɔ/ sound can be most closely related to the "uh" sound in English, but again, with more tension and lip rounding. The most significant difference between /o/ and /ɔ/, is the tongue height; the back of the tongue must be very high for /o/, while it should be significantly lower for /ɔ/. <sup>24</sup>

The tongue height difference between these two vowels can be applied to flute playing for wide leaps. For the lower notes, use the lower tongue position of /o/, then raise the back of the tongue to the high /o/ position in order to leap up to the higher note. This way, the tongue is doing more of the work, so that the embouchure does not have to work as hard. In my own experimentations, some students in the University of Kentucky flute studio found that this technique works particularly well for octave jumps (especially on piccolo) and moving between harmonics-- situations in which there is no fingering change to assist the note change. Further

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<sup>&</sup>lt;sup>23</sup> Ibid., 169.

<sup>&</sup>lt;sup>24</sup> Ibid., 167.

research would be required to know if these vowels and tongue height techniques are taught by more obscure French historical treatises or modern French flutists.

#### Conclusion

While this project analyzed French phonetics and their relationship to flute playing in great detail, there are still several opportunities for its expansion. First, larger subject pools of flutists are needed to test any of the "tricks" related to the phonetics provided in this paper.

While these exercises achieved the results indicated in this paper for several flute students in the University of Kentucky flute studio, their effectiveness for flutists of different ages, levels, and backgrounds remains to be seen. In addition, a similar study of French consonants and their relationship to flute playing was beyond the scope of this project but would be hugely beneficial in demystifying other elements of historical French treatises. Finally, an investigation of modern French flute pedagogy would provide even more insight into the syllables and techniques discussed in this paper.

The need for further research aside, this project provided many insights into the sounds and mouth shapes that historical French flute teachers would have wanted when they provided certain syllables in their treatises, as well as indications of how American English-speaking flutists might be interpreting these syllables differently. Learning new mouth shapes and increasing embouchure flexibility is always useful for flutists, but doing so in the context of the French language proves especially helpful because of the importance of French history and culture to the development of our instrument.

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