Do tonal answers facilitate the retention, or change, of key? Revisiting the "key-retaining" answers of baroque fugue*

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Abstract

Tonal answers are sometimes described as a troublesome subtopic in fugal studies. This paper suggests that their difficulty stems from an (only apparent) paradox, tied to their history. Early conventions or "rules" about tonal answers reflected a doctrine that both the subject and its answer should project the same key (or mode, in earlier writings). Tonal answers ostensibly helped to ensure this conformity. Later, however, a second "layer" of customs around tonal answers came to the fore. These reflected a theory that subject and answer should between them employ *two* main keys—a seeming contravention of the earlier dictum. Ultimately, neither of these "layers" of convention entirely displaced the other in practice. Instead, they developed an interesting symbiosis: each found its characteristic application in a portion of the fugal theme, as though through a division of melodic territory, in a relatively systematic way. It is no surprise, however, that if this is not clearly explained, students of fugue can develop an inchoate feeling the "rules" are pulling them in opposite ways. In the past century, theorists have come tantalizingly close to solving this problem, but the final step has not been taken. This study proposes that by untangling this systematically, we can make tonal answers not only more understandable but more interesting.

INTRODUCTION

"There are few fields in the study of music," Imogene Horsley wrote in 1966, "in which the complexities of theoretical rationalization and musical logic are so intricate and frustrating as in the study of the fugal answer."[1] Indeed, where the common-practice-era fugal answer is discussed in print, words such as "frustration," "vexation" and even "riddle" not seldom appear nearby.[2] Scholars still dispute such a seemingly simple question as whether or not the answer is to be considered as using the same key as the subject (the initial statement of the theme).[3] Theorists have even found themselves in disagreement with J.S. Bach, variously characterizing at least seven answers as faulty in his *Well-Tempered Clavier* (WTC) alone.[4] A special area of debate is "tonal" answers: those that imitate the subject in an altered rather than exact way.[5] This debate often returns to the aforementioned question over the keys, because the tonal answer is generally described as a way of managing the key or keys in the answer.[6] Unsurprisingly, competing theories persist over what the answer procedures really were.[7] An additional challenge is that fugal technique changes over time, so one has to describe a "moving target." This study focuses on the period from about 1700 to 1850, during which such changes were relatively restricted.[8]

Frustrations surrounding fugal answer are far from new.[9] In 1791, the composer, theorist, violinist and polymath Francesco Galeazzi, not satisfied with voicing irritation, ventured upon accusation, suggesting deliberate obfuscation was at work:

> I am not aware of any author who has taken the trouble to thoroughly analyze the nature of subjects,

> and to deduce… general rules… to reliably create satisfactory answers for a given subject. All authors have treated this matter with so much obscurity that one can barely obtain any reliable enlightenment... The same masters hide who-knows-what mysteries from their disciples, and think that to make an answer for a fugue one should be a Zoroaster or a Simon the Sorcerer.[10]

Galeazzi's "conspiracism"[11] notwithstanding, some important composers, and many theorists, have contributed excellent insights to this field. One problem, though, is that in any individual theory, such information is often incomplete or commingled with misunderstandings. If, however, a researcher studies a large body of scholarship, and manages to "weed out" unhelpful ideas while "stitching together" remaining ones that work, the rudiments of a viable theory begin to emerge, helping to make sense of the fugues of the "masters." This study follows such an approach. Thus it will propose a theory that builds greatly on previous work,[12] but is also slightly new.

Many discussions of fugal answers focus chiefly on the question of real vs. tonal. We too will examine this, but the question with which we will launch the present paper is nicely summed up by the British musicologist Donald Francis Tovey: namely, "whether the alternation between subject and answer is an alternation between two keys or... between two positions of the same scale."[16]

Two researchers can be cited to exemplify these contrasting outlooks. The first perspective, "two keys," widespread today, was advocated by the influential theorist Ebenezer Prout, who wrote:[17]

> The ANSWER is the transposition of the subject into the key of the perfect fourth or fifth above or below. … In an enormously large majority of cases the keys for the subject and answer will be the tonic and dominant. …
>
> If the subject be in the tonic, the answer will be in the dominant; if the subject be in the dominant, the answer will be in the tonic. If the subject begin in the tonic and modulate to the dominant, the answer will begin in the dominant and modulate to the tonic, and *vice-versa.*[18]

This will hereinafter be called the *key-change theory* (or technique) of fugal answer. The type of answer it predicts will be called the *key-changing* answer. Prout provides many examples, starting with the work quoted here in Ex. 1.[19] Despite this, scholars including Siglind Bruhn and Charles Nalden have recognized[20] more recently that numerous answers exhibit no change of key. Rather they remain in the key of the subject: the tonic. This key might persist only for a brief time, such as the first two thematic entries; or throughout the exposition, or longer. Exx. 2 and 3 illustrate.

Thus the key-change theory is not a satisfactory generalization. Let us see whether Tovey's second suggested perspective ("same scale") works better. Roger Bullivant supports this one, stating:

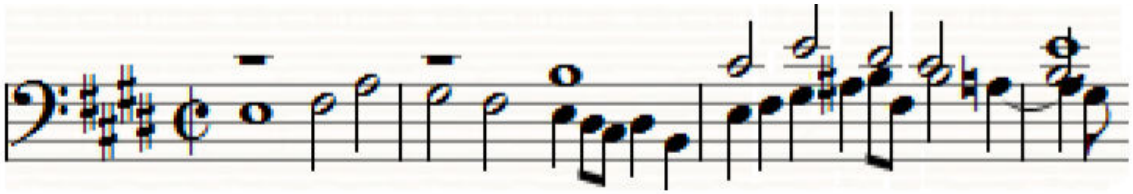
> The purpose of the answer [is] to confirm the tonic key and scale already established by the subject, while still preserving the theme's tone-semitone relationship….
>
> The opening of the answer was invariably [said by

> instructors to be] 'in the dominant key,' for some reason which was never made clear, but was evidently accepted by generation after generation of docile students.[21]

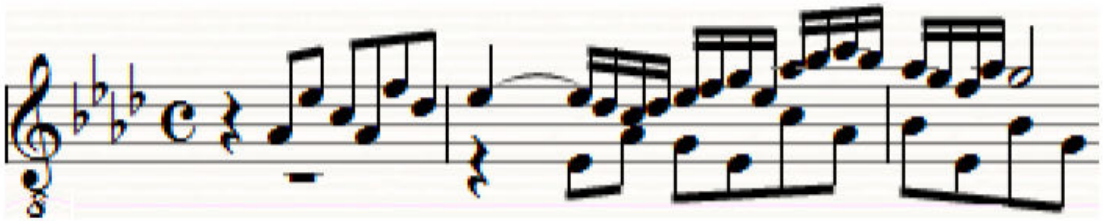
This will hereinafter be called the *key-retention theory*; and the kind of answer it predicts, the *key-retaining* (or tonic-retaining) answer. (All these approaches do concur that the answer is generally a fifth or fourth above or below the subject.[22]) Bullivant, incidentally, does not interpret his key-retention theory with absolute strictness. He allows, for instance, that some answers have "a foreign note"; as an example he offers what is shown here as Ex. 4.[23] But he portrays such notes as essentially interpolations, even if desirable ones, that leave the basic tonality intact.[24] He takes a similar view towards subjects that, as he puts it, "digress[]"[25] to the dominant, by ending on $\hat{5}$:

> The academic term is, of course, 'modulating subject'—a most misleading description in that the whole point of a v ending is to help in setting up the *tonic* key.[26] [Emphasis in original]

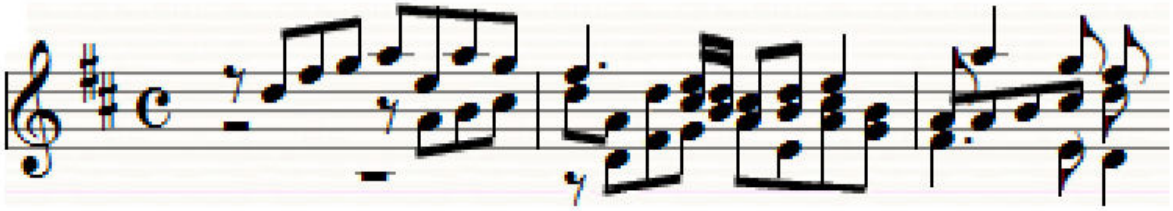
Bullivant's theory, beguilingly straightforward, can probably account plausibly for our examples so far. But in attempting to solve Prout's difficulties, he creates new ones. Consider Ex. 5. Bullivant's doctrine implies that this answer, running from measures 6½ through 11, projects the tonic key,[27] D major. And each of the six times that G#[28] appears in it (not counting additional G#'s in the lower voice), it is only an isolated instance, insufficient to undermine the tonality. But how strongly must a composer emphasize the key of A before we hear it as A? And how is it that this answer accords with Prout's theory perfectly?



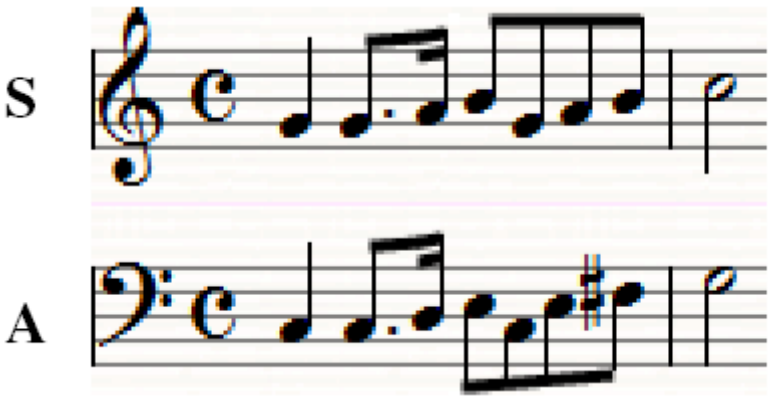
Ex. 1. J.S. Bach, E major fugue from *The Well-Tempered Clavier* Book II.[13]



Ex. 2. Bach, A♭ major fugue from *The Well-Tempered Clavier* Book I. Note, examples are condensed onto one staff where feasible to conserve space.[14]



Ex. 3. Handel, introductory bars of "Glory be to the Father" chorus from *Utrecht Te Deum and Jubilate* in D major, HWV 279.[15]



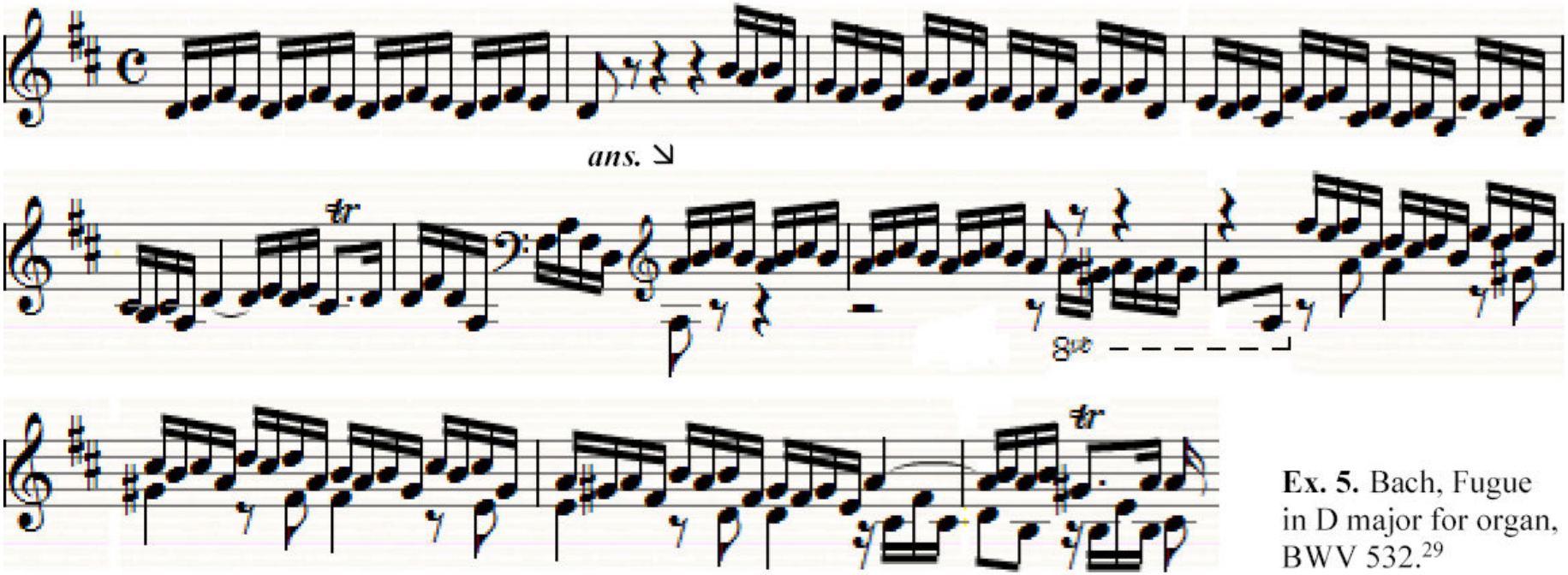
Ex. 4. Hypothetical subject and answer by Bullivant.[32]

In short, both the "key-change" and the "key-retention" theories have significant limitations. Perhaps, however, some kind of compromise might work better. George Oldroyd has pointed toward one such compromise, writing:

> Sometimes… the change of key is deferred until nearly the end of the answer. … It was a common practice in the earlier days to maintain the original tonality far into the answer and even throughout it. Bach's use of this… explains away many of the points in his fugues that have been criticized; Bach himself being accused of 'confusing the issue.' … *The maintaining of tonic tonality well into the answer is the crux of the matter*…[30] [Emphasis in original]

In effect, Oldroyd is suggesting that an answer may manifest "key-retention" during its earlier notes, and "key-change" in its later notes.[31] Moreover, Oldroyd understood tonal answers—at least some of them—to function precisely in support of the initial key-retention:

> For the same basic reason—the maintaining of smooth tonal flow or steadiness of tonality—the following cases show tonal answers: [Oldroyd quotes WTC Book I, Fugues in A♭ major, seen above, and C minor]. The tonality of the Tonic key is maintained—



Ex. 5. Bach, Fugue in D major for organ, BWV 532.[29]

> undisturbed—well into the Answer and the change to [the dominant key] is gradual, not forced or obvious.[33]It is no coincidence, then, that the beginning is where the tonic key is "maintained": this is the same place where the melodic adjustments occur.

What type of tonal answer is this that typically affects the beginning, as in Oldroyd's excerpts? It is a special kind, based in a widely discussed and taught custom often simply called "the old rule,"[34] by which (under special conditions), tonic is answered by dominant and dominant by tonic. Yet a curious fact is seldom remarked on: different texts formulate the "rule" in conflicting ways. Heinrich Schenker describes it as follows:

> The old rule of the so-called tonal answer governs… [a] change in the answer's opening: it stipulates that the tonic and dominant notes of the subject become dominant and tonic [respectively] in the answer.[35]

A different theoretical tradition is discernible in the following description, given in 1877 by Joseph Green. (Note: his examples and context clarify that by "fifth" and "fourth" he means the fifths and fourths bounded by tonic and dominant notes.)

> If the subject of a tonal fugue, or the leading phrase thereof, be contained in a fifth, the reply must be in a fourth, so that subject and reply be contained in the octave … or *vice-versa* [fourth replying to fifth].[36]

Green's and Schenker's statements are not easily reconciled. They are not "just different ways of saying the same thing." Schenker is referring to individual notes, $\hat{1}$ and $\hat{5}$. Green is alluding not to individual notes (or even keys), but two

compasses.[37] We will return to this, arguing that versions such as Green's are truer to the repertory.

Whichever way it is framed, though, several theorists have noticed that the "old rule" does not promote change of key; quite the contrary, it fosters retention of the tonic key. (The surer way to reach a new key would seem to be: answer $\hat{5}$ by its own dominant).[38] This point, if downplayed in "key-change" doctrines, should really be no surprise, because earlier theorists[39] were emphatic that the object was to retain the original tonality. The remarks below by Johann Mattheson (1739) show this, even if, as readers may notice, his concept of "key" is not exactly the modern one.[40]

> The fourth becomes the fifth just as the latter would be altered into the former if the reiteration [answer] is to be correct. …[41]
>
> If one precisely limits the key within the bounds of an octave[!], as commonly occurs, then… insofar as the antecedent [subject] remains within the compass of a fifth and goes neither higher nor lower, the consequent [answer] must in no way surpass the range of a fourth and vice-versa. Here, then, the fourth and fifth fill in the octave in this way. That is the meaning of the first part of the above rule[42] [stated earlier by Mattheson: "*One should not overstep the bounds of the key, either upward or downward.*"[43] Emphasis in original]

Hence, the old rule—insofar as it applies—exists to preserve the original key. Furthermore, and uncoincidentally, the part of the answer where it is used, the opening (sometimes the whole theme[44]) is again the same area where Oldroyd says, citing

Bach excerpts, that “the Tonic key is maintained.”[45]

Not all tonal answers follow the “old rule.” There are other kinds of tonal answers—some of which, as Prout shows, do facilitate modulation. Notably, however, early-eighteenth-century theorists expressed little or no interest in key-altering tonal answers.[46] This is because as just seen, they did not think answers should visit a new key at all, other than perhaps exceptionally. That is, they basically advocated what we call the key-retention theory.[47]

What are we to conclude from all this?

It appears that all these scholars are correct to a degree.

There really exists a fugal repertory that employs “key-retaining answers,” if not exclusively, then very often. It is a relatively early repertory. The answers’ tonic-key character is evident, in part, because (*pace* Bullivant) they omit foreign accidentals and even maneuver to avoid them.

Yet there also exists a repertory—somewhat later, but overlapping in time—in which the “key-changing answer” is prevalent. This requires an important qualification, however. This repertory preserves an significant “vestige” of the older key-retention procedure. Oldroyd’s observation was on target: the key-retention particularly affects the beginning of certain answers in this body of work. This repertory, which includes most of Bach’s best known fugues, is commonly called “classical fugue.” For this reason, we will call its answer-procedure—a fusion of old and new—the “classical fugal answer.” The methodology, which though not uniform was fairly consistent,[48] represented an ingenious solution by composers to problems that they perceived at the interface of fugue and tonality. It was a strategy that let them vary the key

without doing so in an abrupt, obvious or excessively predictable way.

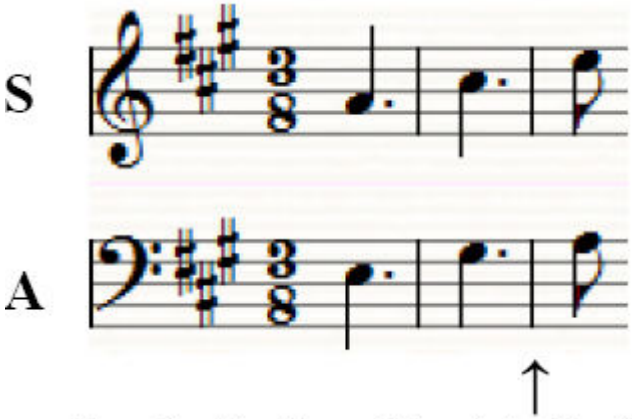
The distinction just suggested between successive historical stages, the "key-retaining" and "classical" answer, is an oversimplification, but a useful one. The details will be expanded on further ahead.[49] We will dissect this history, by studying, first, "key-retaining" answers, and then, "classical" answers. This will help us arrive at a simple and workable theory of the answer.[50]

I do not wish to make readers go through scores of pages before getting some overall sense of the theory. Therefore, a summary is sketched directly below. The reader is entreated, however, not to judge the whole theory based on this overview. It may include some surprising claims, for which the supporting evidence, inevitably, cannot be adduced until the main body of the study. Also, this sketch will focus only on "classical" fugue, passing over the earlier repertory.

Summary of the theory

This study will propose that only three basic kinds of fugue subjects need to be recognized.

One type tends for the most part to elicit answers that are both tonal, and key-retaining. It will be called a *lead-in* subject. It has two defining features. First, it begins and ends with $\hat{5}$ and $\hat{1}$, in either order or direction, moving by leap (perhaps just one) or by step, but *without exiting* the relevant fifth- or fourth-compass. Second, a lead-in theme uses only the tonic key. Ex. 6 shows a lead-in subject. Readers will notice it is short. Brevity is a common trait of lead-in subjects, though not a



Ex. 6. Air from Handel, *Saul* oratorio: a short but complete fugal subject.[52]

mandatory or defining one. As for the expected key-retaining answer: this is usually made following a principle basically like that outlined by Mattheson on the last page. This entails at least one tonal adjustment. The arrow under Ex. 6 points to this change, also called a mutation.

The second type of subject, by contrast, usually elicits "key-changing" answers; therefore, these may well be real or tonal depending on the subject's key-structure. This will be called an *unconstricted* subject. To be deemed an unconstricted subject, a theme must meet only very modest criteria: that it not be a lead-in subject, nor begin with a phrase in the form of a lead-in subject.

These first two subject-types are not very difficult to answer. Each uses a single theory to determine its conventional answer; and each of these theories, in itself, has reasonably well-settled principles, even if some details are disputed.

The third type will be called a *combination* subject. It is a bipartite structure. It: (1) begins with a section identical in form to a lead-in subject; then (2) proceeds to a section identical in form to an unconstricted subject. Ex. 93 illustrates. A serendipitous quality of a combination subject is that its answer can usually be predicted with ease by mentally breaking this subject into these two components. Each is then answered separately, as though it were an independent, free-standing

fugal subject. This leads quickly to an answer for the whole melody. Hence, all three types of subjects (and there are, fundamentally, only three) are tractable. As we will argue, then, the method makes it easier to accurately predict most answers in the relevant repertories and to understand why they are as they are. There are, to be sure, various caveats and subtleties to address, but the above may suffice as a foretaste of the theory.

A remark about terminology is in order. This study invents some new terms, as seen. Analogously to certain existing terms,[51] designations such as “key-retaining answer” and “key-changing answer” refer mainly only to events in the fugal exposition. (Later thematic entries may well be in keys outside tonic or dominant.) Overall, the preference has been to retain old terminology where possible. A glossary at the end reviews the new terms. Following that is appended a list of forty-eight fugues with “tonic-retaining answers” for enjoyment or study.

As the author hopes it would go without saying, this study aims to describe, not prescribe: neither to promote nor condemn any specific procedure, but merely to explicate what reasoning may be consistent with some of the composers’ choices. Words such as “rules” do arise in fugal studies not seldom, but are sometimes used only for easier readability; they are best construed metaphorically, as in “composers behaved as though they observed such-and-such a rule.” More precise terms are conventions, customs or norms. One “rule” I hold for myself, is this: following “rules” is less important than trying to understand their reasons. Without such insight, musical studies “sink to the level of mere mathematical problems.”[53] We will try to shed some light rather than merely catalogue various techniques.

This rest of this paper is divided in two sections. Part I examines the "key-retaining answer." Part II examines the "classical answer," including, as applicable, its "vestigial" key-retaining aspects.

PART I. "KEY-RETAINING" ANSWERS

a) *Some "foreign customs"*

Music theorists sometimes quote the adage: "the past is a foreign country: they do things differently there."[54] This dictum will benefit us as well, because although this study will not plumb the earliest fugal history, it will start the discussion relatively early, around 1700. By then, "modal" theory was in eclipse, yielding to new ideas about "key" that would in time come to be seen as part of "modern tonality."[55] But initially, these notions were handled somewhat differently from today. Let us review some "foreign" customs about fugue.

The first involves a central concern in fugue: how one decides to which key a given melody belongs. This is a deceptively simple question. Consider Ex. 7a, a very elementary, hypothetical fugal opening. Suppose we were asked, "in what key is the subject? And in what key is the answer?" Our first inclination might be to respond "C major," at least for the subject. But closer scrutiny suggests things might not be that clear. At the second barline, one finds a perfect cadence in G, so perhaps the *answer* is in G. (Some would disagree however, presumably including Bullivant.[56]) Then, at the third barline is a B♭. This inflection, characteristic of F major, coincides in time with a return of the subject, in the bass. Perhaps, then, the subject has an F major, as well as C major, aspect? But we were not asked for two answers to the question. Suddenly, things seem foggier. And yet this is one of

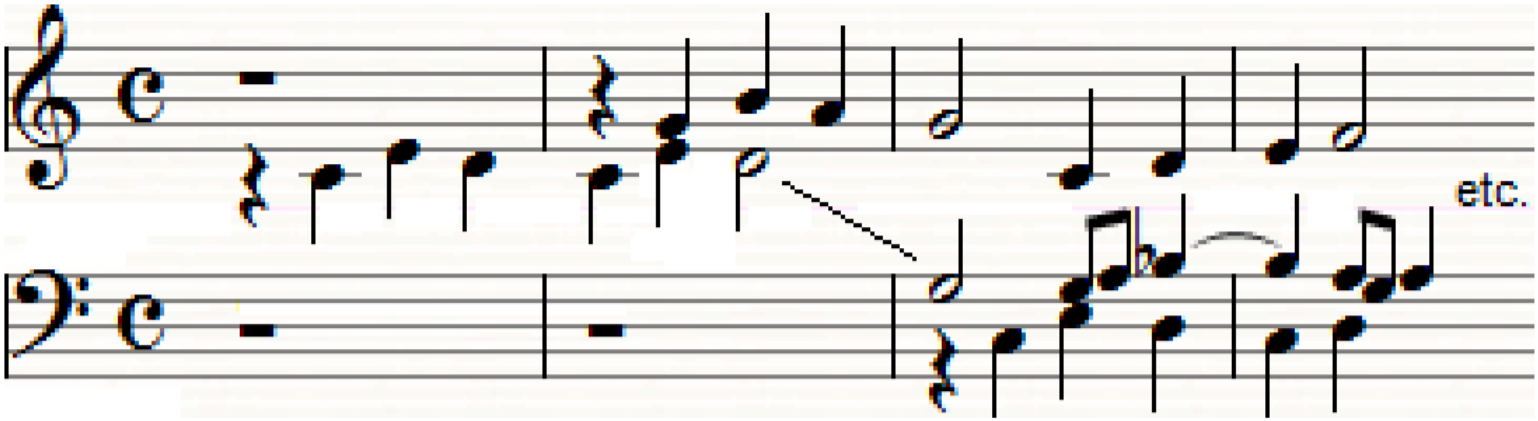
the simplest themes conceivable. Theorists can and do disagree about the "key" of certain answers, and even subjects.[57]

To clarify this situation, we should reacquaint ourselves with an analytical procedure that late-baroque theorists tended to take for granted. I will give the procedure a name: "Ignore the accompanying counterpoint." It can be described as a two-stage process, as follows. (1) One mentally *deletes* any and all counterpoint that is not part of either the subject proper, or the answer proper. For utmost clarity, Ex. 7b provides a visualization of this step.[58] (2) One answers the "what key?" questions as best one can using only the remaining information: the actual subject, and actual answer.[59]

Bullivant lays great stress on a such a methodology, rightly, because as he understands, it can be somewhat alien to modern musicians.[60]

"Ignoring the accompanying counterpoint," to be sure, presents its own difficulties. Mainly, it leaves us less information to work with—fewer clues to ascertain the key. Yet baroque theorists were comfortable with this. How did they do it? How, for example, would they "know"—(and they would have)—that the subject in Ex. 7 is to be considered in C, as opposed to being a subject that starts and ends on the dominant of F major, which would look identical?[61]

The answer is that theorists assumed a good subject would chiefly emphasize the notes of the tonic triad.[62] Therefore, given a subject, they would "assign" it to that key in which it best appeared to emphasize tonic-triad notes, especially the tonic itself. For Ex. 7, that single best assignment is C major.



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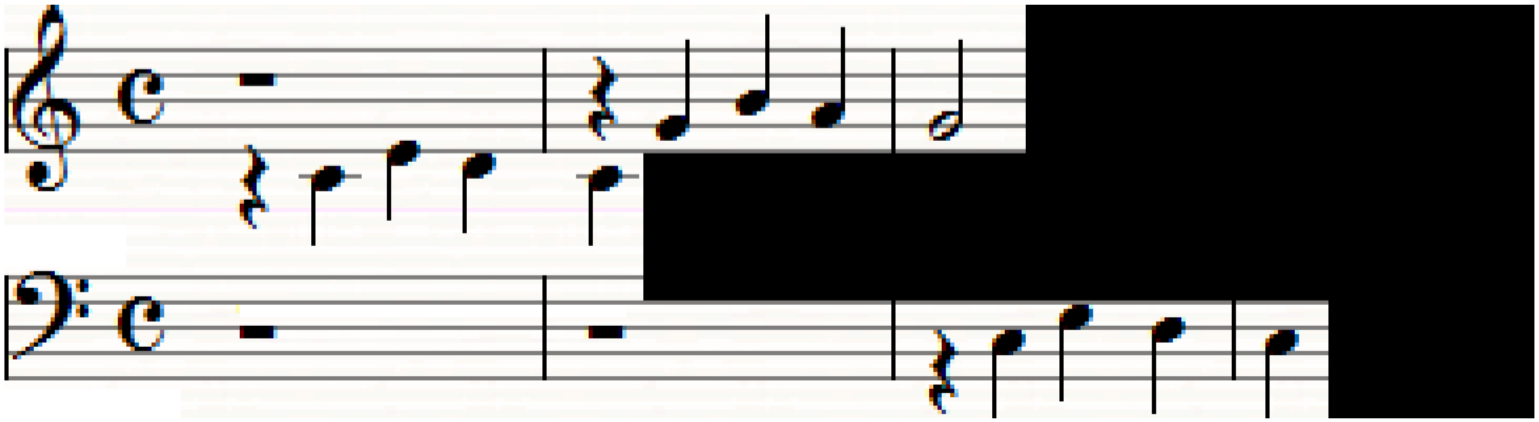
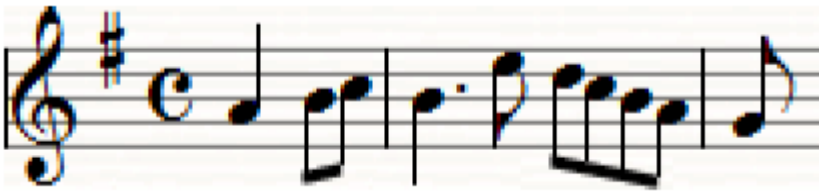


(b)

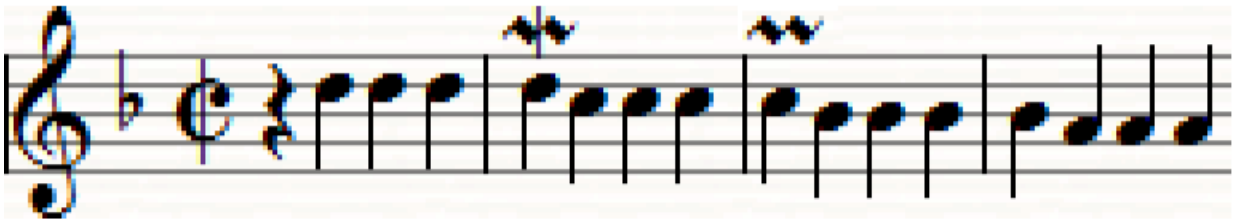
Ex. 7. A very elementary fugal opening. To focus on determining "key assignments" for the subject and answer, everything but the subject and answer proper is normally ignored. (The entry at lower right, redundant for our purposes, could have been deleted as well, but is harmless.)

This is not an exact science. Not all subjects are as straightforward as in Ex. 7. Nor are conspicuous tonic-triad notes absolutely mandatory. I wish to broaden this discussion to address more than only very conventional subjects (though we will still limit ourselves to key-retaining answers). To this end, let me offer a few more, practical suggestions.



Ex. 8. A subject, as Mattheson writes, "begin[ning] on *a*, the second" of G major.[71]

All an analyst really needs to know, after ignoring the accompanying counterpoint, is that given a subject, the "key" is whichever single key feels most obviously compatible with it. "Mentally supply the most natural harmonies."[63] If there are prominent tonic-triad notes, as there very commonly are, so much the better; the task will be that much easier. A word about key signatures is in order. In cases of doubt, it is natural and reasonable to check the signature for a hint as to the key. This may or may not help. Sometimes, the signature may appear to conflict with the *felt* key. Exx. 10 and 17 feel" fairly clearly as E minor and D major, but the signatures may suggest otherwise. The reason here, and often, is related to older key-signature practices (several examples in this paper have "Dorian" signatures). Regrettably, I cannot treat this topic in full,[64] so I will limit myself to some practically oriented tips. In case of conflict, the "best bet" is usually to give priority to the melody—assume the key the composer had in mind is the key plainly felt in the melody.[65] But sometimes the melody is ambiguous. Ex. 8 sounds like A minor, at first; but its close suggests G major. The signature supports the



Ex. 9. Offertoire by Jean-François Dandrieu.[69] This theme could seem as a "trick subject" to modern observers. With both a signature and melody suggesting D minor, it would appear all but impossible, without more information, to know it is in fact conceived in G minor. The answer, real, enters on G so that $\hat{1}$ replies to $\hat{5}$. The "Dorian" signature is a traditional usage, already waning when the piece was published (not a proof of modal music).[70] The melody's key-ambiguous quality is also explainable: this is an "accompanied fugue," in the sense that there are supporting chords from the outset. These clarify the key.

second interpretation. In such cases, the signature can serve as "tie-breaker"—so one takes the key as G here. These suggestions are not foolproof, but subjects totally defeating them are rare enough to be called curiosities. (Ex. 9 is one). In this study, keys will be clarified in captions if necessary.

As for the answer, in order for it to be called "tonic-key," it is sufficient that it be compatible with the tonic key, and that it exclude foreign notes (other than as chromaticisms: namely, chromatic passing tones). Ideally the answer, too, emphasizes tonic-triad notes (sometimes aided by the "old rule"), but it

cannot always do so as much as the subject does.

Many subjects are not suitable for the study of "key-retaining" answers. By definition, the technique presupposes that the subject itself is wholly in the tonic. (A vexing question involves fugues that may hark back, at least nominally, to pre-tonal, modal systems or scales. Fugues with titles such as "Primi Toni" are common even until almost 1800, for example, and are difficult to ignore as a practical matter. Can none be said to have *key*-retaining answers? I would suggest that many of the post-1700 works, at least, can be heard and analyzed as tonal music, with caveats.[66])

A notable ramification of "ignoring the accompanying counterpoint" requires comment. If we accept that principle in full, it follows that when this study quotes exemplars of "key-retaining answers," it would be *possible*, indeed defensible, to use excerpts in which the accompaniment suggests keys other than the tonic—excerpts like Exx. 1 or 7. We could still call them key-retaining answers as long as the subject and answer themselves respect the tonic key. Nonetheless, I recognize that modern readers may, rather like Prout, be disinclined to accept that "accompaniment" is irrelevant to the key.[67] Therefore, to forestall any doubts, and in deference to the modern mindset, most of our exemplars[68] of tonic-retaining answers are drawn from fugues whose accompanying counterpoint, too (even when not quoted) preserves the key, at least through the exposition—such as Ex. 3. Surely such answers may be called "key-retaining." The forty-eight fugues in the appendix, half in major and half in minor, also meet this condition.

Next, there is another "foreign custom" to discuss. It involves

compass: the pitch range spanned by a given melody or passage.

Baroque fugal theories frequently exhibit a pronounced fixation with compass. The topic arises again and again: boundaries that theorists recommend respecting for one reason or another.[71] Many modern theorists, however,[73] have "brushed aside"[74] or misunderstood the issue. They are not entirely to blame for this: as Galeazzi complained, the early writings themselves are not always clear.[75] Regardless, a clarification of how compass bears on the fugal answer is imperative.

To this end, let us look at quotes from three historical texts. The reader is asked to note the pervasive concern with compass. The first excerpt is one we have already seen: Mattheson's, on p. 10. Another, not very different one is from H.F.M. Langlé, as follows:

> [Tonal] fugue subjects, as combined with their answers, by no means exit the limits of the octave. It would have been better to call this type of fugue, Fugue de *l'octave* [octave fugue] rather than Fugue du *ton* [tonal fugue]; but such was the name given to it in the old days, and I will leave it that way. …
>
> There are only four possible kinds of subjects [in tonal fugue]… two starting from the tonic and moving to the fifth [up or down], and two others starting from the fifth to go to the tonic.[76] [Emphases Langlé's]

No less adamant about the importance of range is Giambattista Martini, teacher of Mozart:

> Tonal fugue being restricted within the limits of the octave… [it] is not formed by other than a fifth, and a fourth.[77]

From such statements, we can infer the following. First, all three theorists are alluding to what we today call the "old rule." Second, the defining trait that marks a subject as suited for tonal answer is not the presence of $\hat{1}$ and $\hat{5}$ in and of themselves. Nor is it a leap between them. The true defining feature is the outlining of a special, closed compass. Those two notes are important less for their own sake, than for their roles as boundary markers. Further still: the conditions for a tonal answer are met if and only if this compass—sometimes called today the "fundamental fifth or fourth"[78]—encloses either: (1) the whole subject, or (2) its "leading phrase" (as Green put it: p. 9). This is seen in the three authors' exemplars[79] (not reproduced here due to space limitations). Innumerable "real-life" specimens capture the same idea, including Exx. 3, 10 and 27a-d.

No less important, however, is a kind of converse principle. Namely: since the tonal-answer expectation is tied to observance of a range, *lack* of that observance *nullifies* that expectation, even if $\hat{1}$ and $\hat{5}$ are present. Stated bluntly: if a subject "breaks out of" its fifth or fourth before completing it, a tonal answer is not expected.[80] More than not expected, it is not even likely—as the repertory and early theoretical texts show—unless there is some other identifiable reason for a tonal change, outside the "old rule."[81]

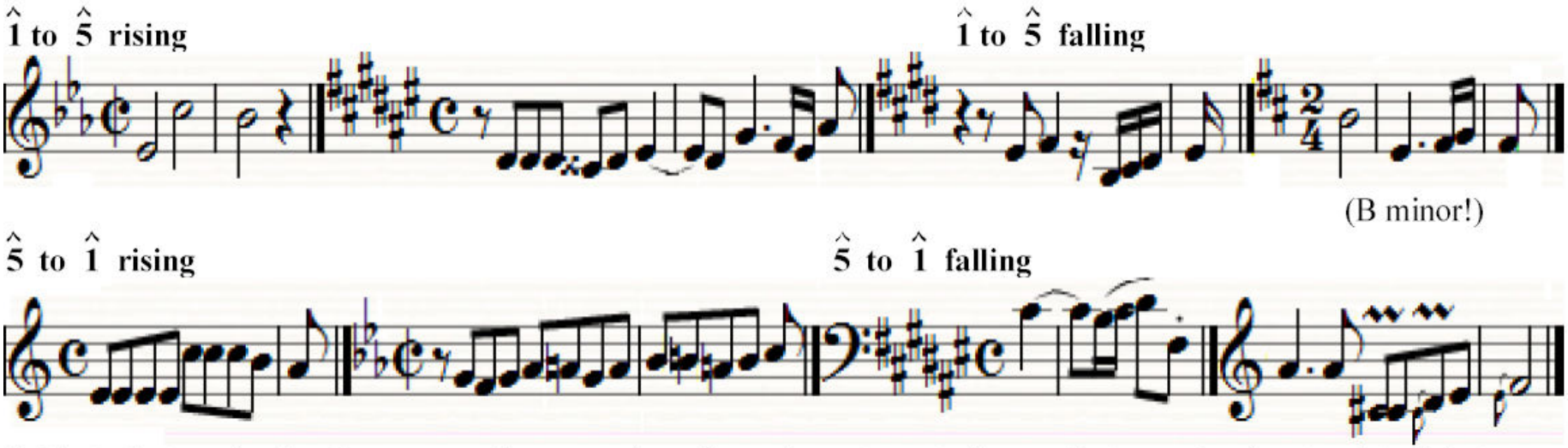
To sum up: *the old rule was not originally intended to cover motifs that, in the process of getting between* $\hat{1}$ *and* $\hat{5}$, *breach the compass between them*. (This applies to both "key-

retaining" and "classical" answers, incidentally. Therefore, until the end of the next page, our comments will apply to both types).

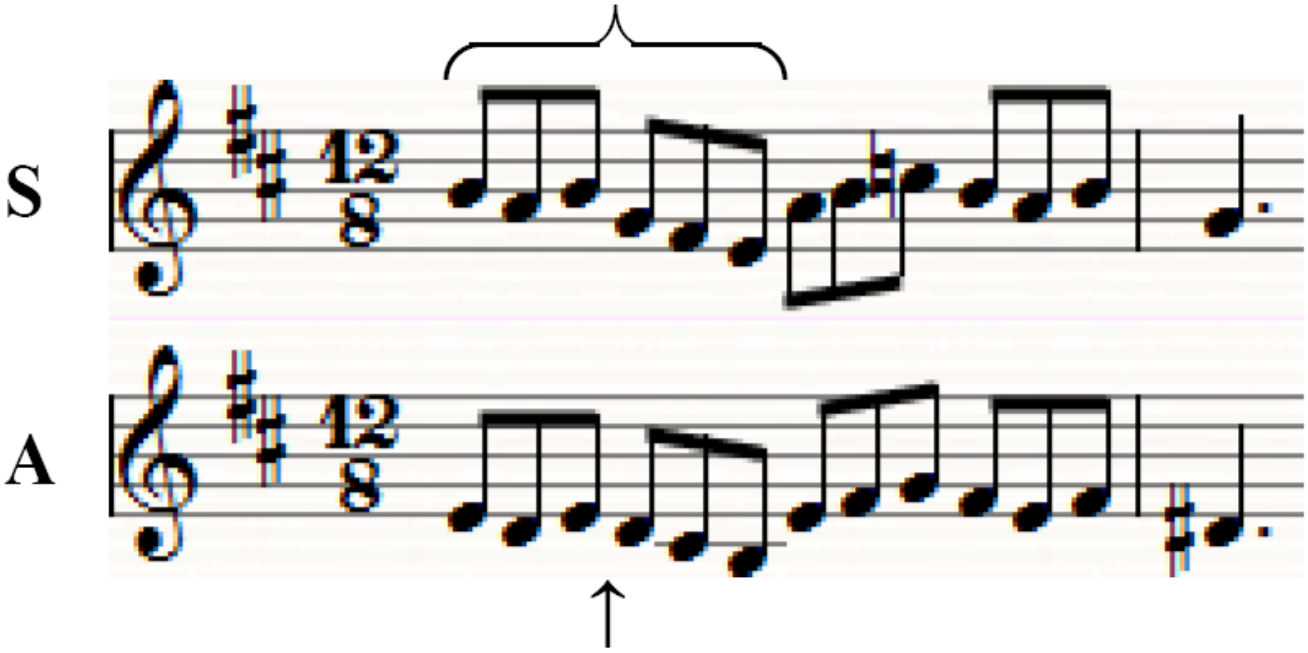
To give examples, Table 1 shows eight cases of "breached compass" as just mentioned. Every possible basic configuration of "breached compass" is represented: $\hat{1}$ and $\hat{5}$ in any order, the overall motion rising or falling, the "breach" occurring up or down. In each case, going outside the fourth or fifth by as little as one step would appear to have nullified the tonal-answer convention. All these subjects received real answers. What negates the tonal-answer expectation is not the mere presence of intervening notes between $\hat{5}$ and $\hat{1}$, but the fact that they exit the range. Notes that do not, usually do not weigh against tonal answers. See Exx. 3, 10 and 19a. (The latter is very interestingly compared to 19b. Note: *answers* do sometimes breach their "allotted" fourth in middle notes.)

For a contrast, let us consider what might ensue if a theorist, not heeding the above compass considerations, applied the "old rule" without regard to range. Table 2 shows six openings of imaginary subjects. Hypothetical tonal answers are below; but these are manifestly not requested by the "old rule" owing to the compass breaches. (Let it also be assumed here that there are no separate reasons to answer tonally.[83]) The works of Bach, Handel, Mozart or other famous "names" exhibit no significant numbers of answers such as these. Real answers are the usual solutions. And yet, every answer in Table 2 has been portrayed in at least one relatively modern treatise as the correct (or at least, the old-rule-adherent) answer.[84] The tendency to overlook compass appears to have led modern academics unintentionally, but spectacularly astray.

TABLE 1



Subjects that received real answers, whose openings (the only parts quoted) move between dominant and tonic but "breach" the compass in the process. The subjects in the top line were all answered at the upper fifth or lower fourth, so replies begin with $\hat{5}$. Those in the bottom line were answered at the upper fourth or lower fifth, so replies open with $\hat{1}$, except the second one which was answered at the lower fourth perhaps to avoid $\hat{7}\flat$. Sources: top line, left to right—(1) Albrechtsberger, Fuga VII from *Douze Fugues*, 16; (2-3) Bach, *Well-Tempered Clavier* (Book II, D# minor; Book I, E major); (4) Händel, Fugue IV from *Six Fugues*, 13. Bottom line, left to right—(1) Fischer, Praeludium III, Fuga III, *Blumen-Strauß* (*Werke*, 108); (2) Bach, Fugue in C minor BWV 904 (*Fantasien*, 24); (3) Klengel, quoted in Marchant, *Five Hundred*, 40 (no. 233); (4) de Grigny, "1er Kyrie en Taille à 5," from *Premier Livre*, 2.



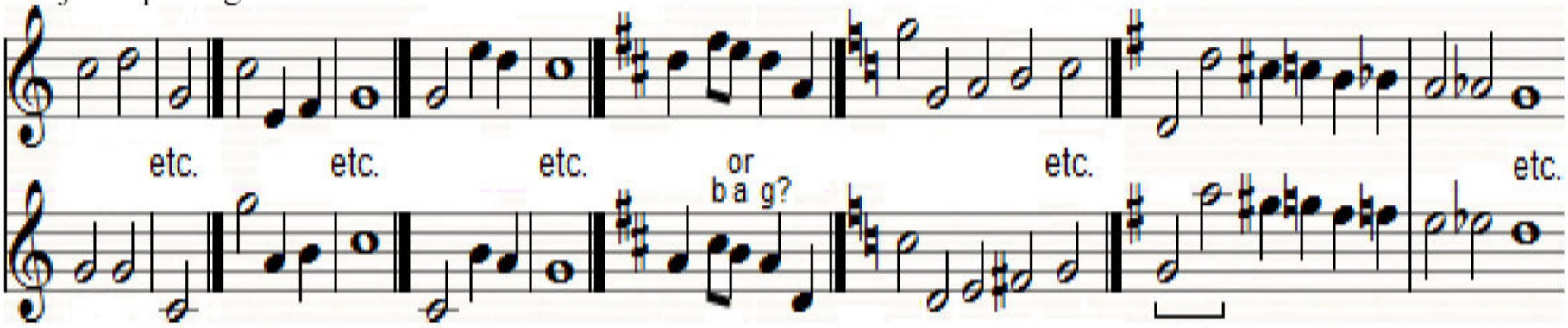
Ex. 10. The convention about "mutually" answering fundamental fifths and fourths is not negated by the presence of in-between notes, provided they stay within the relevant compass in the subject. Fuga from Praeludium 7, J.K.F. Fischer, *Ariadne Musica*.[82]

Confusion around the "old rule" is exacerbated by the phrase itself. "Old rule" is inherently vague. Therefore, I will discard it outright, in favor of a more precise term: the *compass-exchange norm*. This again denotes the idea that fundamental fifths or fourths answer each other, such that the phrases enclosed in these intervals, taken together, exactly span the "limits of the octave," as in Ex. 6.[85] This clearer terminology is particularly needful because of a development that becomes increasingly clear as fugal history progresses: the existence of different *types* of tonal adjustments.

TABLE 2

Some tonal adjustments ***not*** called for by "old rule" of exchanging 5ths & 4ths.
Important: these are intended as subject openings only, not complete subjects.

Subject-openings



"Unneeded" tonal answers

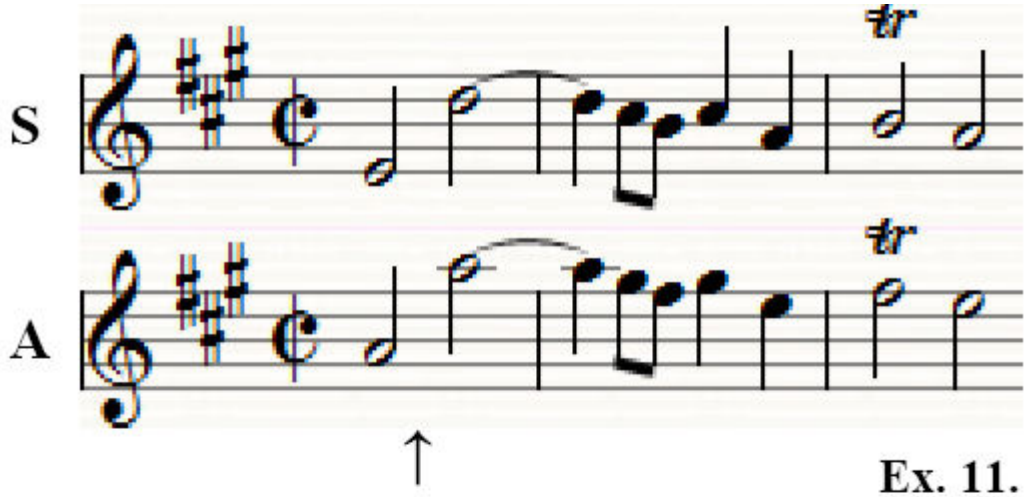
(Tonal answers in some form are possible depending on subject's continuation.)

Before around 1700, theorists tended to assume the "compass-exchange norm" (as we call it) was the only reason to give a tonal answer.[86] For an early repertory, this assumption made some sense; and even well into the modern age, the norm describes some answers well.

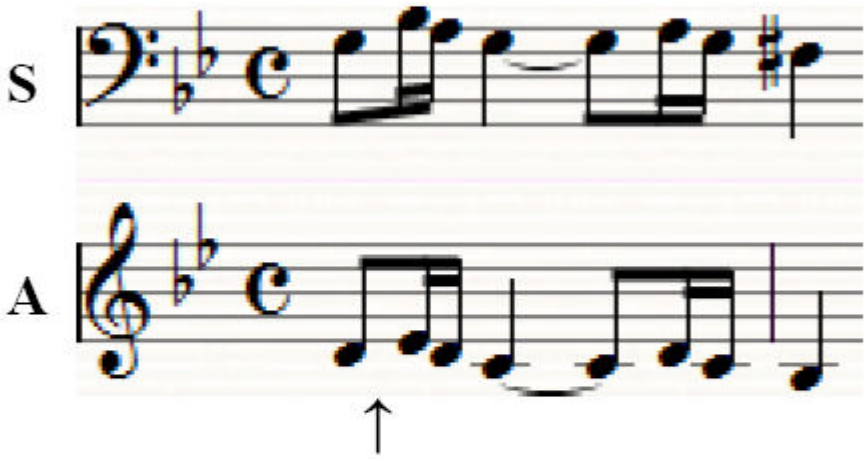
Yet many tonal answers in the eighteenth century increasingly defy explanation via the compass-exchange norm. For instance, Ex. 11 answers a seventh with an octave; Ex. 12, a fourth with a fourth (and its subject does not even contain a dominant). Considered as subject-answer pairs, these examples span not octaves, but an eleventh and a diminished seventh. Yet both answers are tonal. Why? The compass-exchange norm cannot explain. Evidently, sometimes there *are* other reasons to answer tonally.

Furthermore, "hybrid" cases can be found: answers, some of whose mutations are attributable to the compass-exchange norm, and others not. In these cases, typically only the first change is traceable to that norm. See Ex. 13. The first adjustment is attributable to the compass-exchange norm, replacing the characteristic fifth with the fourth. But the subsequent mutations clearly have little or nothing to do with conserving the original compass, which is quite abandoned. The alterations must be explained some other way.

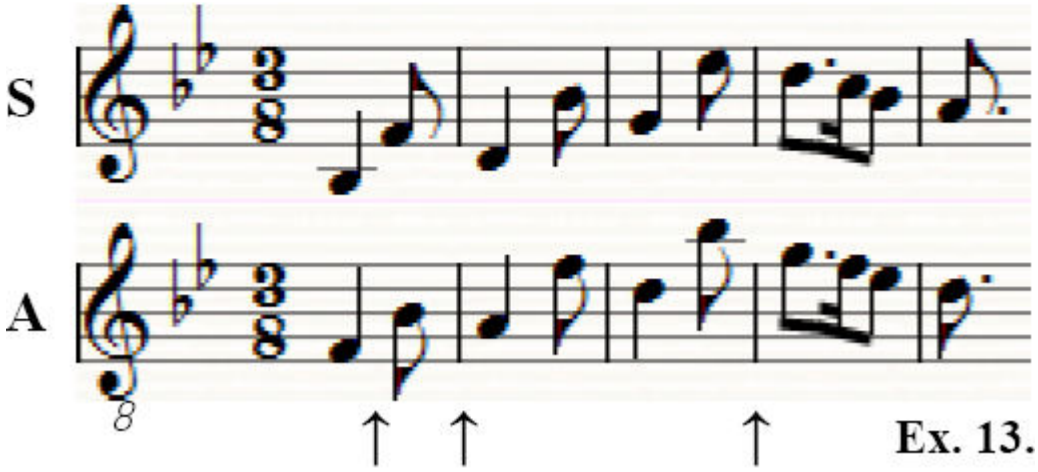
The theory proposed in this study has a way to handle these complexities. However, it will be better to postpone that presentation briefly, in order to first review what the historical theorists had to say about this. How did *they* deal with subjects for which the compass-exchange norm might be inadequate? Themes of this nature were drawing increasing theoretical interest around 1700. We turn to this theorizing next.



Ex. 11.
J.G. Albrechtsberger, model subject and answer.[87]



Ex. 12. Michael Haydn,
Verset no. 4 from *Secundi Toni*.[88]

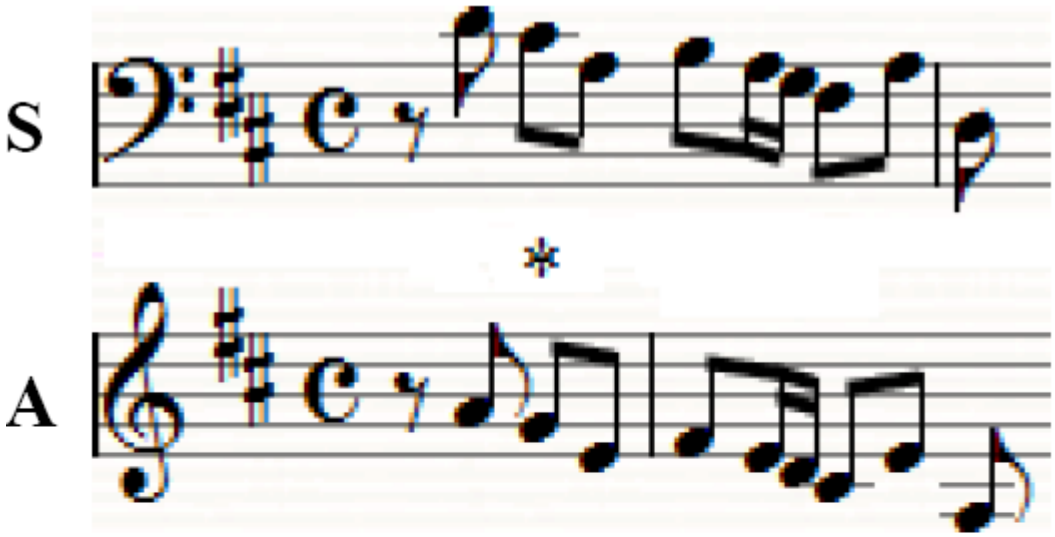


Ex. 13.
Handel, Gigue from Harpsichord Suite no. 4.[89]

b) *Key-retaining answers, as late-baroque theorists described them*

As discussed (p. 10), early-eighteenth-century theories tended to favor tonic-key-retaining answers. Before going any further, we should observe that—apart from tonal answers—there exists an alternative way to ensure this key-preservation. All one has to do is allow that fourth or fifth *separating* the subject and answer, to become diminished or augmented, where necessary to avoid "foreign" notes—as in Exx. 14 or 30. Clearly, this was sometimes done; but it has two possible effects, both seen here, that some theorists frowned upon. (1) The compass-exchange norm may in fact be abandoned, so that a fundamental fourth is not answered by a fifth, and so on.[91] (Incidentally, the baroque terms closest in meaning to the compass-exchange norm appear to have been *consociatio modorum* or *fuga per tonos.*[92]) (2) The quality of some melodic intervals will be changed. Major intervals may become minor or vice-versa, for example.[93] I will call this effect *tone-semitone exchange*, a term suggested recently.[94] Strictly speaking, tone-semitone exchange, in itself, is neither real nor tonal imitation. However, it might be used to slightly modify either. Thus, for instance, I would call the examples just cited "real answers with tone-semitone exchange." By the same token, Ex. 49 may be called a tonal answer with tone-semitone exchange.

As mentioned, theorists tended to discourage both tone-semitone exchange and deviations from the compass-exchange norm (at least without cause). Most tonal answers, therefore, were intended to project the tonic key while minimizing recourse to such methods. As seen (Exx. 11-13), the compass-exchange norm gradually proved insufficient as a



Ex. 14. Fischer, Fuga IV of Praeludium VII, *Blumen-strauss*.[90] The diminished fifth between subject and answer at the asterisk causes the subject's first two intervals, minor second and major third, to become a major second and minor third, respectively, in the answer.

guiding or explanatory principle. For some themes, such as more complex ones, more or different kinds of adjustments might be wanted.[95] Furthermore, over the years, composers took increasing care to close subjects cadentially.[96] This in turn implied that the answer's close—not just its open—should support the key. In short, what seemed to be needed was a methodology that could suggest a suitable answer for any subject, all through: beginning, middle and end.

A system attempting to address this need appeared in several eighteenth-century texts.[97] (The compass-exchange norm did

not disappear, so the methods coexisted, compatible up to a point.) Table 3 summarizes this new framework, condensing it into four points. These yield real or tonal answers depending on the subject. The table, drawing on texts by Mattheson, J.-P. Rameau and others, is a composite of theories rather than a replica of any single theory, since no two scholars presented it exactly the same way. (This is true of most musical theories, of course.)

One might break down Table 3's guidelines into two groups: the first two, the "stricter ones"; and the last two, the "exceptions and alternatives," or what the older theorists called "licenses."

Nonetheless the first two—embodied also by the chart in the table—are especially significant for the way they ensure the answer will clearly share the subject's key. This is because they "pair up," not only $\hat{1}$ and $\hat{5}$,[98] but also their respective thirds, $\hat{3}$ and $\hat{7}$. This weaves tonic-dominant correspondence deeply into the schema, so to speak, to affect not just "root" notes but also "harmonies." Further, guideline 2 tends to "load the dice" in favor of more, rather than fewer, tonic notes in the answer. This is because the tonic is assigned as reply to two notes, while other degrees answer just one note each. Also interesting, guideline 1 sets up a symmetry: most notes are each other's answers. This ensures many subject-answer pairs are reversible—that is, the subject can serve as the answer and vice-versa[99] (though points 2-4 can undercut this reversibility.)

Ex. 15 illustrates how well the system can work. For this, the chart alone suffices. (It is illuminating, incidentally, to see how very differently a strict "key-change" theory would treat this

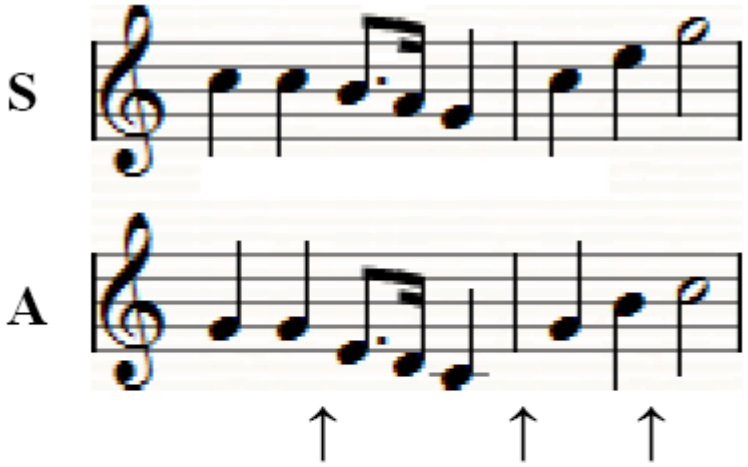
TABLE 3: Summary of some guidelines for fugal answers widely published in the eighteenth century

1. Begin by assuming that throughout the subject and reply, each of the scale degrees $\hat{1}$, $\hat{2}$ and $\hat{3}$ is both answered by, and answers to, its own upper fifth (lower fourth). This is shown in the chart under the next guideline.
2. $\hat{4}$ is normally answered by $\hat{1}$. Sometimes the opposite occurs, tonic answered by $\hat{4}$; that might be useful if the tonic is at the peak of a melodic range, at which point this option can smooth out the melody. The following chart sums up the first two guidelines.

(subject)	**1**	**2**	**3**	**4** or **5**	**6**	**7**	**8**
	|	|	|	V	|	|	^
(answer)	**5**	**6**	**7**	**1**	**2**	**3**	**4** or **5**

3. If the above suggestions produce an unsatisfactory result, then apply the guidelines only to the first, last, and perhaps other prominent notes. For all other notes, freely substitute other "pairings" by fourth-or-fifth. For example, one could pair $\hat{5}$ with $\hat{2}$, or $\hat{6}$ with $\hat{3}$, as necessary to obtain a better melody or imitation. Just do not use sounds outside the key.
4. The use of diminished fifths or augmented fourths as "interval-of-answer" (for example, answering F with B) is avoided if possible, but does occur, especially with passing notes, lower neighbors and other, exceptional situations.

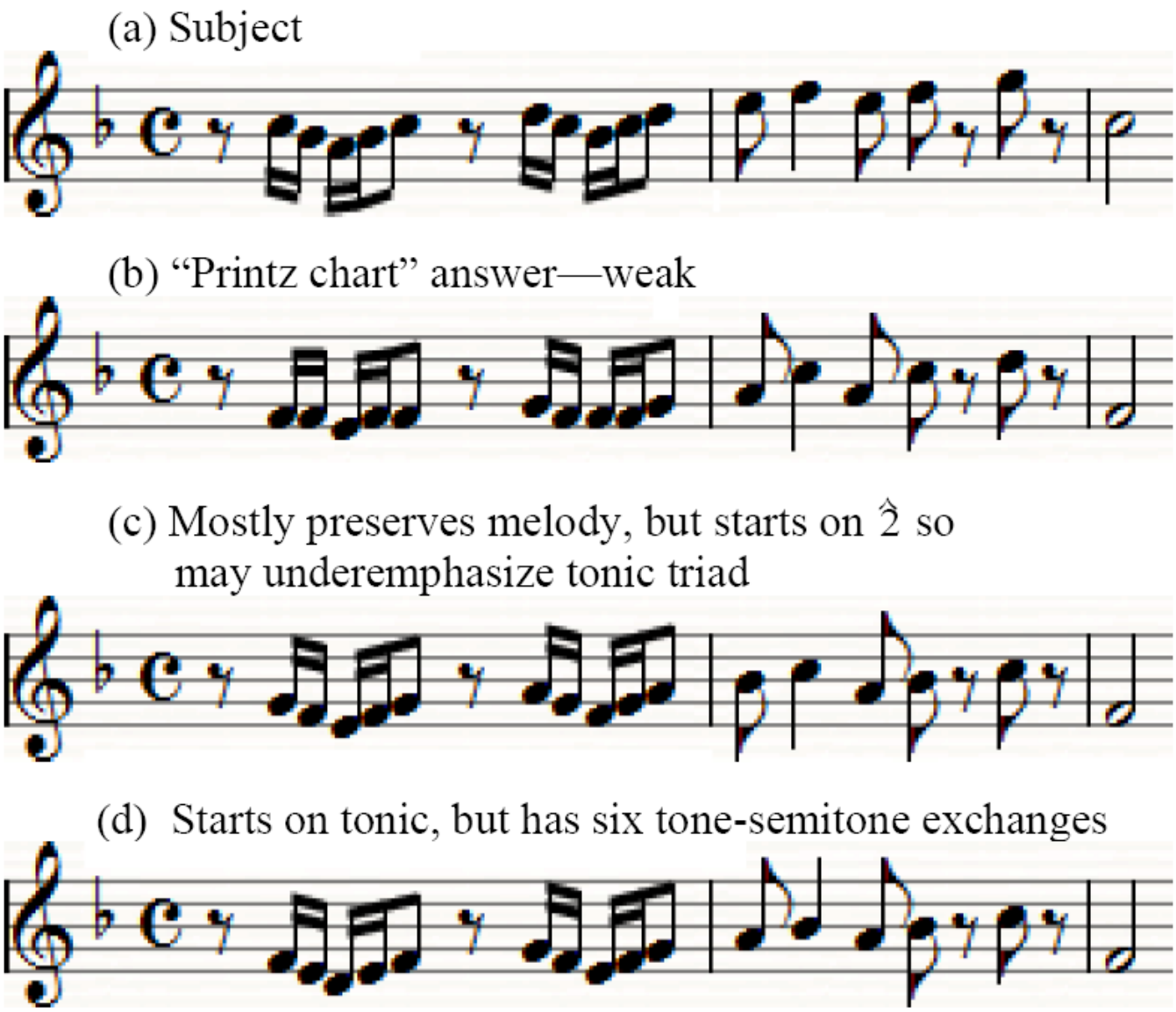
subject: by exact transposition to the fifth.[100]) Also instructive is Ex. 3. There, the answer does not literally follow the chart. Still, it is easy to imagine a student successfully replicating Handel's result by taking all four norms of Table 3 into account holistically—the intended use.



Ex. 15. A subject answered using the "Printz chart." Quoted in Walker, *Theories of Fugue from the Age of Josquin to the Age of Bach*.[101]

We will refer to the chart in Table 3 as the "Printz chart" after Wolfgang Caspar Printz, who appears to have proposed it in its earliest, albeit somewhat different form.[102]

Yet this overall methodology is not without drawbacks. The subject in Ex. 15 was suggested by Printz himself, evidently with the aim of showing his schema in a good light,[103] and the answer works well. But applying the chart to Ex. 16a yields a very different outcome: 16b, a more inopportune, even repellent result than which seems hard to imagine. This subject, of course, has been contrived expressly to put the chart in the worst possible light. And naturally, this is why guidelines 3 and 4 exist: to assist with just this sort of theme. With these in mind, one might devise a better (tonic-retaining) answer, perhaps such as Ex. 16c or d.[104] Yet even supposing one is content with the decision, a larger misgiving seems to persist. It is understood that charts are meant to be



Ex. 16. A subject contrived to expose limitations of the "Printz chart." Three conceivable tonic-key solutions are shown.

supplemented by good judgment,[105] but in cases such as Ex. 16, judgment ends up having to do nearly all the work. And this is not even the hardest case: we have yet to touch on minor keys, chromaticism and unconventional themes. A knotty question that seems unclearly resolved is where to put mutations. Composers' choices regarding this delicate issue are deliberate, yet often counterintuitive. For instance, in Ex.

18, a composer would typically effect mutation only at the *beginning* (even though this implies renouncing both exact imitation and the Printz chart immediately); but in Ex. 17, only at the *end* (forgoing a chance to tonally answer a first, conspicuous dominant). These important observations seem nowhere explained or predicted in Table 3, let alone the chart (or the compass-exchange norm). Eventually, one might be tempted to ask whether the Printz chart has any substantial value at all. Ultimately, history showed that it does—but perhaps not in ways earlier theorists would have predicted. That will be clearer further on.

Let us discuss the minor mode. For key-retaining answers, minor poses "difficult and complex" problems, as Bullivant has observed,[106] because it is difficult to consistently obtain perfect fifths or fourths between subject and answer. As we saw, the perfect intervals were preferred. In major, this preference is satisfiable at least usually; but in minor much less so.[107] Particularly uncooperative are the characteristic notes of "harmonic" minor: $\hat{6}\flat$ and $\hat{7}\#$. The former, under the Printz chart, would be partnered with $\hat{2}$; yet the resulting interval is imperfect. Guideline 3 offers a potential way out: dispense with the chart and pair $\hat{6}\flat$ with $\hat{3}$ (see Exx. 19a or 36), the melody allowing. Yet the leading tone resists even that kind of solution: it has no counterpart in the key either a perfect fourth *or* perfect fifth away.

Consequently, composers answering minor-key subjects often are forced to choose between "introducing foreign notes or changing the nature of the theme, sometimes quite substantially."[110] Exacerbating this, baroque theorists do not treat this topic very satisfactorily, though their exemplars are

good. The application of the Printz chart to minor, advocated by some, was not Printz's own suggestion. Mattheson attempted to clarify matters by proposing a kind of expanded Printz chart: a schema embracing the whole chromatic scale, and thereby, the minor mode.[111] His chart makes at least one important suggestion, which we will revisit on the next page. However, for the most part, this chromatic chart is not a great explanatory aid.[112] Beneath the surface it can be shown to be closely based on the "major" Printz chart,[113] and therefore shares most of its limitations. Among other issues, Mattheson's schema disallows the aforementioned answering of $\hat{6}\flat$ by $\hat{3}$—ironically a procedure he himself elsewhere recommends (Ex. 36).[114] For such reasons,[115] there is little to be gained here by delving further into the baroque theories for minor.

What can we conclude from our overview of late-baroque theories of the fugal answer? We can conclude that they offer valuable insights; that their advocacy of key-retaining answers was not idle talk, but correlated with a technique that was really used; and that our musical age might have done well to give these texts closer attention, particularly the issue of compass. And yet, one need not be a Galeazzi (p. 2), seething over alleged secrecy, to recognize that even before his day, there was room for improvement in fugal-answer theory—even in explaining the repertory to which it explicitly referred. For this reason, we will attempt to clarify things by proposing a revised theory of the tonic-retaining answer, next.

c) *An attempt to clarify how "key-retaining answers" really were constructed*

Our next step is to introduce a somewhat new theory of key-retaining answers, not to discard old doctrines wholesale, but

to build on what works in them. This time, we will address minor immediately, rather than waiting, so we can include minor-key examples in all future parts of the study.

The minor mode

The challenges involving minor were outlined on the past page. To address these, I have studied the repertory to try to clarify points left unclear in the texts. My findings leave little doubt that to deal with minor, composers fell back on a time-honored dictum: where the obstacles are greater, one takes correspondingly greater freedoms.[116] Therefore all we really need to show is how and when the familiar "rules" might be relaxed.

For the time being, let Table 3 serve as a default answer-procedure; thus, assume we will use it whenever its results are acceptable (whatever its limitations it is adequate for this discussion).[117] That said, composers allowed themselves three additional licenses, beyond those in the table, all of which are commonly found in minor-key fugues—but not employed *simultaneously*, with rare exceptions. They are:

1. *Preserve perfect intervals between subject and answer by sacrificing the traditional conventions of minor voiceleading*—i.e., the well-known rule-of-thumb "$\hat{6}$#-$\hat{7}$# rising, $\hat{7}$♮-$\hat{6}$♮ falling." Examples: Exx. 19b, 20, 21 and 25 (see the last F♮ and its answer).

   When using this "license," the subject or answer can sound any succession of tones from any of the three forms of the minor scale. Even the direct succession $\hat{7}$♮-$\hat{8}$ is sometimes heard, and not only in very early fugues.[118]

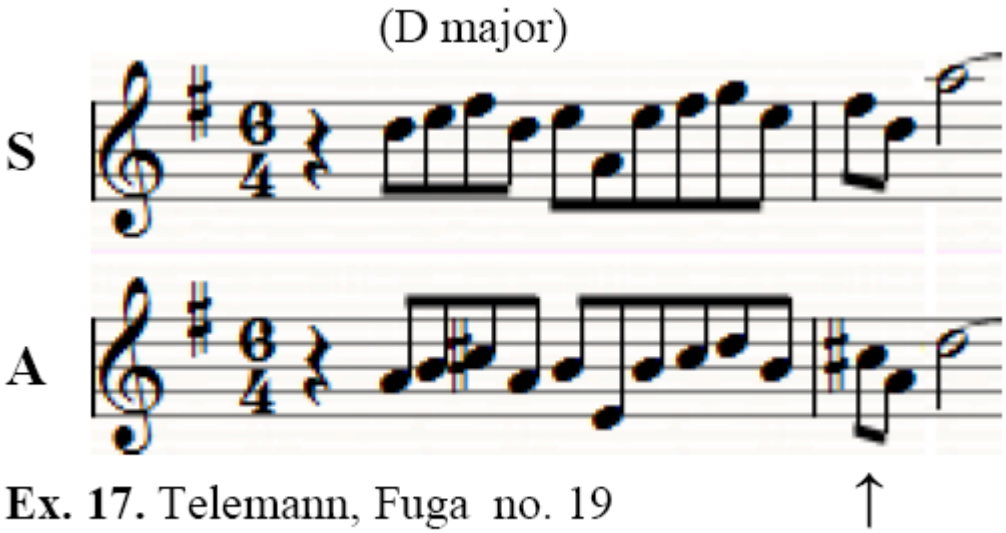
2. *The reverse: preserve the traditional voiceleading conventions by sacrificing the perfect intervals*. Again, done with reasonable care this is common. Examples: Exx. 22, 23.

3. *Answer the leading tone with a non-cadential "Picardy third"*—or even vice-versa. This surprising technique requires some explanation. In it, $\hat{7}$# and $\hat{3}$# are made to act as a mutually answering pair, to remedy the fact that ordinarily there is no note in the scale a perfect fourth or fifth away from the leading tone. Examples: Exx. 24-26.

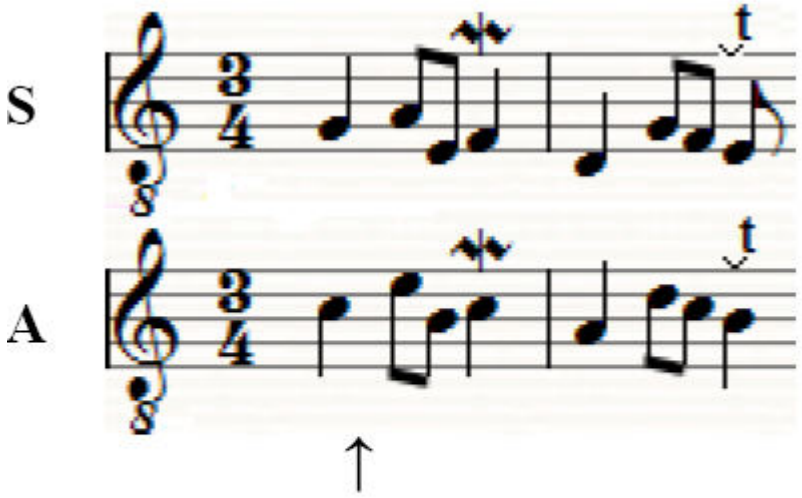
   The use of $\hat{3}$# in "minor" fugue themes has nonplussed some modern listeners.[119] But baroque theorists (and composers, judging by their works) were at ease with it. Rameau and Mattheson explicitly suggest it; others include it in exemplars without comment.[120] It was used with considerable freedom. The notes involved need not be approached or quit in any special way. Composers do appear to have taken one small precaution, though. If $\hat{3}$# was used in the subject or answer, then the ordinary $\hat{3}$♮ was usually *also* heard at least once in the subject or answer, helping to preserve the minor character.

Note: the above techniques sometimes create impressions of modulation. For instance, $\hat{6}$ #-$\hat{5}$ in minor may feel like modulation to the dominant; $\hat{3}$#-$\hat{4}$, to the subdominant. These effects are normal. Baroque theorists did not regard them, in themselves, as implying foreign keys.[121]

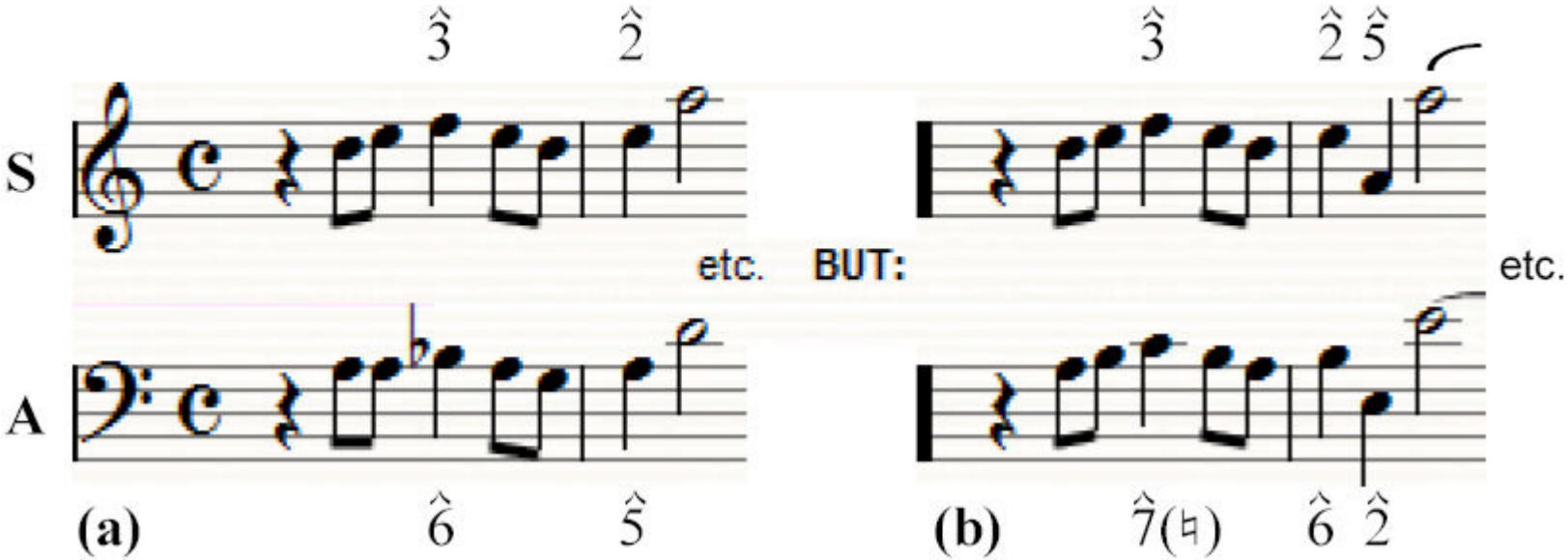
As stated, the "licenses" are normally used one at a time—possibly more than once per subject, but not simultaneously,



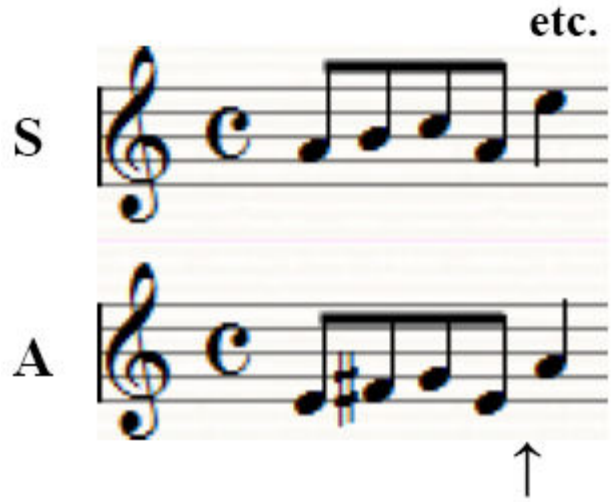
Ex. 17. Telemann, Fuga no. 19 for organ from *XX Kleine Fugen*.[108]



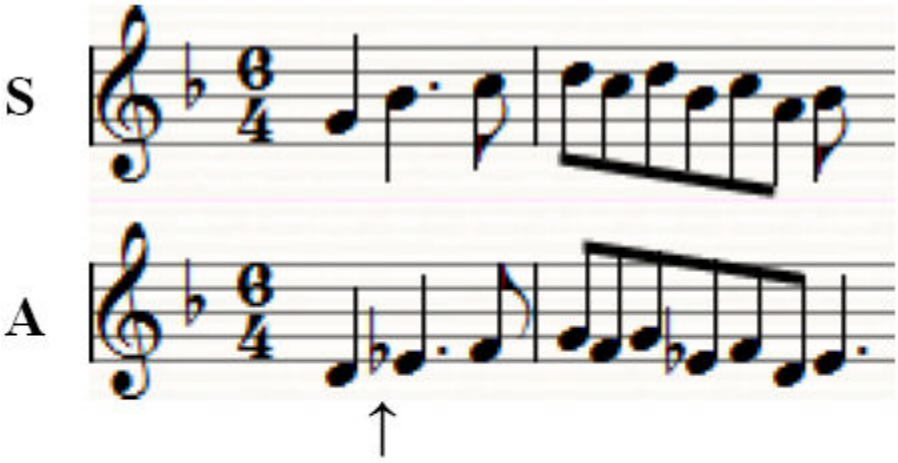
Ex. 18. Gottlieb Muffat, Toccata V, Fuga I from *12 Toccatas*.[109]



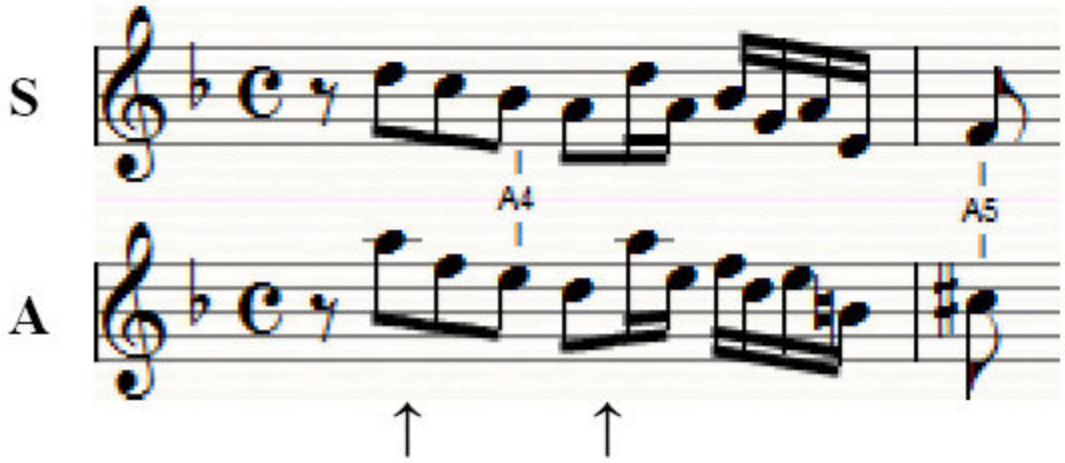
Ex. 19. From Rameau: two answers, one tonal, one real, to almost identical subjects. The scale-degree numbers are those indicated by Rameau in his text, showing he conceived all the material as inhabiting the tonic key, D minor (with a "Dorian" signature). Rameau does not say how he decided which subject should receive the tonal, and which the real answer; but his choice accords with contemporary norms concerning compass. (*Traité*, 334.)



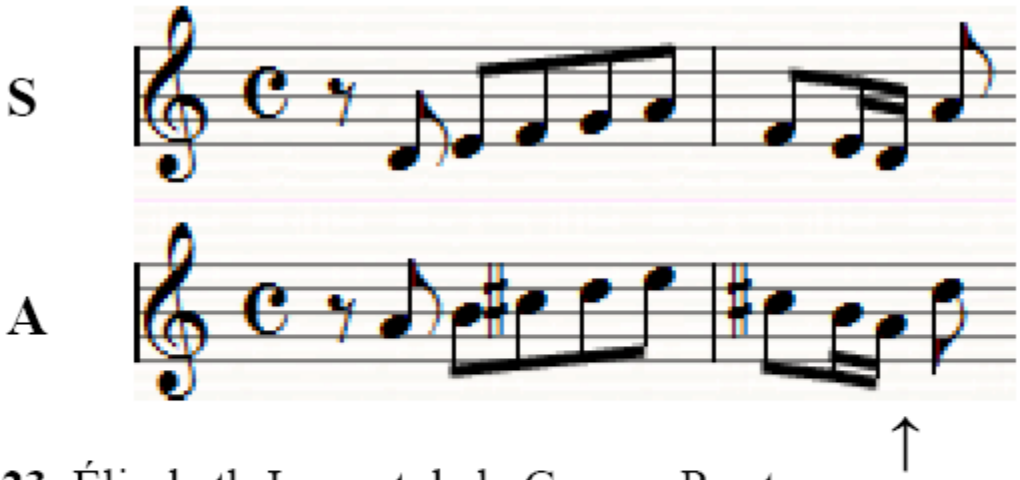
Ex. 20. Bach, Fugue in A minor, BWV 904.[122]



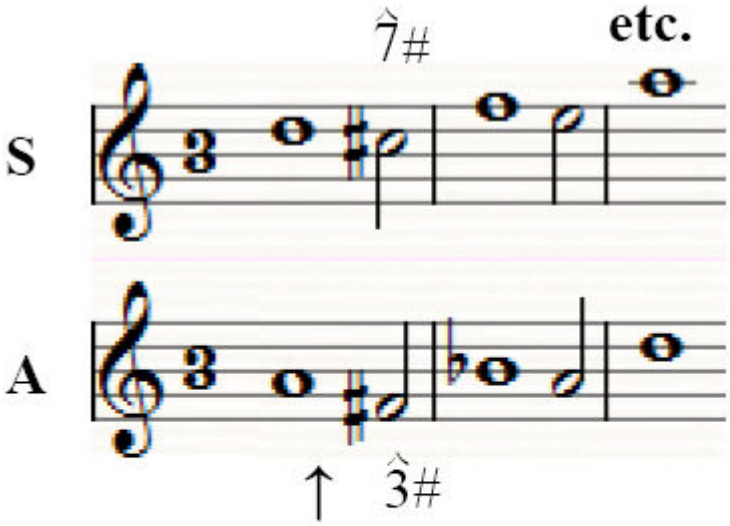
Ex. 21. Dieterich Buxtehude, Praeludium in G minor, BuxWV 150. ("Dorian" key signature.)[123]



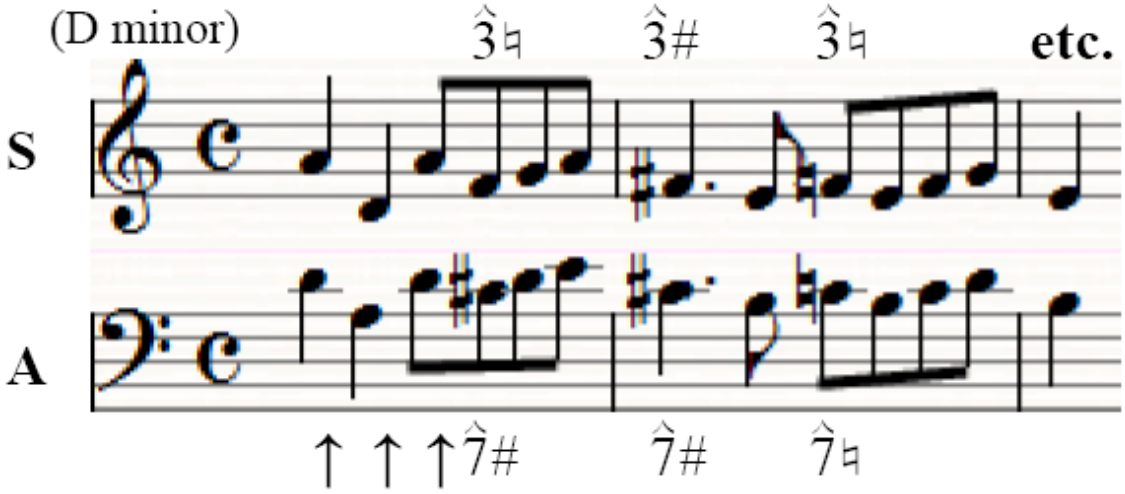
Ex. 22. Purcell, Sonata No. 4 in Four Parts, Allegro. "Normal" minor voiceleading is retained at the expense of perfect intervals between subject and answer.[126]



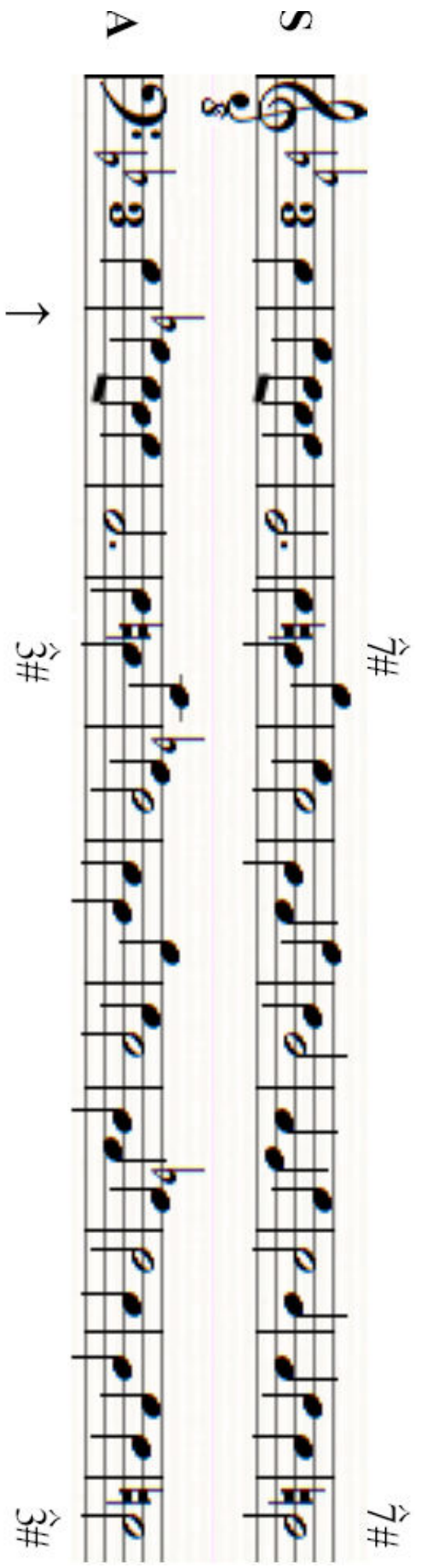
Ex. 23. Élisabeth Jacquet de la Guerre, Presto from *Sonates Pour le Viollon et Pour le Clavecin* (1707; first sonata). Another case of "regular" minor voiceleading preserved at the expense of perfect intervals.[127]



Ex. 24. Rameau, from *Traité*. "Sometimes we may even add a sharp to the mediant of minor keys… when it corresponds to the leading tone."[129]



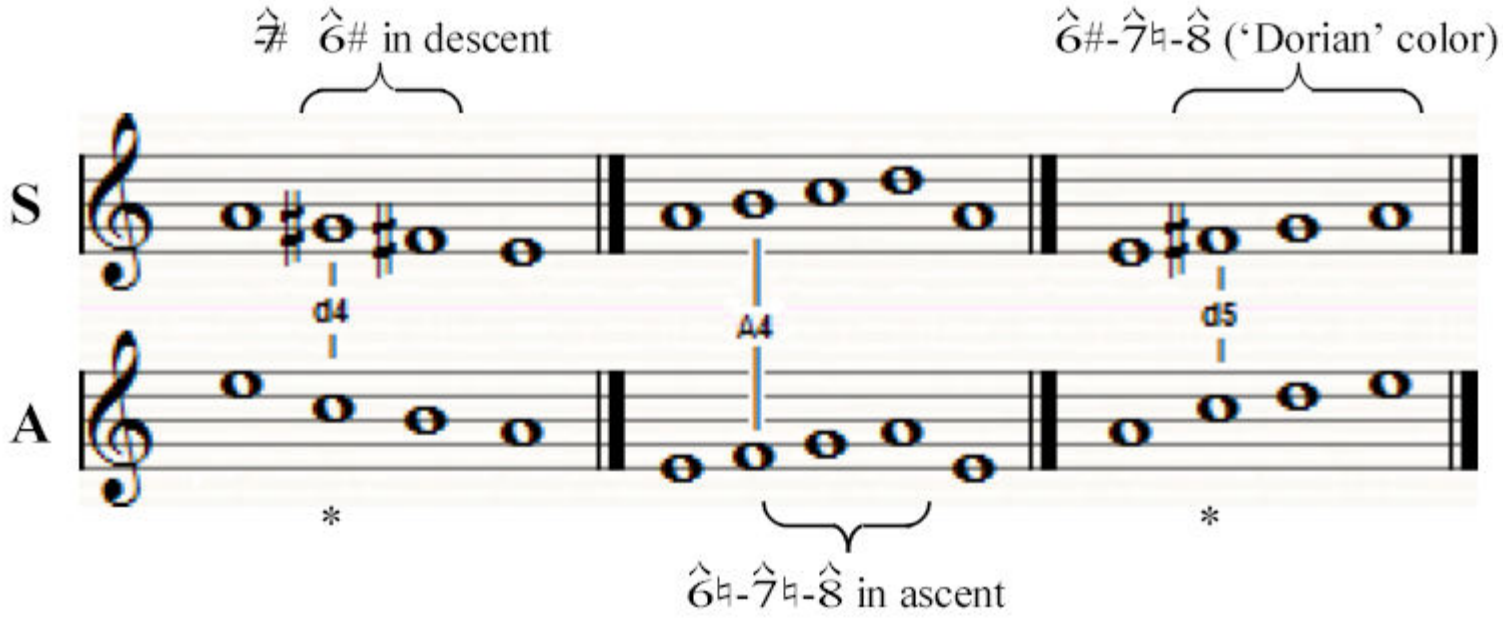
Ex. 25. In this subject and answer, Charles Masson makes prolific use of all three "liberties" mentioned in the present study relating to minor. (They are used in the same subject, but not simultaneously.)[130]



Ex. 26. Mattheson, Fuga No. 6 from "Les Doits Par-lans" (C minor)[128]

TABLE 4: Events not likely to occur in fugues in minor

Simultaneous use of more than one of the three "liberties" described in points 1 through 3 on page 15



Most of these melodies are possible to find on their own, but simultaneous use of unconventional voiceleading, "imperfect" intervals-of-reply or the raised mediant are rare. Note at (*): Substituting C# in order to eliminate the diminished interval would arguably just replace one "license" with another. However, one could remove one "license" by deleting the F# with its answer.

which is never necessary. Table 4 gives examples what "simultaneous licenses" would look like if they did occur.

"Key-retaining answers" (and their subjects) rarely if ever use the lowered supertonic, $\hat{2}\flat$. It would be difficult to do so without leaving the key, either in the answer or the subject.[124] Given that, and the fact that our minor-mode "licenses" provide a *de facto* ten-note scale even without it, this study will treat $\hat{2}\flat$ (along with $\hat{4}\#$) as foreign to the tonic scale for the purposes of key-retaining answers, except if the note is acting as a chromatic passing tone.[125]

Having addressed minor, we can now move to the heart of our revised theory. Here we will formally introduce the lassification system alluded to in the introduction.

Three basic types of subjects

Three types of fugue subjects are distinguishable, based on their melodic features and the kinds of answer-procedure they conventionally elicit. (These categories have been hinted at by past writers, though not all in the same text.[131]) They are:

1. Lead-in themes.[132] These are subjects that immediately—and generally once only—complete the closed compass of a fundamental fifth or fourth, and do nothing else. This motion may pass through intervening notes, provided they do not contradict the key.

   In other words, $\hat{1}$ and $\hat{5}$ (ascending or descending, and in either order) delimit the subject both in time and space, so the subject ends as soon as both have been heard. Intervening notes, if any, can move as they wish with the

above provisos, including changing direction or temporarily returning to the first note.

Examples: Exx. 6, 27 a-d and Table 5. The left side of Table 7 (p. 52) lists some additional features that are common in lead-in themes, though not necessarily part of their definition.

The answer: These themes traditionally evoke a presumption of a tonal answer following the "compass-exchange norm" (pp. 25-27).

2. Unconstricted themes. These are subjects that: (1) are not lead-ins, and (2) do not begin with a phrase that would, taken alone, be considered a lead-in. Other than that, they are free.

   Accordingly, their range can be any size, large or small, provided only that if it be a fifth or fourth, it not be the kind that spans $\hat{1}$ and $\hat{5}$. Or, they might outline that very fifth or fourth, just not at the beginning.

   Examples: Exx. 28, 19('b' but not 'a'), 17 and 18.[133] Table 7, right side, lists some additional traits that are common, but not definitionally required, for unconstricted themes.

   The answer: The "default" presumption is a real answer, barring specific reasons for a tonal one. If the answer were tonal, this would evidently be for some other reason than the compass-exchange norm, since the relevant compass is not in use. (To be discussed.)

3. Combination themes. These are subjects that *first*, complete the closed compass of a fundamental fifth or fourth,

as a lead-in subject would; and *then*, do something else—anything else. Notice what this implies: the combination theme is constructed like a lead-in theme, followed directly by an unconstricted theme.

Examples: Exx. 2, 3, 22, 25, 19('a' but not 'b'), 49 etc.

The answer: Answer procedure is typically like that of a "lead-in" subject for the "lead-in" section, and like that of an unconstricted subject for the rest. (Further ahead, we will discuss a few ways in which the basic combination-theme "template" can be varied without contradicting its basic premise.)

The proposed three types cover any possible type of subject, no matter how unconventional. This is because the unconstricted category has expressly been defined so broadly as to encompass any subject not ascribable to the other two classes. (An unconstricted subject does not even have to be tonal music, although this study will focus on tonal music.) Besides being comprehensive, the framework is easy to work with, because each kind of subject is associated with its own answer procedure. Next, we examine each class more closely.

Lead-in themes. It is well known that many subjects open with motifs such as one of the four in Table 5. Less often remarked is that such motifs need not only serve as beginnings. As Langlé suggests, they also can be (and sometimes, have been) used as complete subjects![134] Clearly, such subjects would probably not garner prizes for originality today, but originality is not our focus at present. Overall thematic structure is. Table 5's subjects fit our definition of *lead-in* themes, and are indeed archetypes of the kind. As lead-in themes, too, they

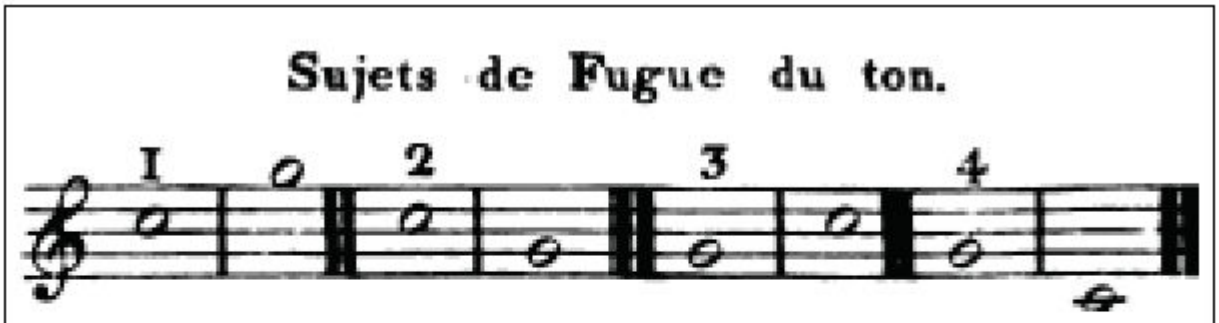


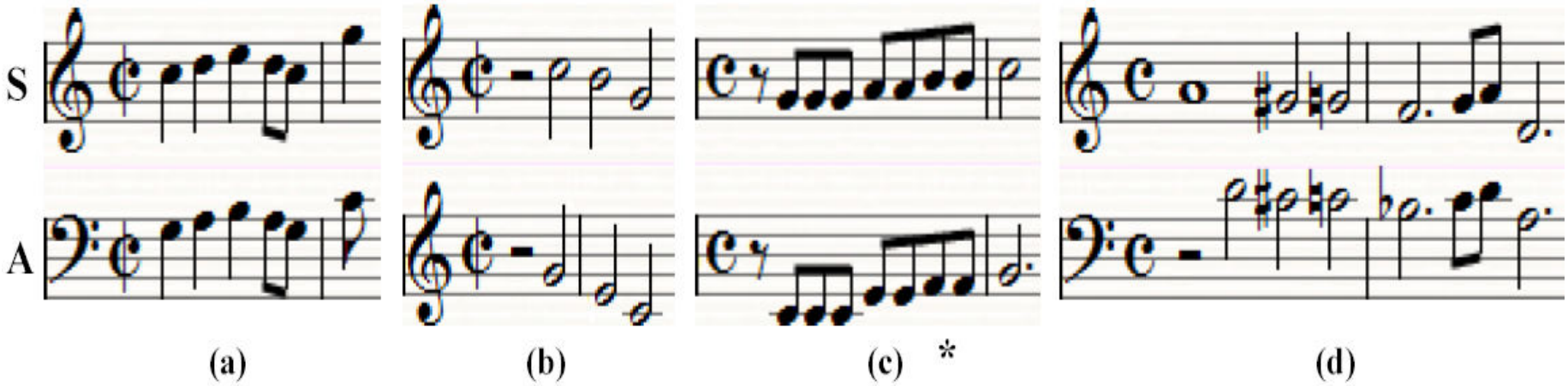
TABLE 5

"Subjects of tonal fugue," after Langlé (*Traité,* 41)

are highly amenable to tonal answers via the compass-exchange norm. Although this does entail exchanging $\hat{1}$ and $\hat{5}$, one should recall the norm does not call for exchanging "just any" tonic and dominant. Rather it calls for exchanging two special compasses, and applies here because the subjects respect those.

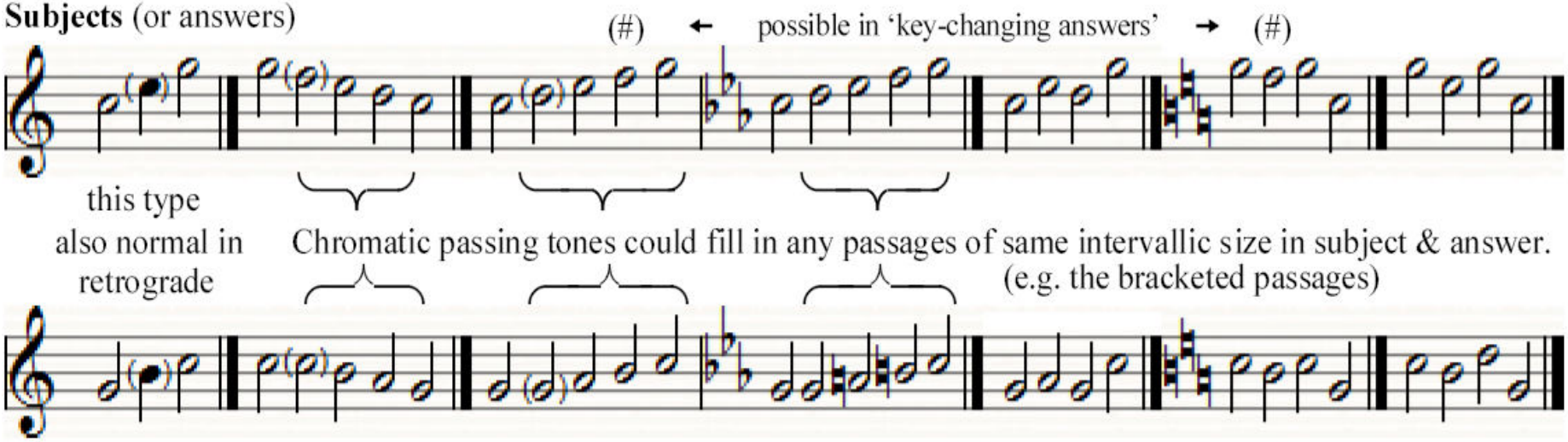
The "skeletal" subjects of Table 5 are expandable.[135] This is achievable by repeating or rhythmically varying the two notes; inserting new notes between them; or both. These expansions also qualify as lead-in themes—let us call these "florid" lead-ins—provided that, as stated, the intervening notes do not exceed the original compass or plainly modulate.[136] See Ex. 27. There is nothing wrong with exceeding (or undershooting) this range: it simply means the subject would be more conveniently labeled as something other than a lead-in. To be sure, the latter type[137] is sometimes described as ideal in some sense[138]—as highly conducive to tonal clarity (it is also an old type)[139]—but obviously it has a cost in terms of reduced possibilities.

Lead-ins—including "florid" ones—are typically answered via



Ex. 27. Here each of Langlé's four "subjects" in turn is expanded to form a longer lead-in theme. All these are complete, self-sufficient subjects quoted from fugues whole expositions are wholly in the tonic. (a) Purcell, from his first didactic exemplar of fugue as published in *An Introduction to the Skill of Musick*.[140] (Notable is how closely Purcell associates the very definition of fugue with the type of subject classified here as a "lead-in.") (b) Giovanni Battista Martini, model fugue.[141] (c) Gottlieb Muffat, Missa in C, "Et in Terra," 2nd part.[142] ("Tone-semitone exchange" occurs where A-B-C is answered by E-F-G.) (d) Johann Krieger, Fuga in d.[143]

TABLE 6: Common "lead-in" types, and typical answers.
Subject & answer roles reversible throughout. All can work in minor.
Any intervals of same size in subject & reply, can be "filled in" chromatically.



Notes: the 'scale' types often receive real answers, especially if $\hat{1}$ or $\hat{5}$ can be first note of reply. Also: the 'reverse' pattern, in the *fifth* bar, usually differs in major. In the *last* bar, 'reversal' may be disputable, as the lower form exits its fourth, though this has not deterred Bach (see Ex. 89). In the *first* bar, 'GBC' version specifically is rare as subject.

TABLE 7: Typical features of lead-in subjects and unconstricted subjects. (Ordered so as to make comparison easy).

Lead-in	Unconstricted subject
▪ Is **enclosed in a fundamental fifth or fourth**, both in pitch-space and time, with or without intervening notes.	▪ It **does not obey the specific constraints directly at left**. Nor does it characteristically begin with a motif that does so.
▪ Uses the **tonic key** only.	▪ Has **no inherent limit** on its tonality, except that the study of "key-retaining answers" does presuppose tonic-key subjects.
▪ The **answer is typically tonal and retains the tonic key** using the compass-exchange norm.	▪ The **answer may be real or tonal**; it may be key-retaining or not. It depends on the subject and the context.
▪ Usually though not necessarily **short and simple.**	▪ May be of **any length or complexity** (in theory. In practice, moderation is usually a watchword.)
▪ Most often uses one or more **leaps**. (This tends to facilitate answering.)	▪ Tends to provide greater opportunity for **stepwise motion.**

the compass-exchange norm. (However, some answers break out of their "allotted" fourth by one step in the middle notes.) As Mattheson and others make clear,[144] this process is intended to yield a key-retaining answer: subject and answer alike are presumed to inhabit the tonic. A study of the repertory confirms that this interpretation generally makes sense.[145] Already in the "skeletal" forms of Table 5, or simplest expansions, the notion that two keys are in play feels forced and contrary to the ear.[146] Florid lead-ins often make the key-retaining quality even clearer. One revealing detail is the relatively high frequency with which composers in these contexts preserve the tonic scale even at the cost of "tone-semitone exchange" (p. 29) between subject and answer. See Ex. 27c, at the asterisk. Although avoided in the main, tone-semitone exchange is commonly, even systematically, tolerated in lead-ins.

The compass-exchange norm alone does not tell us how to answer the inner notes of a florid lead-in. Is a specific description possible for these? Yes. A key point is that lead-ins, even "florid," tend often to be brief and simple, even formulaic.[147] A few melodic types seem to arise repeatedly, perhaps as a byproduct of the "circumscribed"[148] framework. Certainly, variety is obtainable in several ways, including simple chromaticism (usually limited to chromatic passing tones, as in Ex. 27d.[149]) Still, it appears that often, part of the point of using subjects of this nature was precisely their penchant for succinctness and tonal clarity.

The upshot is that the answers tend to be equally simple—and thus predictable. One can even reduce common possibilities to a small table, such as Table 6.[150] This *could* be memorized, but instead I would suggest noticing some patterns. First, one alteration usually suffices, either at the open or close. Also: the

"Printz chart" (p. 32) is basically the default solution.[151] This usually works well when the middle notes emphasize either the mediant, or its "Printz partner," $\hat{7}$. But if ignoring the chart can produce a better answer, within the key, that is certainly feasible. Composers tended to avoid mutations that exchanged fourths with thirds, or changed steps to non-steps; but steps were treated as less sacrosanct at the open, and leaps to the mediant were totally accepted.[152] Real answers were never out of the question. There is no definite rule for when to use them;[153] but they are particularly common with themes that otherwise, would tend to force the abovementioned "undesirable" changes. Such subjects include those that fill the triad either wholly stepwise, or with one sole, and non-mediant, inner note (example: $\hat{1}$-$\hat{2}$-$\hat{5}$). Real answers that start on $\hat{1}$ or $\hat{5}$ are treated as preferable to those that do not. Pauses, either explicit (i.e. rests) or implied, offer opportunities to mutate. One should not "sweat the details"[154]—only the first and last notes really matter, sometimes just the first.

Note: on occasion one hears a subject built, in effect, as an uninterrupted series of lead-ins, each individually enclosed in its own fundamental fourth or fifth. As Ex. 15 illustrates, an easy and effective way to answer these is often to reply to each segment as though it were a lead-in subject.

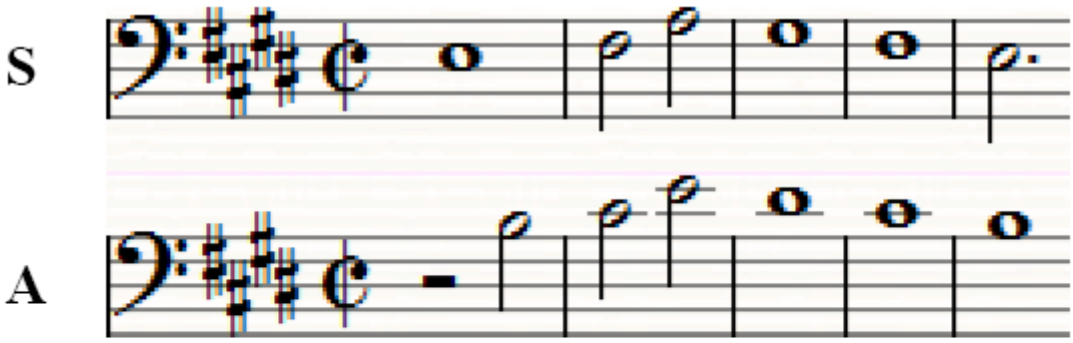
Typical features of lead-in subjects are summarized on the left side of Table 7.

"Unconstricted" subjects. Our second category is "unconstricted" themes. On p. 47 they were defined. (The examples cited there are "all-tonic," only because for now, we are looking at key-retaining answers). Some of their common characteristics are listed in Table 7, right side.

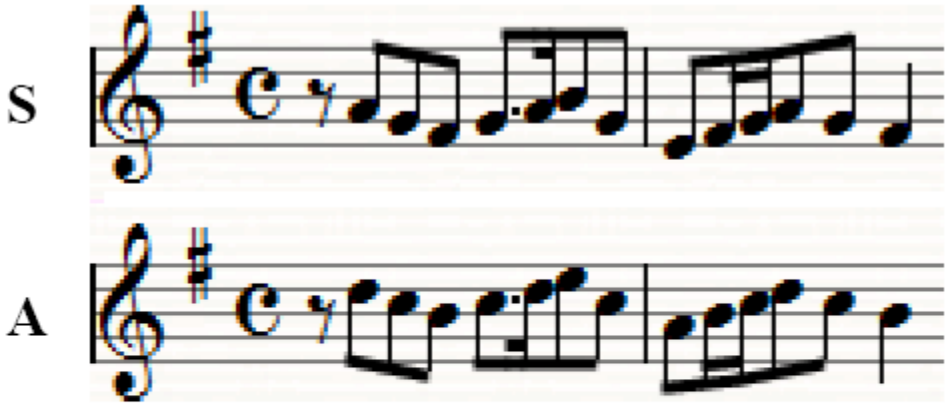
“Unconstricted” themes are tied to no automatic expectation of a tonal answer. This was emphasized on p. 47 and by means of Table 1. It can be illustrated yet again with Ex. 32, with its conspicuous $\hat{5}$’s and yet a real answer.[155] That said, how *would* one answer an unconstricted theme, assuming, as we still are for now, that the answer is to stay in the tonic?

The unconstricted subject will generally elicit a real answer if two conditions are met, and sometimes even if not.

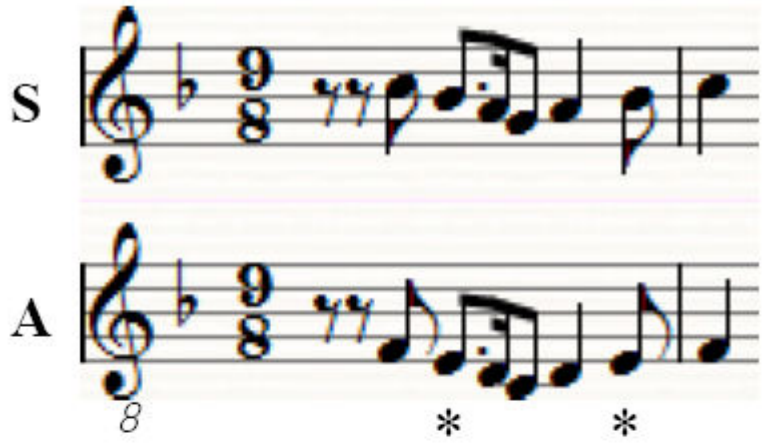
The *first* condition is that the first and the last note (the “outer notes,” henceforth) would be answered at the same interval based on the Printz chart (p. 32): either both “fourth-up” (equivalent to fifth-down—such equivalencies can be assumed throughout), or both “fifth-up.” The condition is met, for example, if the outer notes are $\hat{1}$ and $\hat{3}$; but not $\hat{3}$ and $\hat{5}$, because the chart answers these at different intervals. The reason for this condition is that *“by-the-chart” answers for outer notes* are indeed the norm;[156] this norm does, in fact, foster a certain tonic-dominant correspondence; but its observance does compel an adjustment if the outer notes are answered differently. Two qualifications are necessary. First, this convention is followed less strictly for the last note. Second, the Printz chart is ignored altogether for degrees $\hat{2}$ and $\hat{6}$. These are instead answered in whichever way least changes the subject and preserves the key.[157] Why? Presumably because these two, along with their own “Printz answers”—(each other)—lack obvious relationships to primary chords, rendering the chart moot. If both outer notes are $\hat{2}$ or $\hat{6}$—a vanishingly rare case—then any tonic-key answer can be chosen (assuming a key is discernible!) I address these unusual possibilities because I do not wish, nor is it necessary,



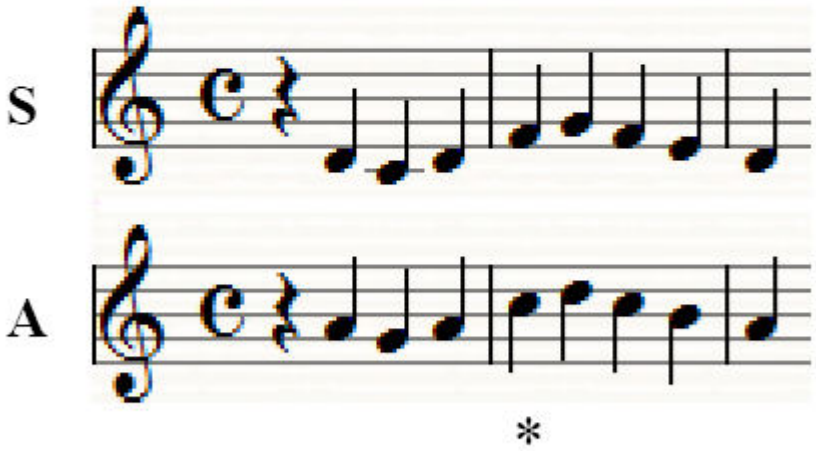
Ex. 28. Fischer, Fuga from Praeludium VIII, *Ariadne Musica*.[160] That a nearly identical theme appears in Bach's WTC Book 2, is well known. One difference is that Fischer's, earlier fugue is in the tonic throughout its exposition.



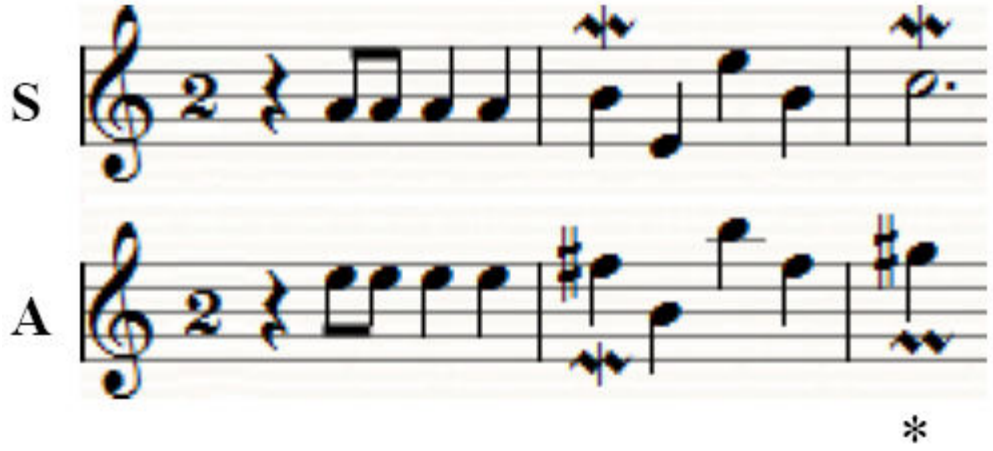
Ex. 29. Model subject and answer from Marpurg's fugue treatise (1753).[161] The subject moves from $\hat{2}$ to $\hat{7}$; the real answer proceeds from $\hat{5}$ to $\hat{3}$, disregarding the Printz chart for the first note.



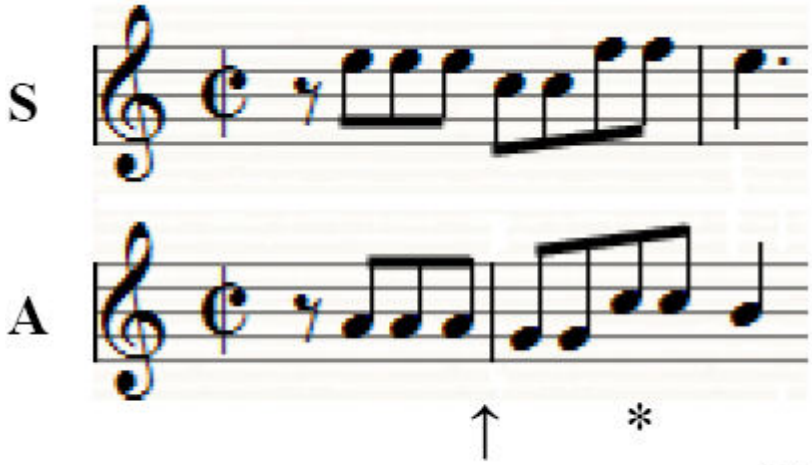
Ex. 30. Gottlieb Muffat, from *Missa in F*.[162]



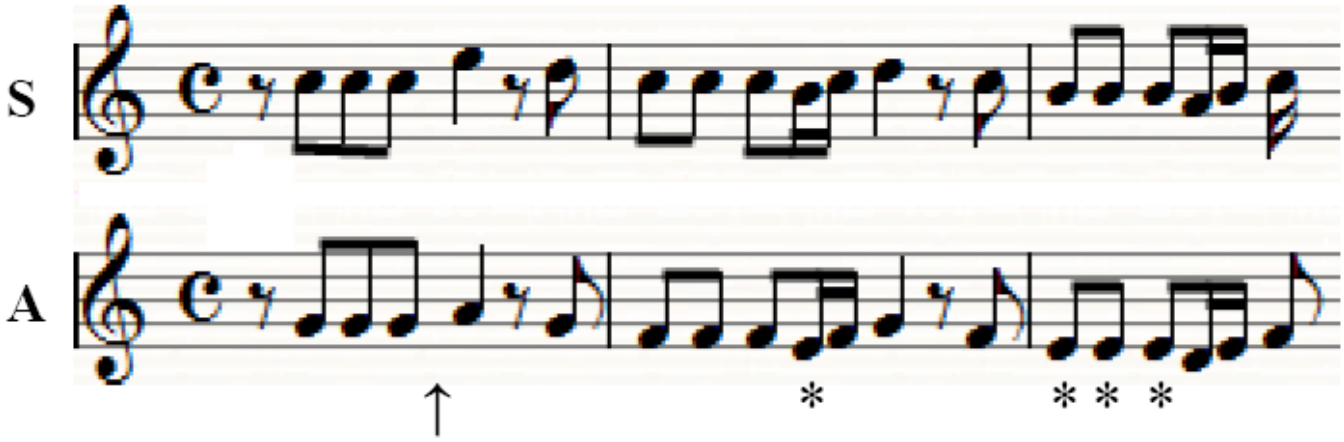
Ex. 31. Nicolaus Vetter, "Christ Lag in Todes Banden."[163] At the asterisk, $\hat{3}$ is answered by $\hat{7}\natural$, a freedom mentioned on p. 15. The vice-versa is also found at the second note of the theme.



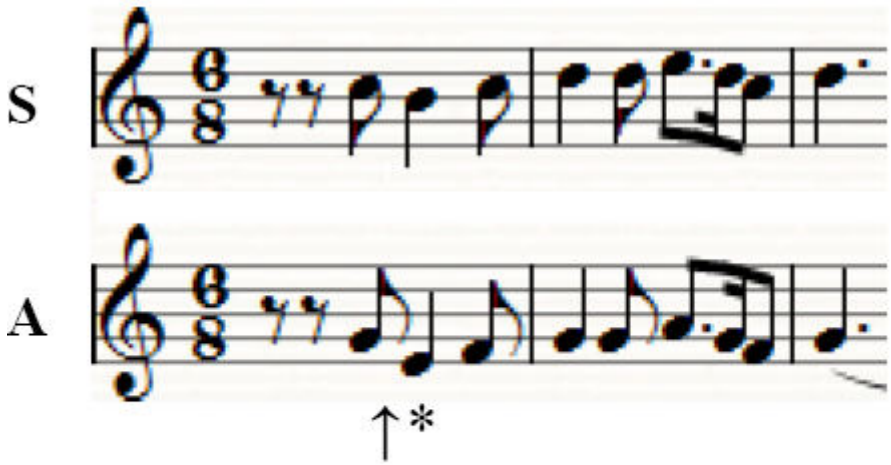
Ex. 32. Dandrieu, "Basse et Dessus de Trompette" from Magnificat in A minor.[165]



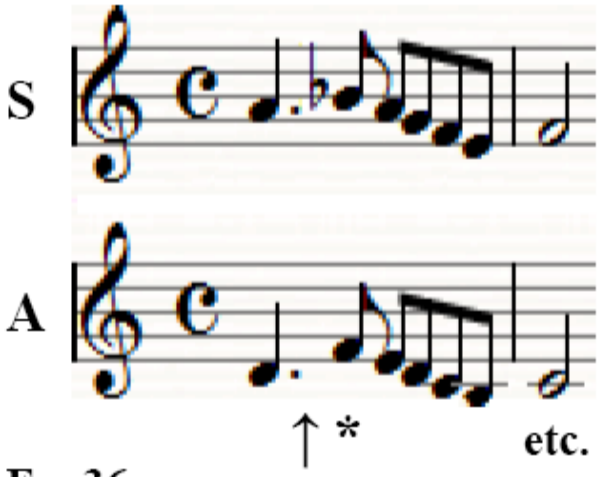
Ex. 33. Purcell, 3-part Sonata no. 5.[167]



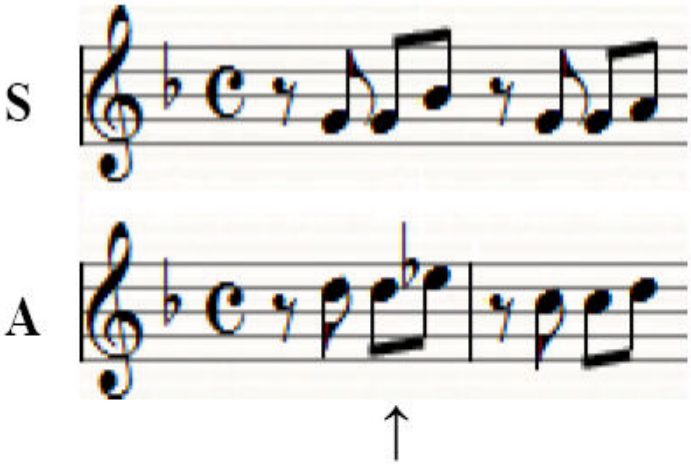
Ex. 34. "Little" fugue of uncertain authorship, formerly attributed to J.S. Bach as BWV 553.[168]



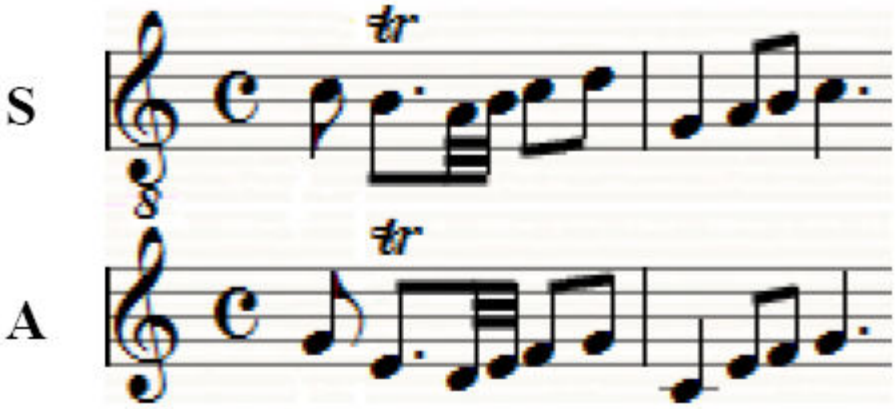
Ex. 35. Johann Gottfried Walther, from the organ chorale "Ach Gott Und Herr."[169]



Ex. 36. Mattheson, D minor exemplar from *Capellmeister*.[170] The answer avoids "foreign" E♭ at the asterisk.

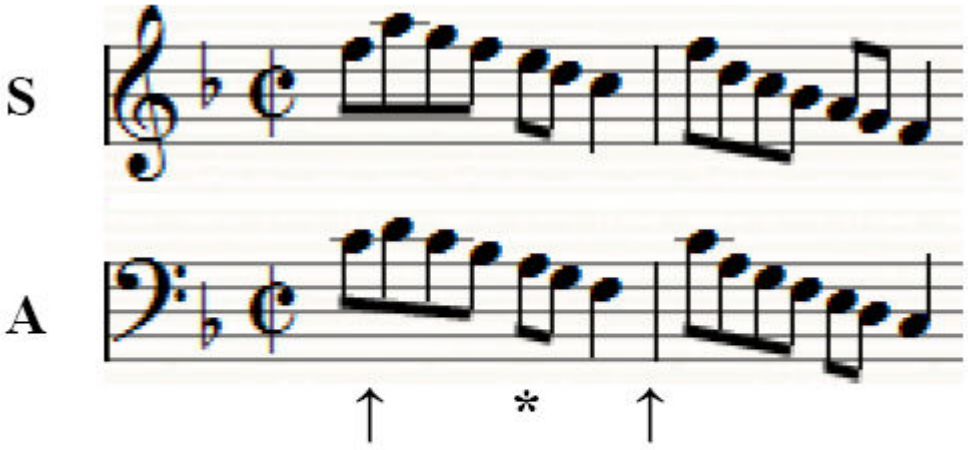


Ex. 37. (G minor.) This type of "voice-leading" tonal answer, though not consistently used, averts the need to take 7̂ ♮ (F) by ascent. Johann Ernst Eberlin, Verset no. 6 of "Tonus Secundus" from *115 Versetten*.[174]



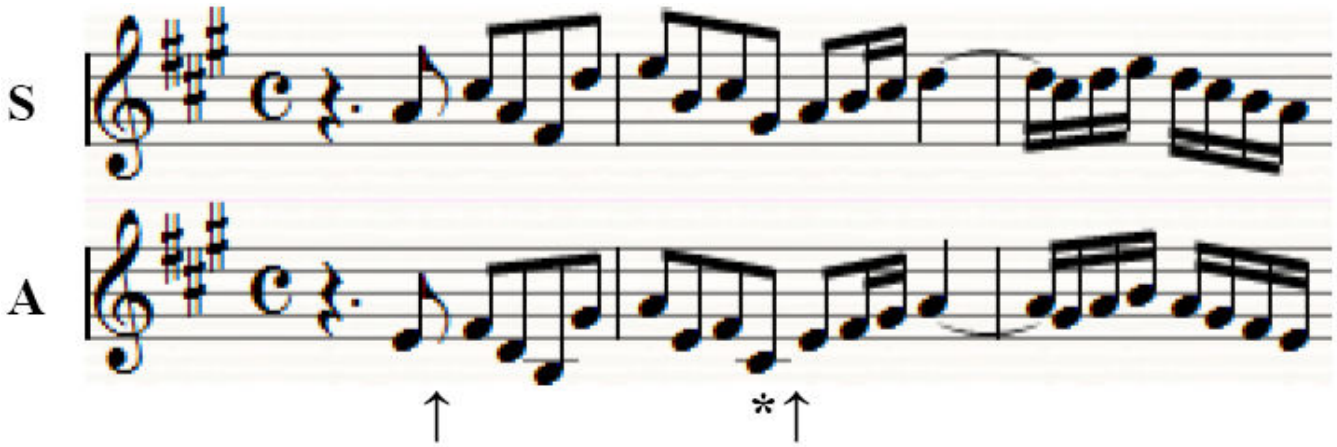
Ex. 38.

Muffat, from *Missa in C*. A resemblance to the B-major fugue of Bach's WTC, Book I may be seen. This might be called a key-retaining version of that theme.[180]

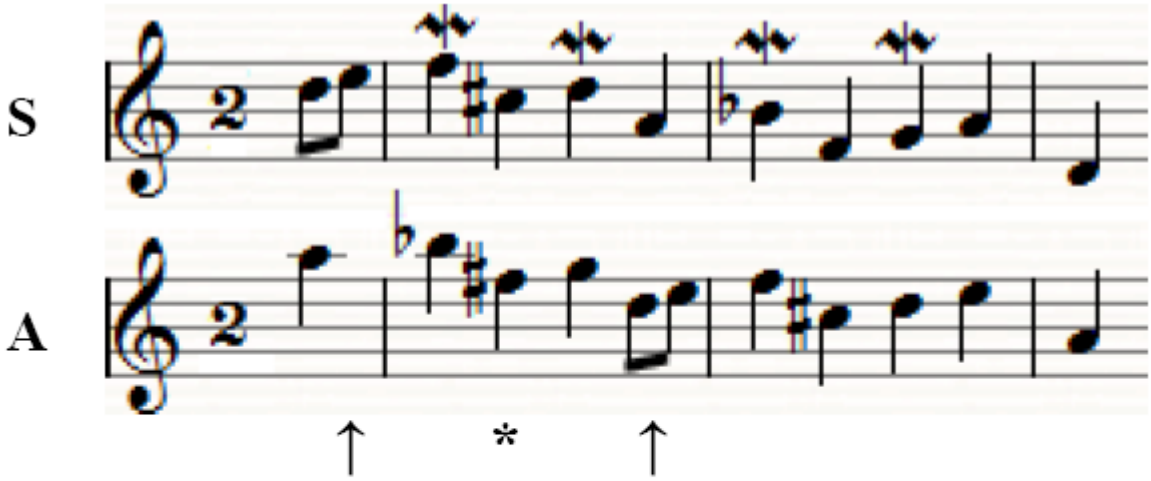


Ex. 39.

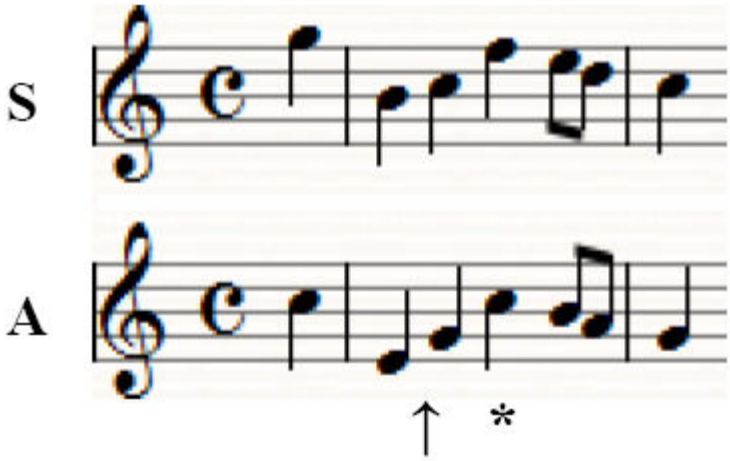
Lambert Chaumont, "Duo du 6e Ton."[179] This subject and answer could easily reverse roles, as is probably true of a few others on this page.



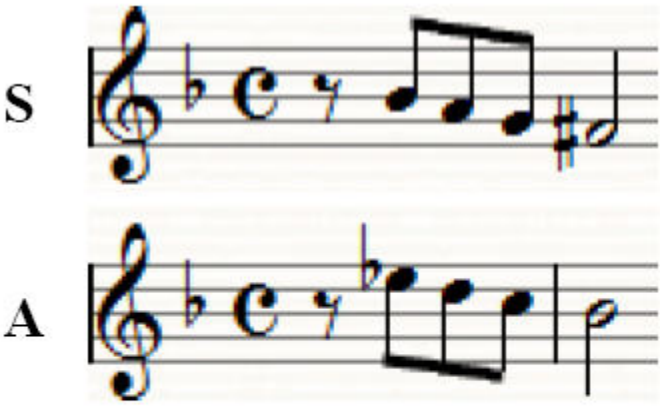
Ex. 40. J.S. Bach, "Fughetta super Allein Gott in der Höh sei Ehr,"[177] BWV 677. (The first nine eighth-notes are intended to be staccati, removed so the mutations are more clearly perceptible)



Ex. 41. N.B.: when seconds are changed to thirds or vice-versa, passing notes may be added or deleted; this is immaterial to the "underlying" answer-procedure. Pierre DuMage, "Basse de Trompette."[178] (DuMage gave the answer the same ornaments as the subject, except none on the F♮. I deleted these for readability.)



Ex. 42. An exemplar from Marpurg's fugue treatise.[181] The answer averts B♭ at the asterisk in addition to tonally answering the outer notes.



Ex. 43. A so-called unalterable subject. Eberlin, Verset no. 8 of "Tonus Secundus" from *115 Versetten*.[182]

to impoverish the study of fugal answer by presupposing always "normal" subjects, with "easy" answers. The norm, for the record, is that the subject's outer notes are $\hat{1}$, $\hat{5}$ or both; less often their thirds, $\hat{3}$ and $\hat{7}$. Thus, the norm is "odd-numbered degrees."[158] Ditto for the answer.[159] (Note: closes on $\hat{7}$# in minor pose no obstacle to answering, suggestions to the contrary notwithstanding. See Exx. 26, 43 etc.)

Moving on, the *second* condition for a real answer is that an exact, real answer (following the Printz chart for its outer notes, as mentioned) would not need "foreign" accidentals. Yet this condition too allows a certain "wiggle room," as follows: if the exact real answer would produce accidentals, one might eliminate these a different way, using an *in*exact "real answer"—in other words, making recourse, within reason, to tone-semitone exchange. Ex. 30 uses this procedure at the asterisks.

In short, a real answer ensues if the two conditions are met, with some leeway possible. Exx. 28-32 illustrate. Ex. 28 meets both conditions without the slightest question. Ex. 29 uses the waiver about answering $\hat{2}$ "against the chart" for a real answer. Exx. 31 and 32 employ, where marked with asterisks, the first two of the minor-mode "licenses" outlined on p. 37.

There is one last, important case in which one can expect a real answer, all other considerations aside. This is the so-called "unalterable subject." This term has been used before without being explained. A simple way to identify an "unalterable subject," though there are exceptions, is that it contains no tonics or dominants other than as passing notes. Ex. 43 illustrates. "Printz chart conformity" is waived for one

outer note at will. One chooses any real answer within the tonic key, if necessary with the help of tone-semitone exchange.

So much for real answers. Next: when would an unconstricted theme receive a tonal answer? Quite simply, when either of the conditions for a real answer is not met; or rather, we should say "not sufficiently met," given the stated leeway. Clearly this is subjective, but some general indications are possible.

If the first condition is absent, the answer is apt to be tonal, ensuring that its outer notes can satisfy the Printz chart. We will call this scenario "outer notes suggest different intervals-of-answer." This occurs, as indicated, when one end is $\hat{1}$ and the other is $\hat{5}$; or $\hat{3}$ versus $\hat{7}$; and so on. Exx. 11, 12, 17, 18 and 42[164] among others show tonal answers associated with this circumstance. In most cases only one adjustment is made—early in the answer—to effect the change between first and last note.

Let us turn to tonal answers linked to the second condition. If this condition fails, a tonal answer frequently ensues, of a kind that enables the answer to avoid the foreign note. For this reason, I will call this type the "accidental-avoiding tonal answer."[166] (Clearly it need not avoid all accidentals, only "foreign" ones.) Exx. 33-6 illustrate. The asterisks show which notes would have had "foreign" accidentals with an exact, real answer. Some tonal answers are attributable both to the outer-notes factor, and accidental-avoidance: see Exx. 42, 45 and 52.

Exx. 33-5 however have a curious property. The subjects and answers "lose their alignment." That is, they start and end at different distances to each other—but not, this time, because

"outer notes suggest different intervals-of-answer," the scenario just discussed, which is normal (sometimes even deliberately engineered.[171]) Exx. 33-5 are very different, because *their* de-alignments entail endings that contradict the Printz chart. Indeed these closes (either in the answers or the subjects) would be considered slightly irregular based on contemporaneous theories, also because they involve even-numbered closing notes.[172]

The reason for the "de-alignment" in these examples is that the accidental-avoiding mutation is not "canceled out." There is no "return mutation." It turns out that sometimes, this re-adjustment is difficult to effect. Where to put it, without ruining the melody, is not always clear. This may help explain why, among the "accidental-avoiding tonal answers," the observer meets with a sizeable share of specimens such as Exx. 33-5.

Remarkably though, composers appear at some point to have developed a generalized method of inserting additional mutations "gracefully." This technique, however, to be successful, or perhaps to be used at all, would seem to depend fairly strongly on having a specific kind of subject. Such a subject has a prominent $\hat{1}$ or $\hat{5}$ among the middle notes, which offers a kind of division point.[173] The second ("return") mutation is effected next to this $\hat{1}$ or $\hat{5}$: either quitting or approaching it, whichever choice leaves the note tonally answered.

Exx. 38-41 illustrate the method.[175] Asterisks mark where "foreign" notes would have arisen with real answers. Note, Ex. 41 does have accidentals, but neither $\hat{7}$# nor $\hat{3}$# has to be considered "foreign" to minor (p. 15).[176] More to the point, $\hat{4}$#

is averted, part of the key of the dominant. Note too, tonal answers do not always eliminate all need for "tone-semitone exchange." The two techniques can work together. There are three tone-semitone exchanges among Exx. 38-41. One way to understand them is as follows: the tonal answer blocks accidentals that would be very early or conspicuous if they did appear; or, that are not neatly amenable to deletion via tone-semitone exchange. Any *remaining* accidentals can then be "cleaned up" by the latter method.

In examples such as 38-41, the tonally answered $\hat{1}$ or $\hat{5}$ in the middle appears usually to be a "side benefit" of the tonal adjustment—not its "cause," which is foreign-note avoidance. (But one can certainly see how this misunderstanding could occur! It is not a stretch to imagine how a modern theorist, seeing answers similar to these four, might misguidedly infer that those in Table 2 are also "correct" models to impose on students.)

A reader might wonder whether the method of exploiting $\hat{1}$ or $\hat{5}$ to facilitate "readjustment" might work, not only for the second mutation, but also (should the need arise) for a third, fourth or fifth mutation. Perhaps the method might serve, too, for alterations originating for any reason, not just accidental-avoidance. These suppositions have a good measure of truth. This leads us to a central issue. The later baroque observed sophisticated conventions—which do have exceptions—about where, precisely, mutations would and would not be inserted. To take the study of fugal answer beyond vague approximations, this information is essential. The principal norms have all already been admirably researched and published by others (and they work for classical fugue as well). Regrettably, many

of these fascinating findings are poorly known, scattered and not wholly unmixed with errors. Below, I compile a list summarizing all of, and only, what I regard as the accurate information. For convenience, I will refer to these as the *Walther-Banister norms*,[183] to credit two names among many who deserve credit. Following are the Walther-Banister norms regarding where mutations generally occur (norms 'b,' 'd' and 'f' are partially by me as footnoted):

a. Each alteration will be placed next to at least one, non-"passing," tonic or dominant (that note itself being preferably answered by dominant or tonic respectively).

b. Mutations rarely interchange any of the following: perfect consonances with imperfect consonances (e.g. fourths with thirds);[184] rising with falling semitones;[185] stepwise motion at the close with sideways motion;[186] and diatonic passing tones with chromatic ones.[187]

c. Real imitation is normal for: octave leaps;[188] sequences;[189] chromatic passages;[190] and, passages that repeatedly and uninterruptedly emphasize just one of the basic triads — I or V—excepting alterations that serve to emphasize the *other* triad, or the tonic note.[191]

d. (a-c) are waived if one prefers to effect mutation during a rest, or if norms are physically impossible to satisfy. In the impossibility case, one either gives a real answer or finds a "least bad" alternative location (as a composer did for Ex. 45.[192] Another interesting alternative is to implement norm 'a,' except using the

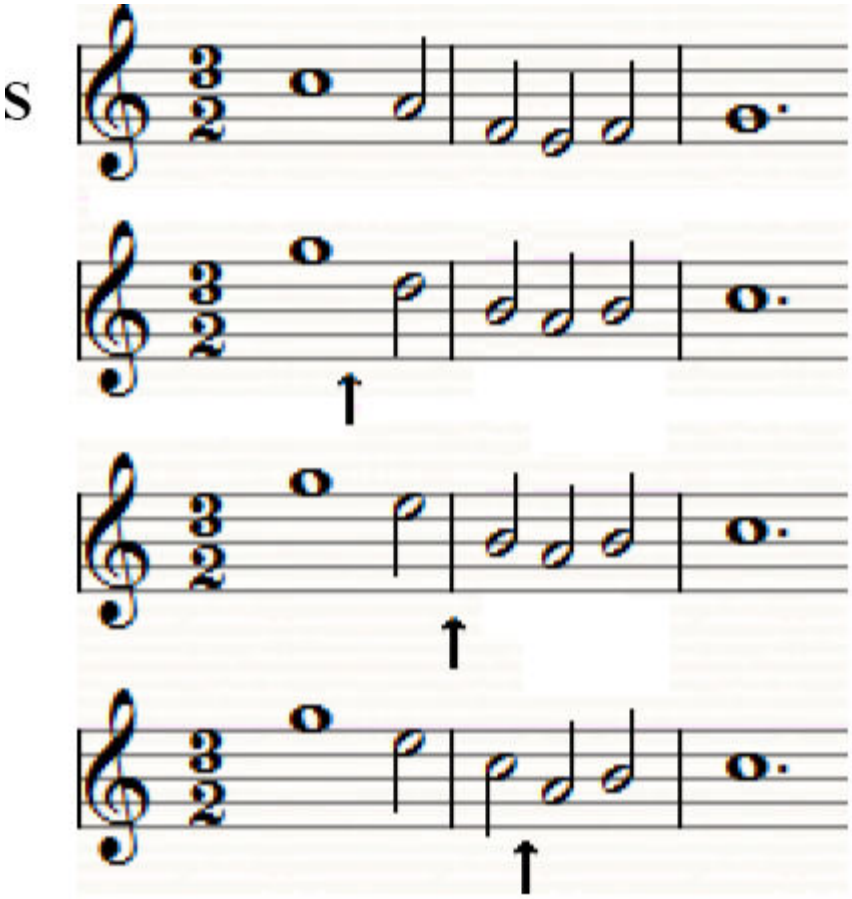
tonic and dominant of the relative key![194])

e. Mutations are made as early (or as far to the left) as possible consistent with the other norms. This principle will be called "*ASAP mutation.*"[195]

f. Notwithstanding (e), no mutation will be made so early as to spur a departure from the tonic key (or tonic-and-dominant keys, for "key-changing" answers, discussed later). Exceptions to (e) also sometimes occur to avoid repeating the first note.[196] Important, too: (e) is the only norm in this list *not* applicable to lead-in themes. There, "ASAP" may be satisfied by chance, but fails as a generalization, perhaps because of a certain conflict with the last part of (c).

In most of our tonal-answer excerpts, the Walther-Banister norms account for the precise mutation points. Walther-Banister may additionally illuminate another interesting phenomenon: the enigmatic, seemingly ubiquitous "opening formulas" shared by so many fugal answers. What I mean is the very frequent exchanging, for example, of seconds with thirds, as seen in many excerpts on recent pages. Let us explore whether these "formulas" may have a musical rationale.

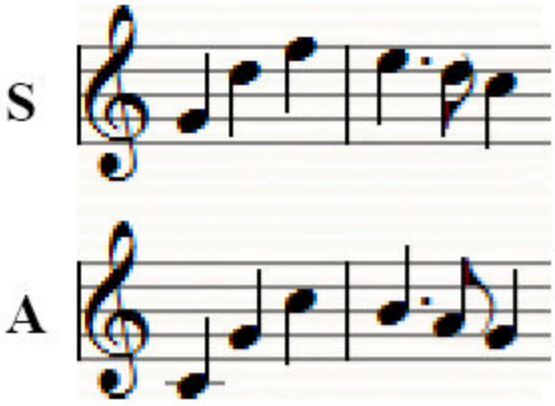
To begin, consider Ex. 44. This subject is "uncooperative" from the answer point of view; nonetheless, below it, I attempted three tonal answers "for the outer notes." However, most composers, I suspect, would have rejected all three in favor of a real answer closing on $\hat{2}$ [197] (or discarded the subject, a practice I consider unnecessary.) All possible mutations of this subject contradict "Walther-Banister."



Ex. 44. Three hypothetical answers for an "intransigent" subject.

In contrast, Table 8 shows all mutations within C (major or minor), that do generally satisfy "Walther-Banister." While only five mutations are shown, the possibilities are about thirty-two, allowing for retrogrades, inversions and subject-answer reversals.[198] Numerous such constructions appear among our excerpts (at least those from real-life music) in this paper. Table 8 moreover has an interesting property. In each subject-answer pattern comprising four notes, at least three always belong to the tonic triad. This is possible when, and only when, Walther-Banister conditions (a) and (b) are both met. This might be relevant to one vexatious question: why would composers want to follow these norms in the first place? One way to think of it may be that the ear, confronted with the mutation, is "bought off" with an extra dose of tonal clarity.

Still unclarified here is why, so often, the mutation is at the absolute beginning (and the related question: why the norms

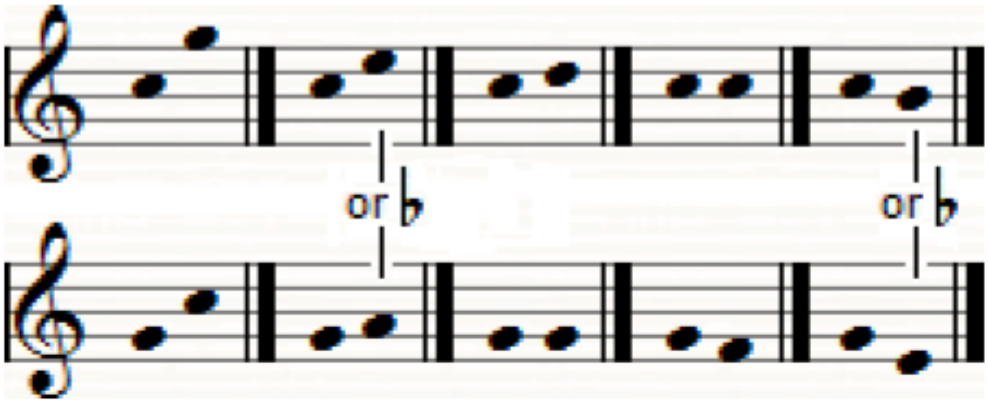


Ex. 45. ↑
Another "uncooperative" subject, perhaps less so than Ex. 44. Exemplar from Marpurg's *Abhandlung*.[198]

favor "ASAP mutation.") With pattern (a) in the table, there is no mystery. This pattern corresponds to the compass-exchange norm (pp. 25-27), for which immediate tonal clarity was always the stated motivation (p. 10). As for patterns (b-e), I can make several conjectures, but will hazard only two here.[199] First, the opening note being customarily $\hat{1}$ or $\hat{5}$, right there is a "non-passing tonic or dominant" conveniently waiting to serve as a mutation site. Second, it may have been a higher priority to eliminate accidentals for early notes than for later ones. These early notes can even include those directly abutting the mutation. For example, if one compares the real and the tonal answers for the figure "C-B♮," one sees that the tonal answer acts as a "self-cleaning" eliminator of its own potential foreign accidental (F#). Two other motifs in Table 8 will also be found to have this "self-cleaning" property. (Interestingly though, the pattern "C-E♭ answered by G-A♭" does not have it, yet this tonal answer sometimes occurs for no obvious reason at all. See Ex. 37. I would speculate that this is sometimes done to avoid reaching the minor seventh by ascent, very optionally though.)

Although "ASAP mutation" is a reliable norm, as suggested it is not absolute and does not supersede other norms. In Exx. 17, 42 and 45, "ASAP" is overridden and mutation deferred. Walther-Banister norms 'f,' 'c' and 'b' may shed light on why.

TABLE 8



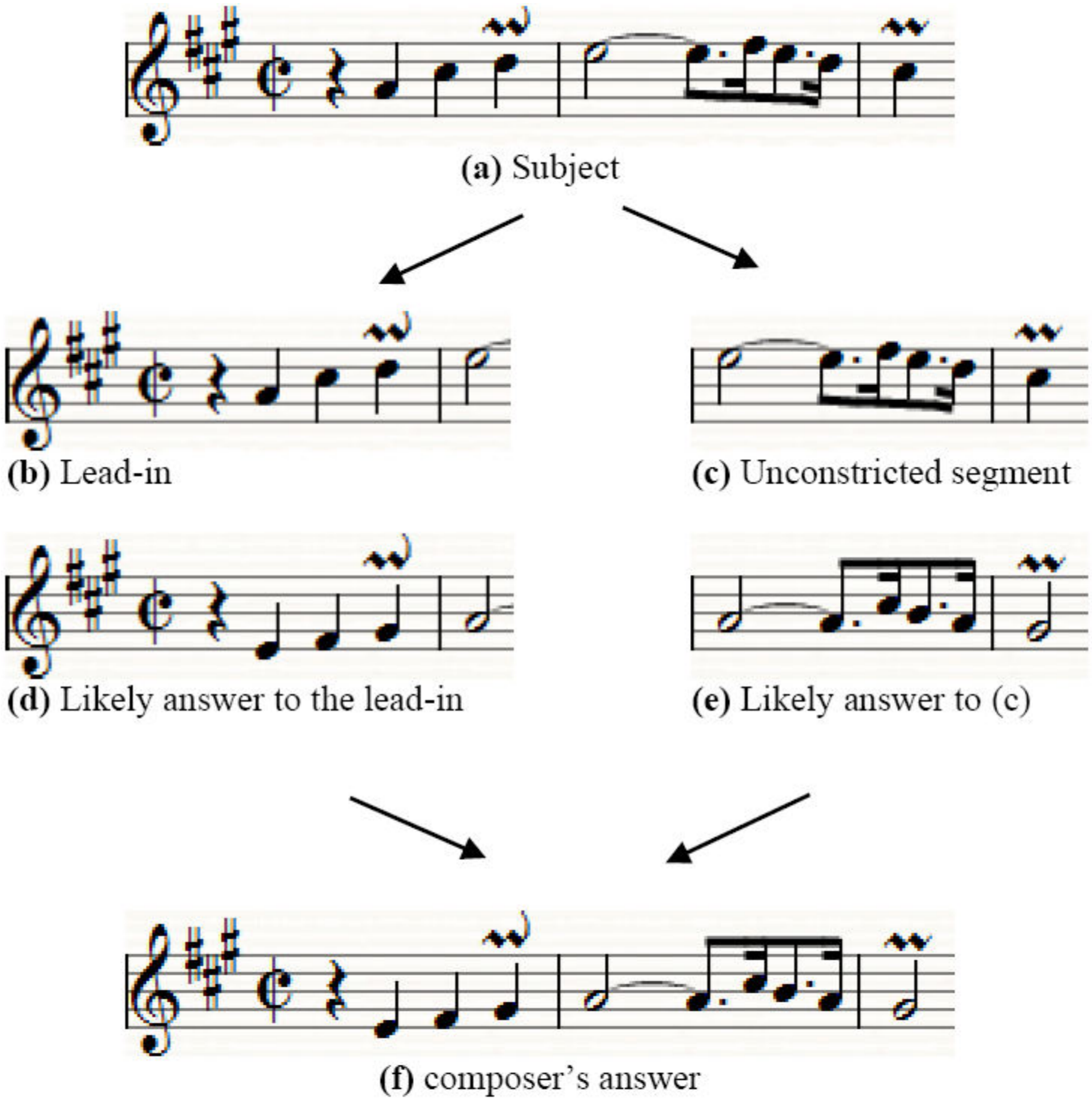
(a) (b) (c) (d) (e)

All the above are viable in retrograde, inversion and/or subject-answer reversal.

Five basic patterns (subject above, answer below, or vice-versa) underlie all possible "Walther-Banister-conforming" mutations in C major or minor. The possibilities become thirty-two with retrogrades, etc., taken into account. Only on the first two Walther-Banister conditions are considered here.

Combination subjects. We have examined two classes of subjects: lead-ins and unconstricted themes. Lead-ins are typically brisk and tonally clear, but also "circumscribed."[200] Unconstricted subjects offer greater scope for creativity, but may sacrifice some of this tonal limpidity.

A question presents itself: can one get the best of both worlds? Through their work, baroque composers suggested that indeed one can. This is achievable using what we will term the *combi*

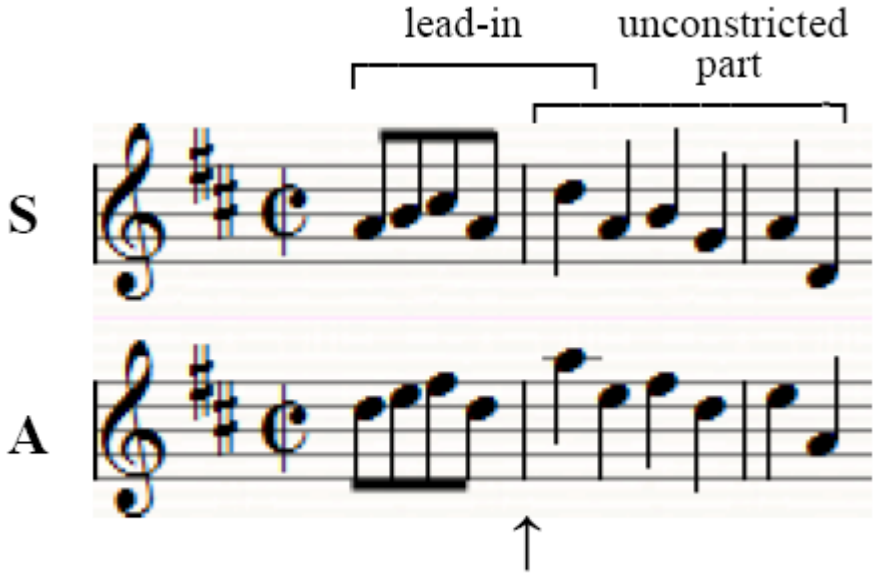


Ex. 46. "Predicting" a composer's answer to a combination subject by breaking it into parts. The subject is from "Flûtes," a movement of a Magnificat in A major by Dandrieu.[204]

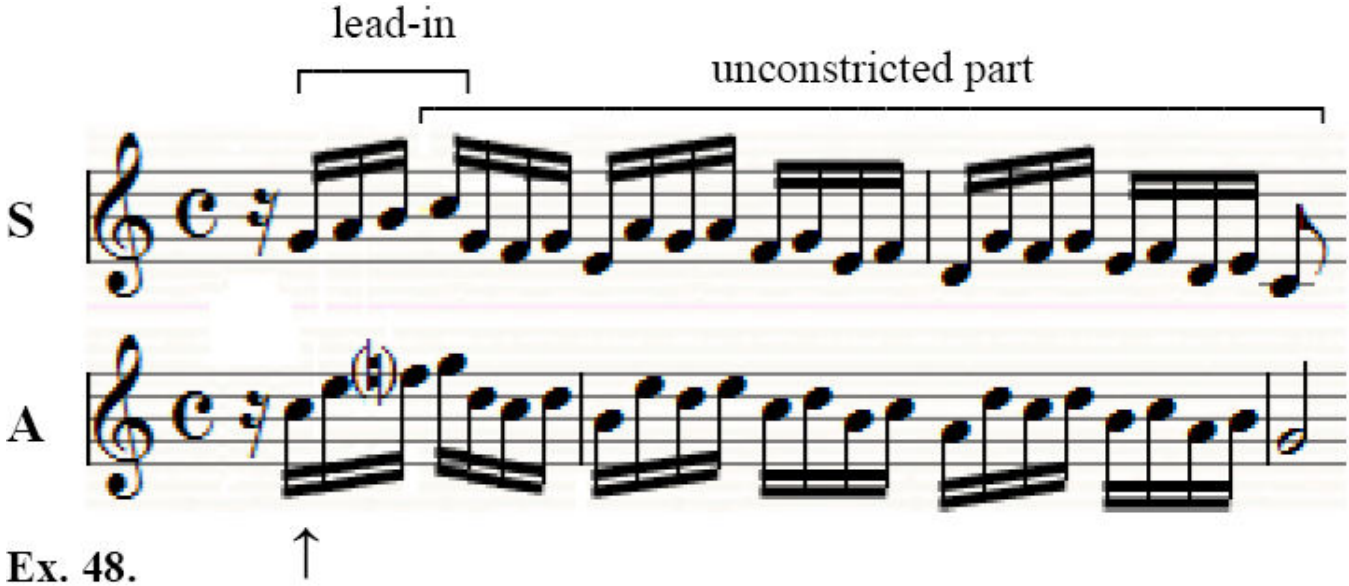
nation theme. As Ex. 46a illustrates, such a subject effectively consists of "a lead-in, plus anything else"; or stated basically equivalently, a lead-in followed by an unconstricted subject. In this context, it will make more sense to speak of these two as "segments," or "phrases," within the subject, rather than as "subjects." The subject of Bach's *Art of Fugue*, both "recta" and "inversa,"[201] is a combination theme, since it first completes the closed compass of $\hat{1}$-$\hat{5}$ or $\hat{5}$-$\hat{1}$, then does something else. However, for now we are staying with "key-retaining" answers.

The most convenient way to analyze a combination theme is to assume the last note (or pitch) of the lead-in is also the first note of the unconstricted segment. There is therefore an overlap of one note. We will term that the *hinge note*. It is the long E in Ex. 46a. The hinge note concept is useful for reasons to be discussed.

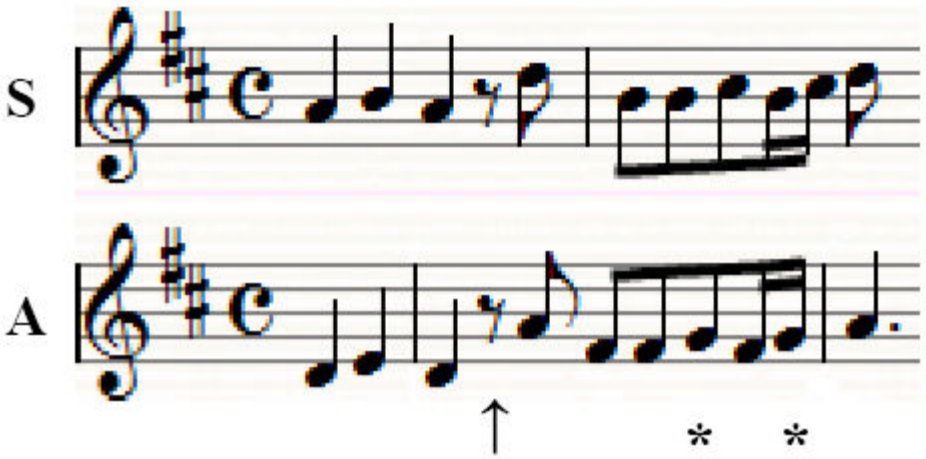
Let us work out the answer for Ex. 46a. Our "standard" approach will be to answer the two parts separately, as though they were two subjects: a lead-in, and an unconstricted theme. The sections are shown in 46b and 46c. This allows easy prediction of the answer. For the lead-in, one could refer to Table 6 with its "stock answers," but the written-out norms on p. 54 imply the same result. For the unconstricted part, norms are outlined on pp. 54-70. As they predict, because the "subject" 46c moves from $\hat{5}$ to $\hat{3}$, the answer (its outer notes observing the Printz chart), goes from $\hat{1}$ to $\hat{7}$, the mutation effected pursuant to the Walther-Banister norms. The results are shown in 46 (d and e). The norms also predict one and the same answer for the "hinge note" in both sections of the theme. This is convenient for the next and last step: the two parts having been answered separately, one reunites them at



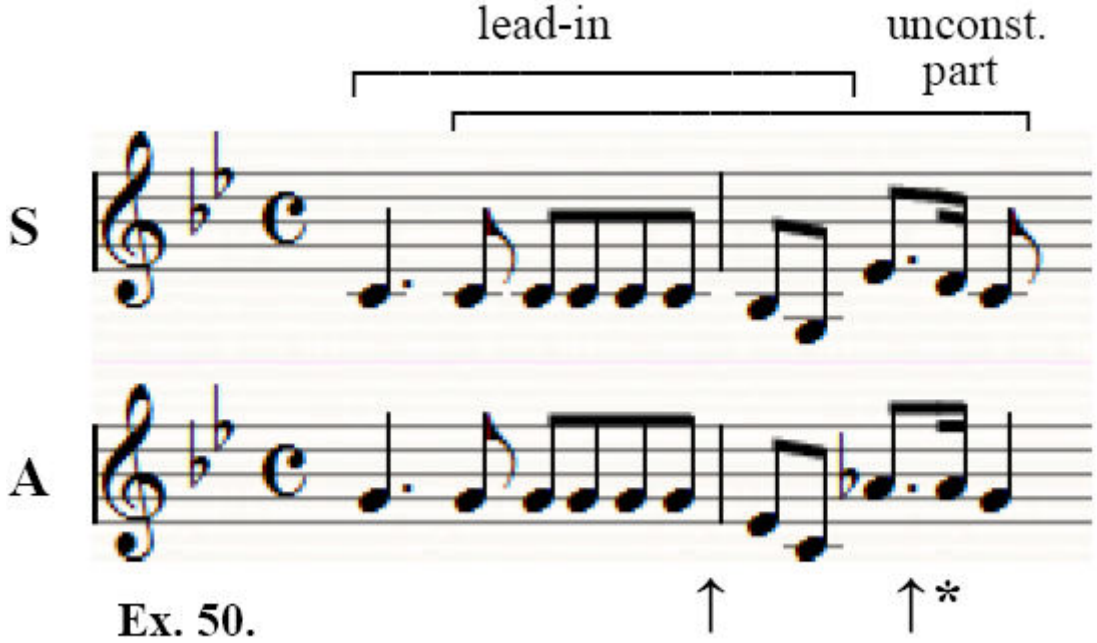
Ex. 47. Jacquet de la Guerre, Sonata for violin and harpsichord, Presto.[205]



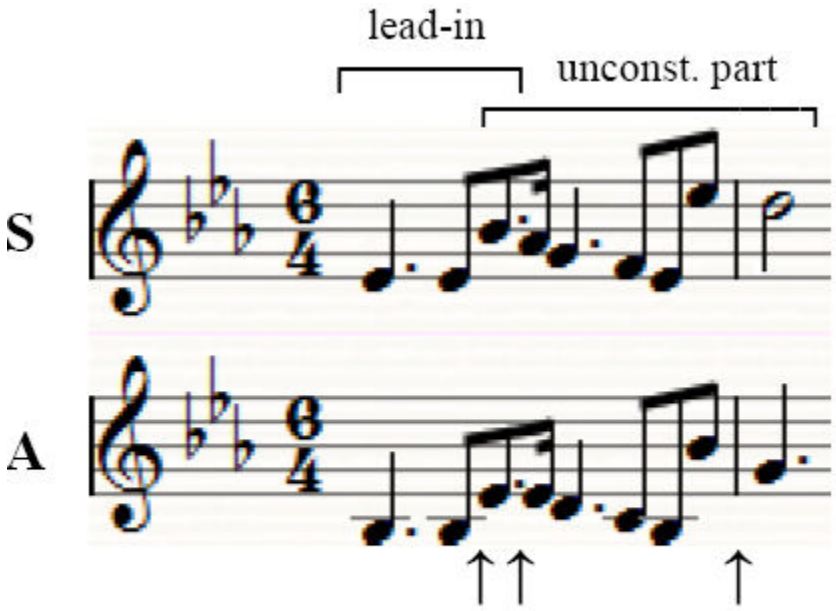
Ex. 48.
J.S. Bach, Clavier Fugue in C, BWV 952.[206] ('Cautionary' F♮ added)



Ex. 49. Fischer, Fuga I of Praeludium VII, *Blumen-strauss*.[207]



Ex. 50. Fischer, Fuga from Praeludium XX, *Ariadne Musica*.[208]



Ex. 51. Georg Böhm, Gigue from Suite in Es Dur.[209]

the "hinge note," as in Ex. 46f. Incidentally, a defect of some important modern theories is that for subjects such as Ex. 46, they imply real answers would be customary,[202] a mainly inaccurate prediction in my experience.[203]

Why is it important to divide the theme into two parts? Because trying to answer it as though it were one, homogeneous whole would create problems. The answer-procedures differ between the sections. For example, when we apply a convention such as "ASAP mutation," ASAP is now interpreted to mean as soon as possible *within the unconstricted part*, not within the whole theme. Disregarding this could lead to absurdities. Suppose we looked at the mutation in the unconstricted portion of the answer, and decided to shift it to the extreme left of the entire answer, in the misguided belief that "ASAP mutation" demands this. Then this mutation would presumably collide with the other mutation already occupying the left end, and the two would cancel each other out. But this does not really happen.

Why should the two-part analysis include the overlap—the hinge note? It yields better results. The two miniature subjects Exx. 46b and 46c have an important note in common: a tonic or dominant, having some structural weight for both, being an outer note of each. We can exploit this to avoid difficulties and reunite the segments more easily. The hinge note concept often makes sense in terms of phrasing. In Ex. 46, both portions of the melody feel more phrasically complete with the long E. If one were to assume it belonged only to the left side, or only the right side, one might face the additional challenge of trying to devise an answer for a phrase that feels fragmentary.

In further examples, we will no longer go to the trouble of separating the two segments of the theme on the page. Instead, brackets will be used to mark them. Ex. 47 illustrates. The basic answer-procedure is the same; the figure shows how this again leads to successful prediction of the composer's solution. One way in which Ex. 47 differs from the previous subject is that the lead-in now outlines a compass "$\hat{5}$-$\hat{1}$" rather than "$\hat{1}$-$\hat{5}$." A second way is that here, the unconstricted portion does not have a mutation of its own. This accords with our observation that in unconstricted themes, tonal answers are unnecessary absent specific reasons. This unconstricted phrase has a real answer because it meets the two conditions that would normally occasion a real answer. (See p. 55.)

Ex. 47 also provides new evidence of why one should conceptually include the "hinge note" in both parts of the theme. If one excluded the hinge note from the second part, and thus considered the phrase as starting from the second bar's A, then this note would probably be answered with D, not with the E

that is actually and appropriately used. An analogous point can be made with Ex. 48, whose overall tonal structure is similar.

A related feature of both these examples is that they display what *could* be taken to resemble a kind of "second" lead-in: a second (quick) motion outlining the fundamental fourth, directly following the first such motion. On occasion, such "second lead-ins" are even answered tonally, but generally only when it would clearly improve the melody, which seems doubtful in these cases. For the moment, let it be simply remembered that ordinarily, anything after the first lead-in is most usefully considered as part of the unconstricted theme, and answered accordingly.

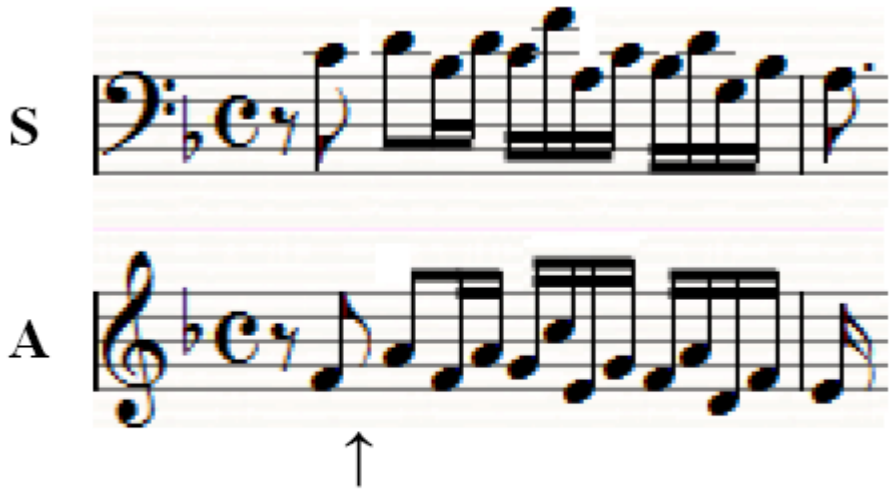
Ex. 49 shows tone-semitone exchange in the unconstricted part (see asterisks). This is no surprise: essentially anything that occurs in a (free-standing) unconstricted subject may also occur in the unconstricted part of a combination subject. In Ex. 50, Fischer does it again. In this case, to me, the tone-semitone exchange mars the ending, perhaps because the mutation is almost simultaneous. The subject is wonderful; it also prefigures the B minor fugue of WTC Book I, with subject and answer reversed. Ex. 50's answer might have been improved by moving the mutation one step earlier.[210] In any event, it highlights some of the challenges of trying to keep answers in the tonic key.

Ex. 51 is our first in which the unconstricted segment has two mutations. Why are they there? Notice the unconstricted segment has $\hat{5}$ and $\hat{7}$ as outer notes, so the changes are not attributable to the "outer notes call for different intervals-of-answer" scenario (p. 64). Instead, this fits the description of an "accidental-avoiding tonal answer" (pp. 64-66). Böhm makes

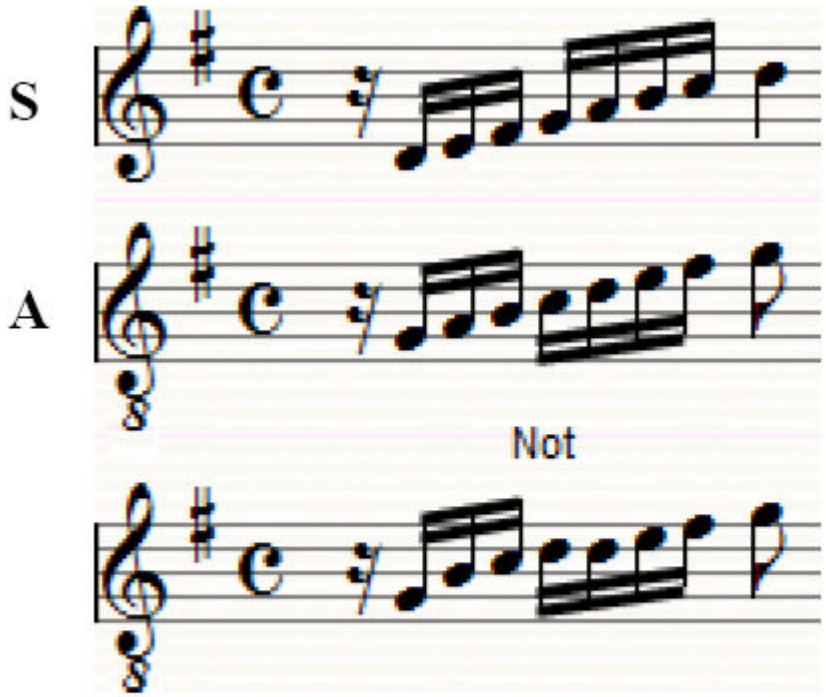
one change that eliminates a flat at the asterisked note, and a second mutation that cancels the first mutation. It is all done normally: “ASAP” within the unconstricted phrase, subject to the Walther-Banister conditions, which among other things call for preserving octaves.

Many themes present logical “traps,” of which one should be aware. One common trap appears in Exx. 1, 45 and Table 1 (fourth subject). The openings outline fourths or fifths, so the themes might appear to be combination themes. But these fourths or fifths are not of the “fundamental” kind, so it makes more sense to analyze these as unconstricted subjects. A different snare is seen in Ex. 52. This too could resemble a combination theme, opening as it does with an “apparent lead-in” (moving from $\hat{5}$ to $\hat{1}$ fairly quickly). Confusing matters further, this pseudo-lead-in is tonally answered. But it is, in fact, best not regarded as a lead-in: it exits the fundamental fourth. The subject is better classified as unconstricted; the tonal change is attributable to the outer notes, these being $\hat{5}$ and $\hat{3}$. Beyond “deceptive” behaviors in various subjects, what makes fugal answers still more treacherous is that true, *bona fide* exceptions to the norms, which the above cases are not, also occur!

A special kind of “trap” is almost inherent in the idea of a combination theme: a misunderstanding of the lead-in. Probably inevitably, and naturally, some students will assume a “lead-in” is any opening motif that is distinctive, or that “stands out.” Indeed, such a concept already exists in the fugal literature: the “head” of a subject, characterized as a catchy or “trenchant” opening motif.[214] While this is a perfectly valid topic of scholarly interest, if one is not careful, it can obscure an important point. A “lead-in,” as defined here, is not necessarily



Ex. 52. Gottlieb Muffat, Toccata VI, Fuga IV from *12 Toccatas*.[211]



Ex. 53. Eberlin, Verset no. 16 of "Tonus Octavus," from *115 Versetten*.[212] (This is the entire subject.)

the same thing as a “distinctive opening motif.” For instance, if musicians were asked to cite a noticeable opening figure in Ex. 49, many would point to A-B-A, because it feels somewhat self-sufficient and is set off by a rest. However, the lead-in is actually A-B-A-*D*. It is specifically this recognition that explains, under the present theory’s terms, why the answer is the way it is.

Let us shift from discussing “traps” to merely “subtle points,” because a subtle point presents itself now. As just suggested, the lead-in carries no obligation to be “distinctive.” That said, in order to be thought of as a “lead-in” at all (and thus to invite a tonal answer), it helps if it has a modicum of melodic independence. To illustrate, the rather unique subject in Ex. 53[215] would probably not be—and was not—treated as a “combination subject” with a lead-in requiring a separate tonal treatment (as hypothetically shown below the actual answer). The subject’s opening notes blend into the rest too smoothly to be perceived as a separate motif at all. Obviously, infinite intermediate cases exist between “zero melodic independence” and “total melodic independence” (perhaps sufficiently illustrated by Ex. 97). Sorting out the borderline cases is up to judgment. If one is undecided whether to give a tonal answer or not, some pointers that are fairly faithful to the repertory are found in our “Walther-Banister norms” (pp. 67-68), and equally relevant, the “lead-in norms” (pp. 48-54).[216]

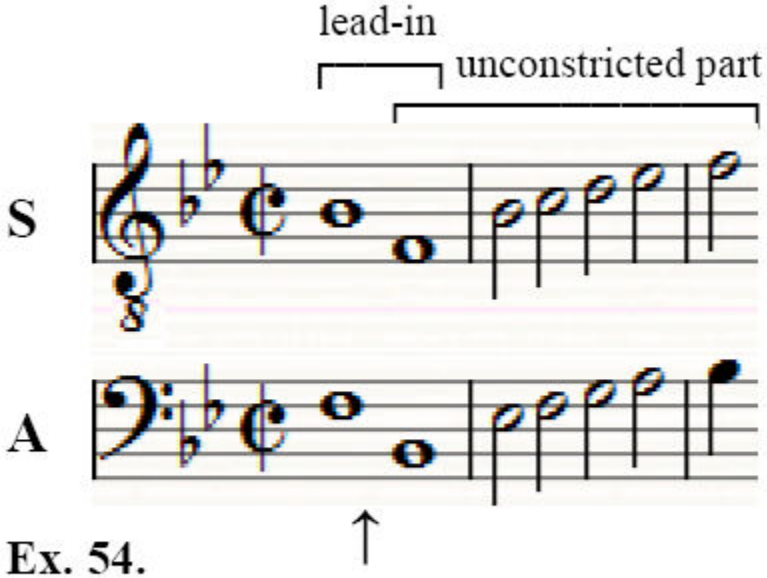
What we have been saying, in effect, is that a lead-in is not always answered like a lead-in; nor, by extension, is a combination theme always treated like a combination theme. In such cases, these subjects are answered as though they were unconstricted themes, such as Exx. 23 and 53. It will help if we create a lexicon than embraces this slightly messy reality. The

term *hypothetical lead-in* will refer to a motif, as in the just-mentioned examples, that may technically qualify as a lead-in, but was not in fact tonally answered, or that seems unsuitable for tonal answer, or whose answer is unknown or undecided. The opposite term will be *actualized lead-in*: a lead-in that does receive a tonal answer from a composer, and therefore, is "acted upon"; it has in effect been recognized, so to speak, as a lead-in. Clearly, identical lead-ins might be "actualized" in one fugue but not in another, so these terms are context-dependent, not statements of an objective or permanent reality.

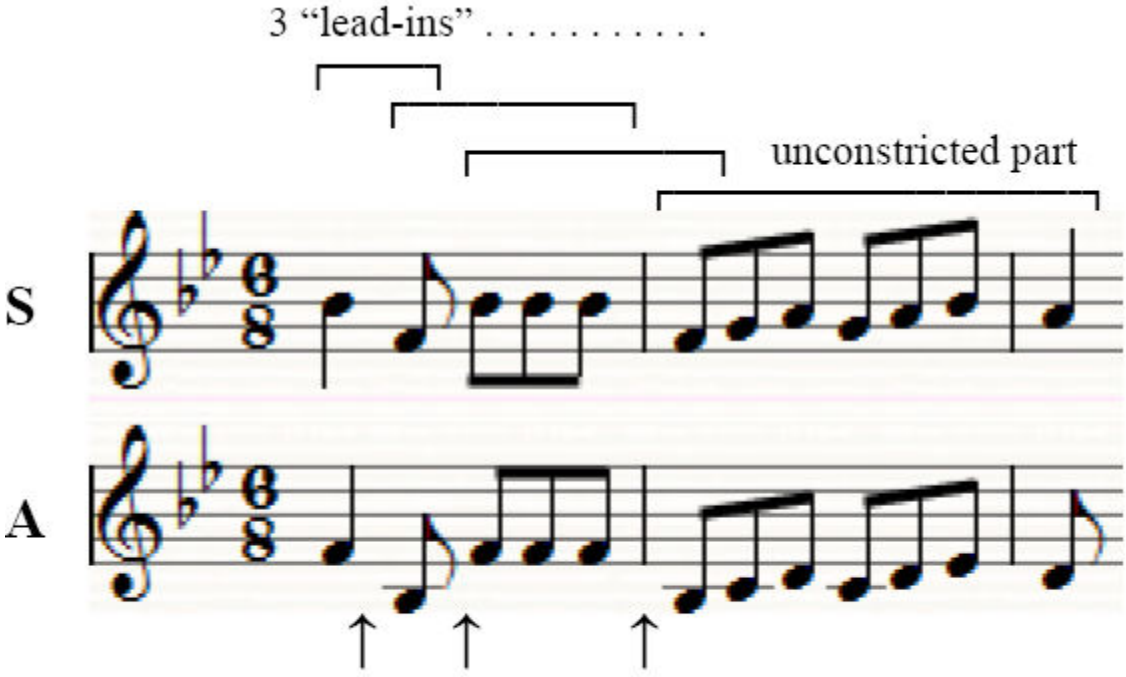
A third new term refers to a phenomenon not yet discussed. This is the "*multiple* lead-in." The simplest way to explain is by example. In Ex. 55, as may be noticed, the answer is somewhat atypical. The difference is made clear in the following quotes from Prout:

> The old rule… *applies only to the beginning*… the claims of the law are satisfied as soon as [for example] E-B at the beginning of a subject has been answered by B-E. … There is no mistake which students are more apt to make than to answer dominant by tonic every time these notes occur. This is almost invariably wrong.[219] [Emphasis in original]

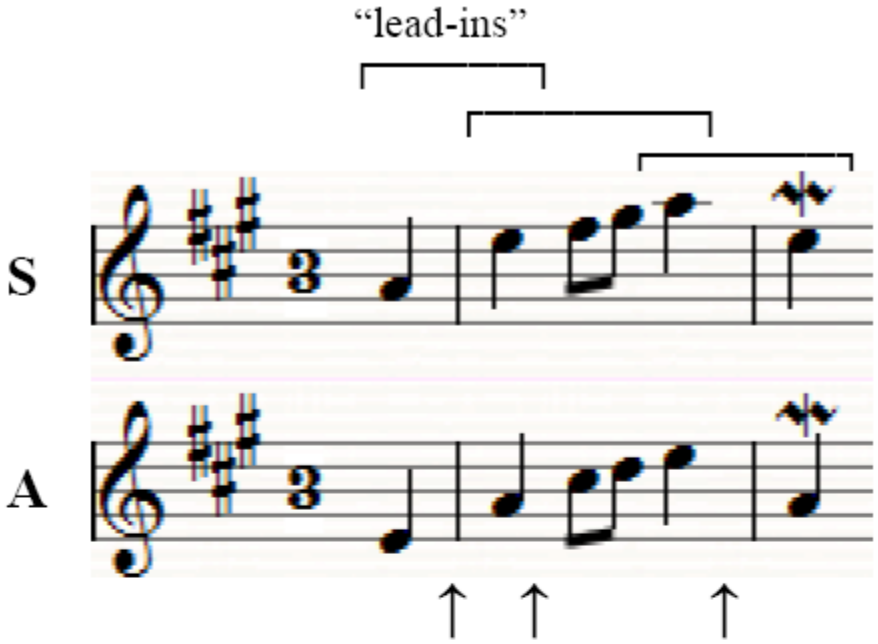
If we might rephrase this using our new lexicon, one normally "actualizes" only the first lead-in, not any hypothetical second lead-in. Exx. 54, 47 and 48 show the norm: all begin with two motions between $\hat{5}$ and $\hat{1}$, both motions being lead-in-like in significant respects, namely the compass observance—but only the first of which is tonally answered.



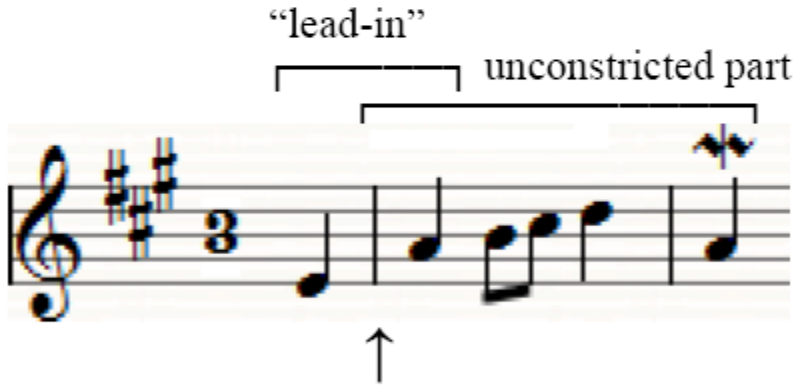
Ex. 54.
Gottlieb Muffat, Ricercata XIII from
The 32 Ricercares and 19 Canzonas.[213]



Ex. 55. Johann Krieger, Gique [sic.] from Partita [VI][219]

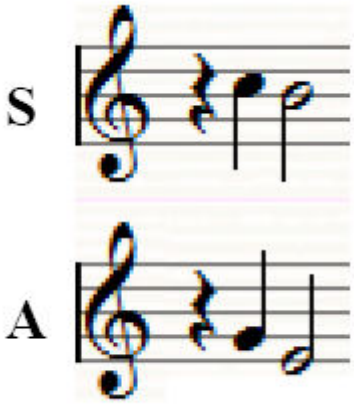


The following kind of answer was rejected:



Ex. 56. Michel Corrette, "Musette," from Magnificat in A la mi 3#.[217] This type of theme, incidentally, falls under the type mentioned on p. 54 and may be regarded either as a special type of combination subject or a special type of lead-in subject. (See definitions, pp. 46-8.)

The norm, however, has important exceptions.[220] In Ex. 55, the fourth-leaps seem so plainly intended as repetitions of one melodic idea that it seems silly to robotically apply the custom, answering the first tonic with F, and all others with E flats. The example therefore displays a "multiple lead-in." Stated another way, lead-ins beyond the first one have been "actualized."



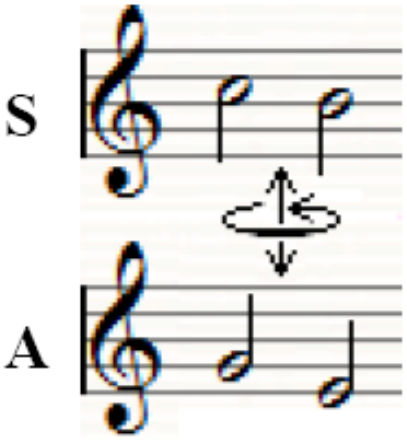
Ex. 57. A "rule" from Masson, *Nouveau Traité*, 107.

"Multiple lead-ins" are used for various reasons. One may be to be preserve the theme's overall octave-compass, if applicable. In Ex. 56, the composer is able via this strategy to avoid altering that octave. At the bottom of the example is shown the answer the "normal" procedure would have yielded. While such octave-conservation is not always necessary or advisable, it does seem preferable on its face, and composers evidently go out of their way for it often.

Second, third, etc. lead-ins normally only arise at the beginning, directly following a prior lead-in—indeed overlapping it with a new "hinge note," as the examples show. Of course a fundamental fifth or fourth might be outlined elsewhere in a subject too, but then it would seldom be usefully considered a lead-in.[222]

It is hopefully apparent that multiple lead-ins are only a variant on—not a basic departure from—the essential concept of the combination theme.

TABLE 9



One way to illustrate that the convention in Ex. 60 extends to cover the retrograde form and that with subject and answer reversed.

Next, we discuss another variant on the same.

France's most widely used composition treatise in the very early eighteenth century, a text thought to reflect contemporaneous practice fairly well, includes four relatively new, interrelated "rules."[224] First, an opening "$\hat{8}$-$\hat{7}$" should be answered by "$\hat{5}$-$\hat{3}$," according to this author, Charles Masson. (Ex. 57.) Further, this "rule" is also valid with subject and answer switching roles. Both patterns are also good in retrograde. In total, then, four opening subject-answer formulas are given (along with a real-answer alternative in one case). The four can be illustrated in a condensed form, as in Table 9. We saw this pattern earlier, including in Table 8e (p. 71), and a few answers.

What Masson does not reveal, curiously, is any reason for his fourfold guideline. All we can say (it might at first appear), is that the Table 8e pattern has mysteriously "taken on a life of its

own," as though utilized now purely for its own sake. Nonetheless, one can *infer* reasons: from Masson's exemplars, the context, contemporary repertory—even the layout of Masson's tables. Let us observe six characteristics of these "new"[225] conventions.

- The guidelines are suggested only for the beginning of the subject.[226]
- Nonetheless, the Table 9 motifs need not serve only as thematic openings. Like those in Table 5, they can also be complete subjects! See Exx. 58 and 59. (These mini-themes might work well partly because, including the answers, the outer notes comprise all four odd-numbered scale degrees.[227])
- Tonic-key preservation appears to be a goal. Several clues support this. For example, some of Table 9's answers are none other than the "self-cleaning eliminator of accidentals" remarked on earlier (p. 70). Also: the only motif—G-E—for which Masson allows a real-answer alternative, is the same one for which a real answer (C-A) seems least likely to obscure the key.[228]
- The outer notes of the motifs in Table 9 are answered according to the Printz chart.
- The guidelines do not represent "ASAP mutation"—though they may give the same result by chance (as in Ex. 33, where the mutation forestalls an accidental later.) Masson's guidelines do not exist to "get a jump" on an adjustment needed later in the subject; the opening notes are answered tonally simply because of what they are. This is apparent because Masson never mentions later melodic events, and composers sometimes applied the technique with no evident link to such events. (See Ex.

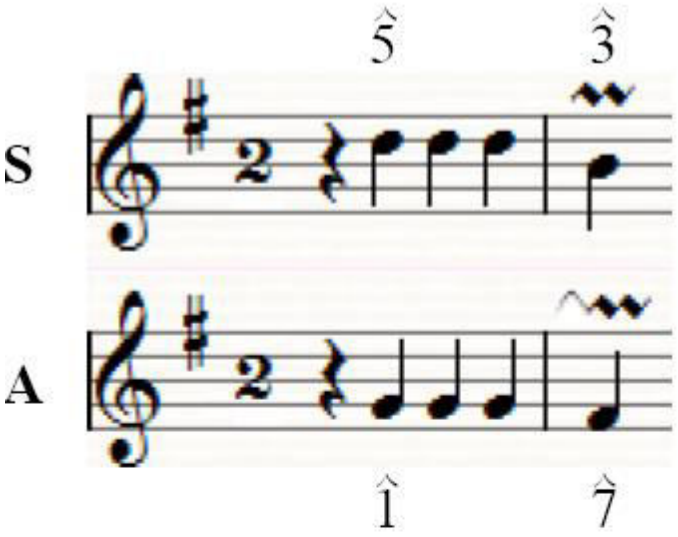
60a.[229] If the first adjustment was aimed at getting a "head start" on a change needed only later, then the second mutation certainly defeated the goal!)

- Each of the four "new rules" can be paired with one version of the "old rules" (the compass-exchange norm) with analogous features. The layout of Masson's subject-answer tables (which space considerations preclude reproducing, but are free on the Internet[230]) actually reflects such a pairing. In these tables, wherever a "new" rule appears, an "old" one with similar characteristics is seen in an analogous place. For example, directly below his example of $\hat{1}$-$\hat{7}$ answered by $\hat{5}$-$\hat{3}$, another example shows (falling) $\hat{1}$-$\hat{5}$ answered by $\hat{5}$-$\hat{1}$. That it was organized this way purely for neatness strains credulity. It seems more likely that Masson perceived musical relationships in these pairings. Let us restate this a different way: each of the four "newly" coined, tonally answerable motifs is paired with one kind of "*lead-in*."

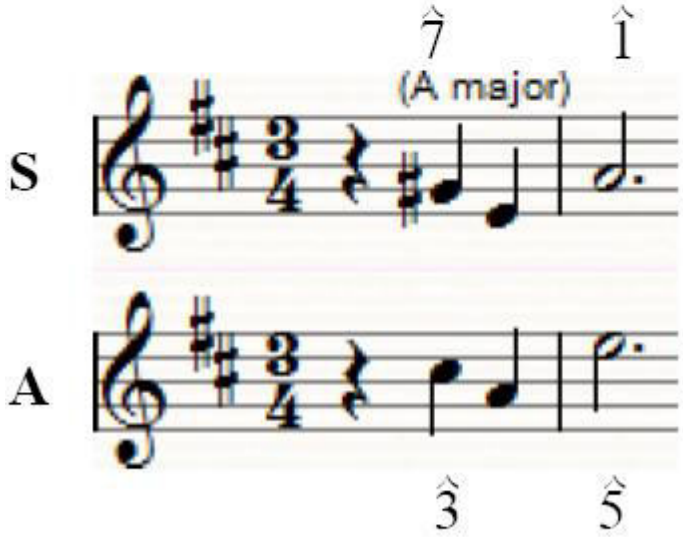
All six of these observations suggest that Masson's little motifs have an enormous amount in common with "lead-ins," both structurally and musically. Perhaps, then, they even *are* lead-ins, of a sort. What might suit them to such a task? Let us directly compare the behavior of one conventional kind of lead-in, to that of an analogous motif in Masson's guidelines.

> In a typical lead-in configuration:
> Descending $\hat{1}$-$\hat{5}$ is answered by descending $\hat{5}$-$\hat{1}$.
> And in Masson's "rules":
> Descending $\hat{1}$-$\hat{7}$ is answered by descending $\hat{5}$-$\hat{3}$.

There is only difference between these situations: one note of



Ex. 58. Dandrieu, "Dialogue" from a Magnificat in G major. This is the complete subject.[221]



Ex. 59. Handel, "All the Earth," Allegro from the "Dettinger" Te Deum, HWV 283.[223]

each pair is replaced by its third. Could it be that composers felt, consciously or not, that some notes could be replaced, or substituted for, or represented, by their thirds? In Masson's day such a notion, if existent, appears to have been expressed but inchoately. Still, a germ of it is identifiable. For his contemporary Andreas Werckmeister, if a subject began on what he called "the middle note of the harmonic triad," this should be answered by "the middle note of the triad of clausula secundaria."[231] Translated into modern parlance, the third of the tonic is answered by the third of the dominant. Implicit in his words are the ideas that two triads have a relationship as triads, and that a member of a triad derives its character in part from that membership. It is not an immense leap from there, to saying the third can *represent* the triad. Historically, this idea gained increasing strength. In 1824, François-Joseph Fétis invokes it

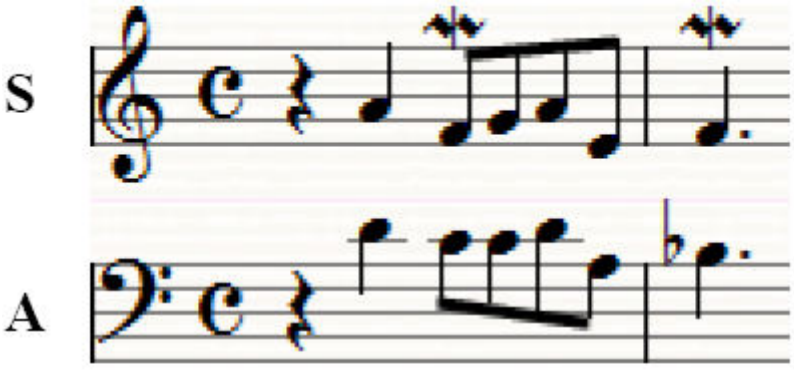
explicitly: a subject opening with a leading-note-to-tonic ascent must be considered as "proceeding from the dominant to the tonic," because the leading note "represent[s] the dominant."[232] Therefore, Fétis essentially repeats Masson's prescription in this context. André Gédalge adopts the same reasoning as Fétis.[233]

The inference I propose to draw from all the foregoing is this:

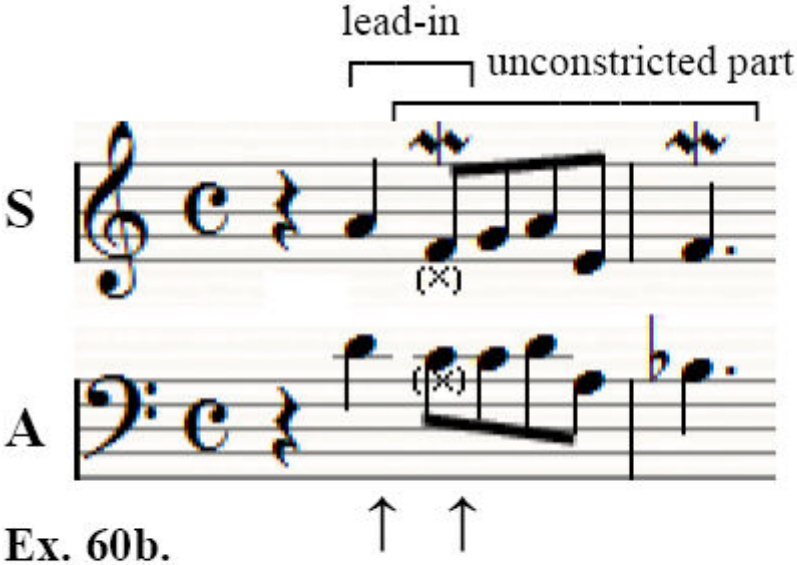
- The "$\hat{1}$-$\hat{7}$ to $\hat{5}$-$\hat{3}$ tonal answer"—in all its manifestations, including subject-answer reversals and retrograde forms—is most usefully regarded as merely *a variant of the familiar lead-in*, in which one of the notes, tonic or dominant, is substituted for by its third. (Note: compass remains relevant. For example, a tonal answer is expected only when $\hat{5}$-$\hat{3}$ is a third, not when it is a sixth. But expansions of the motifs in Table 9 may fill the fifth and fourth, as in Ex. 59, or even a pair of fourths like Ex. 91's opening white notes.)

Perhaps all this would not have required such detailed argument, but a lack of awareness of these conventions and their theoretical underpinnings appears to have fueled unstinting controversy and misunderstanding around several fugal answers. We will revisit this. (An interesting question is why not invent still new, lead-in-like motifs that substitute *both* tonic and dominant with their thirds: for example, "$\hat{3}$-$\hat{7}$." But then $\hat{3}$ might be taken for a tonic, among other problems.[235])

By the reasoning suggested above, then, an example such as 60a can be analyzed as shown in Ex. 60b. We may think of it as though the subject's "true" second note were D, as shown



Ex. 60a.
Chaumont, "Duo du 1er Ton" from *Pièces d'Orgue* (1695).[234] (D minor)

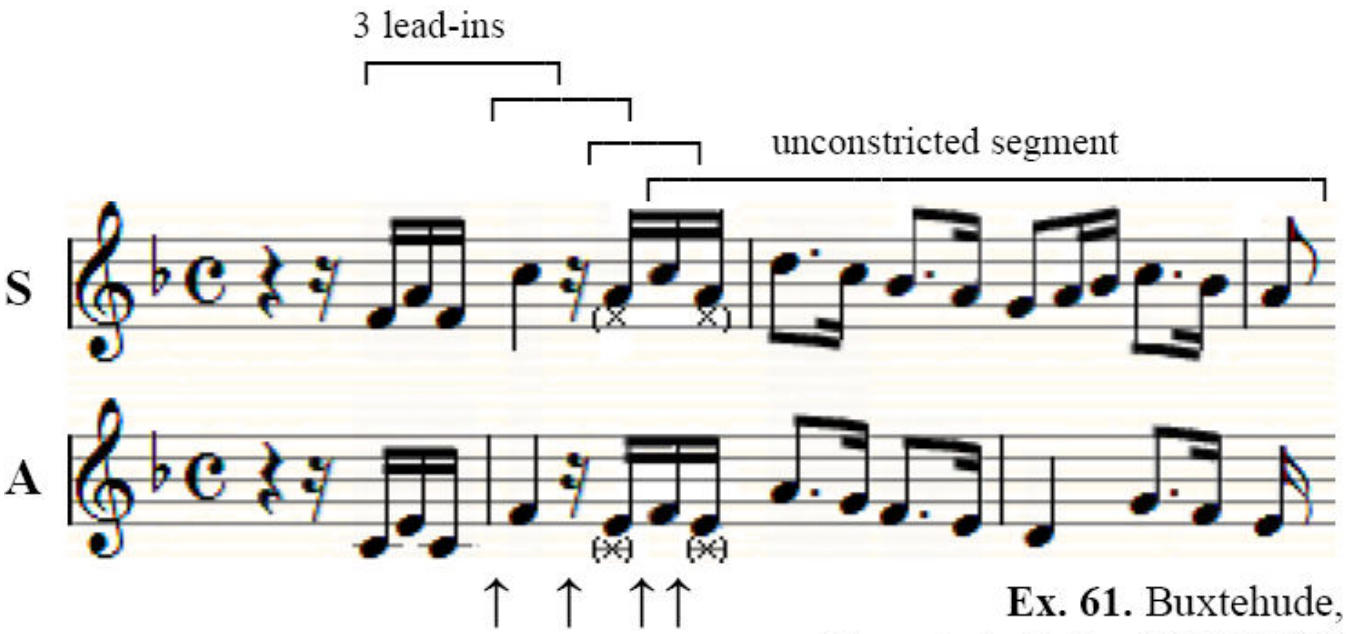


Ex. 60b.
The above example, analyzed.

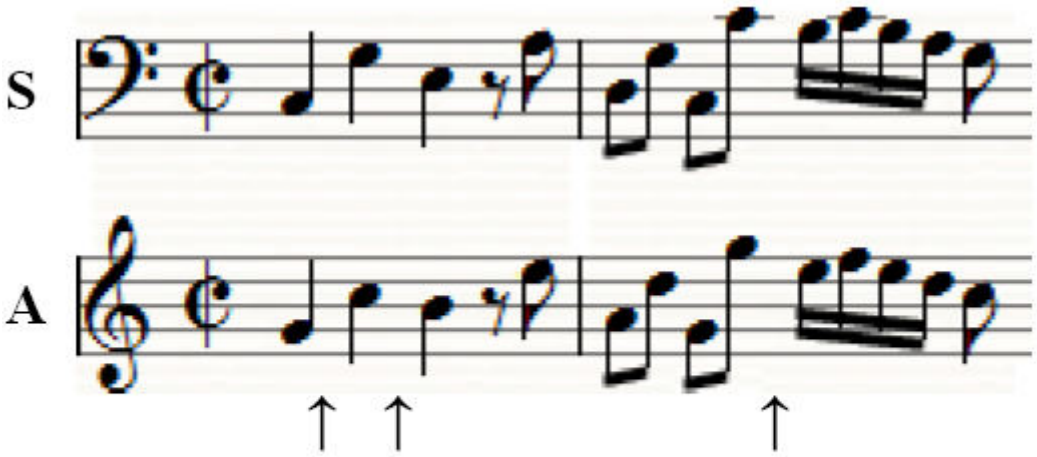
with the small (x), and that therefore the answer's "true" second note is A. Then we can analyze it like previous examples—with a lead-in and an unconstricted part—as shown with the brackets[236]; in short, as a combination theme.

The principles encapsulated in Table 9 — as separate, independent "rules" divorced from other grounds for making tonal answers — never did achieve a recognition or following like that of the "old rule" (compass exchange norm) in its basic form. One deterrent to adoption may have been difficulties about any second, "canceling" mutation. (Sometimes lack of a "non-passing $\hat{5}$ or $\hat{1}$" may heighten this problem.[237]) Yet as will be seen, composers including Bach do sometimes act in accordance with Masson's precepts.

In the last three pages, we discussed two variants on the "combination-theme" concept. One was the "multiple lead-in"

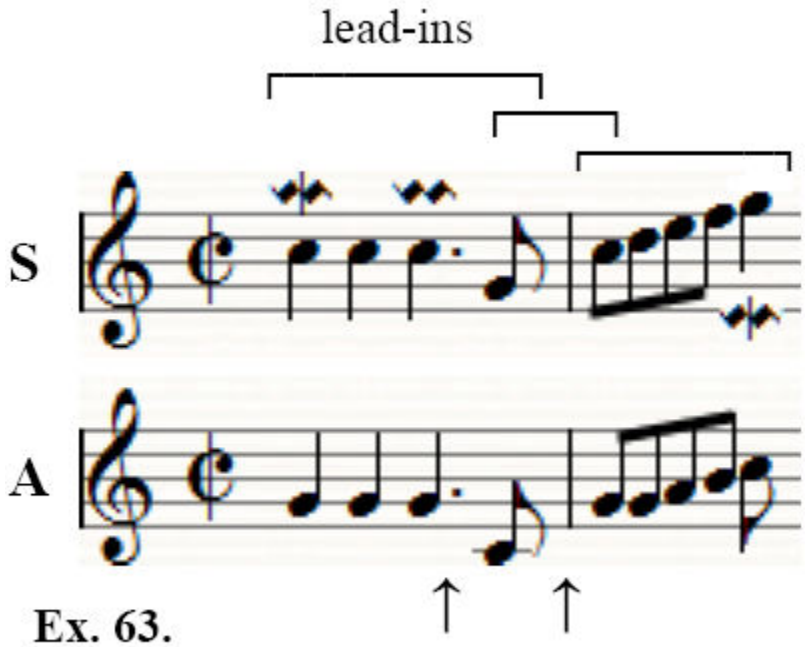


Ex. 61. Buxtehude, Toccata in F, BuxWV 156.[238]

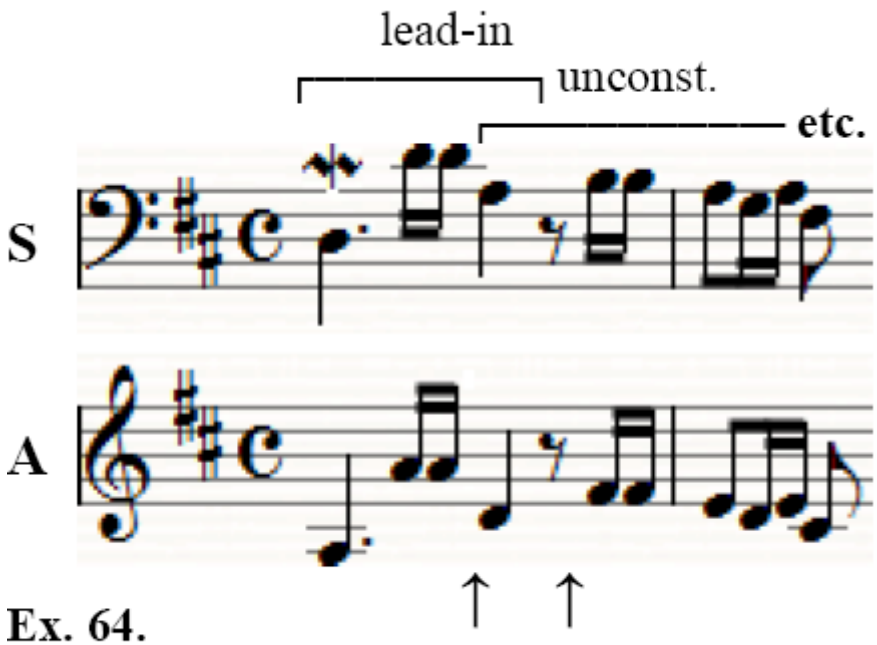


Ex. 62. Attributed to Jacobus La Fosse (fl. 1703-21): Fúga, No. 348 in Cocquiel Manuscript.[239]

(pp. 82-85). The other involved these Massonian motifs. Going forward, we will refer to the latter as *lead-ins with substituted thirds*. We showed how either (1) multiple lead-ins, or (2) lead-ins with substituted thirds, can take the place of the regular, single lead-in of the "standard" combination theme.

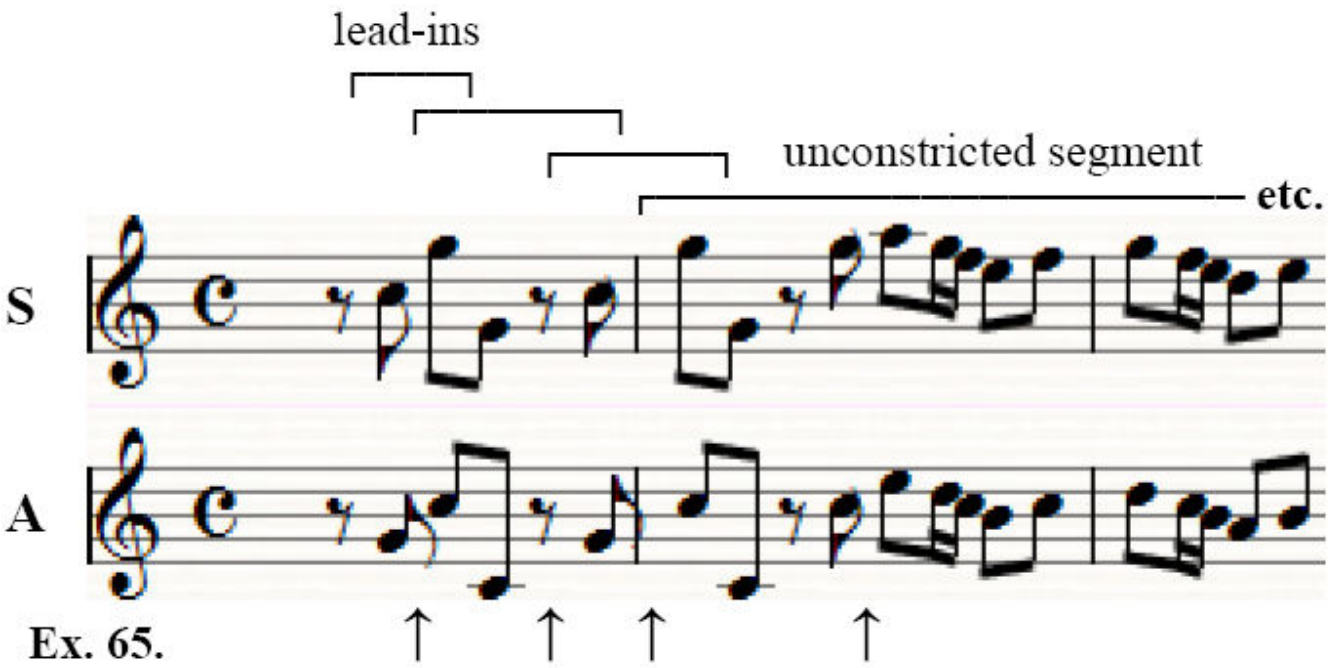


Ex. 63.
Gilles Jullien, Trio à Deux Dessus.[241]



Ex. 64.
Gottlieb Muffat, Toccata VII,[242] Fuga III.

By extension, “multiple lead-ins” might *include* lead-ins by substituted third. See Ex. 61. The first lead-in is a regular one; the next two are the kind that use substituted thirds, and as such are similar to the lead-in from Ex. 60. This, like the pre-



Ex. 65.

Georg Böhm, Fuga in C major. (The subject and answer continue, but both end on the same note shown—no further alterations.)[243]

vious examples in this section, is a key-retaining answer; indeed the fugue preserves the tonic tonality all through its exposition. The “extra” lead-ins seem to be felt as further bolstering that tonality; no surprise, as this is a basic function of most regular lead-ins as well. Somewhat analogous is Ex. 62. Its own second lead-in—again by substituted third—succeeds in averting what would today be called a perfect cadence on the subdominant, an effect already then warned about as tonality-obscuring.[240]

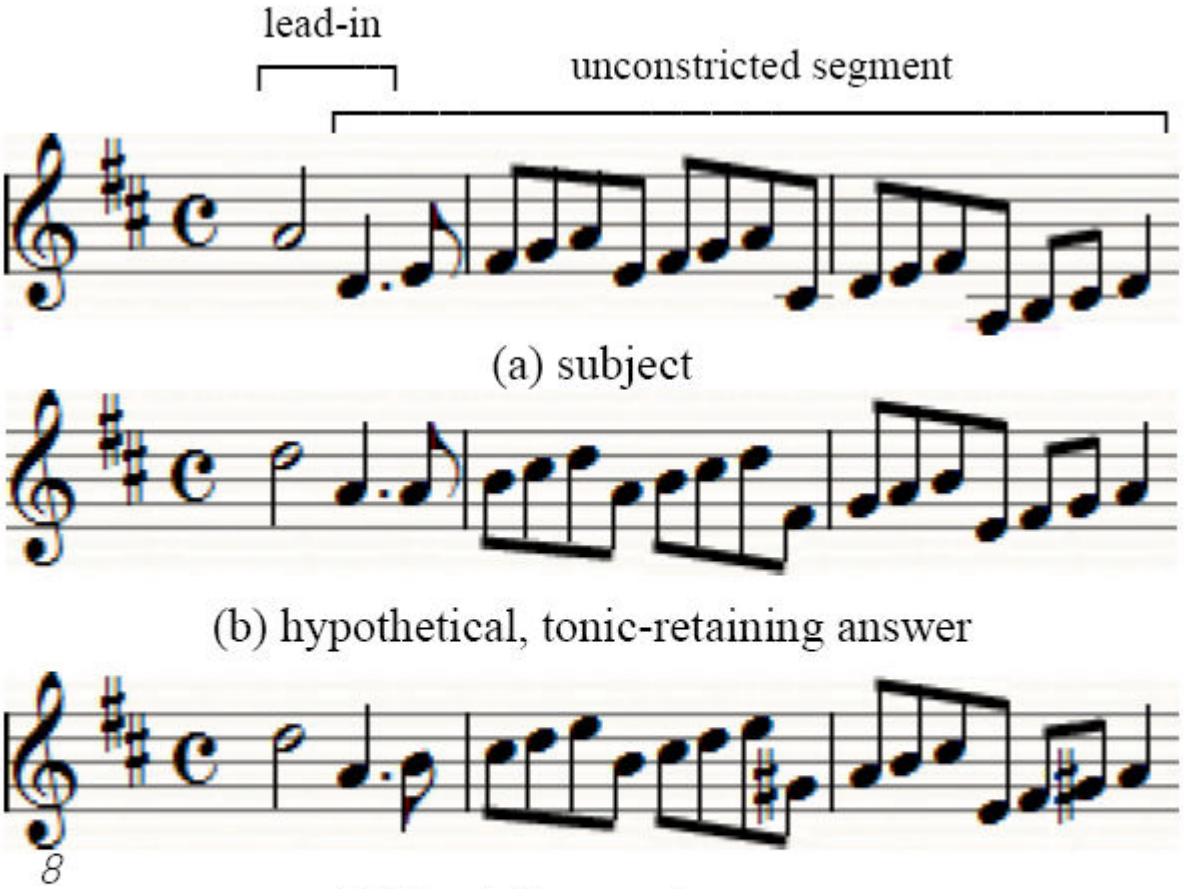
It was stressed earlier that opening motifs not contained in a fundamental fifth or fourth will not generally trigger the compass-exchange norm as such — even if they include tonic and dominant. However, there was no intention to suggest that this was an exceptionless rule. Clearly there are exceptions. In Ex. 63, a tiny compass breach occurs. It is merely an ornament: a *tremblement* on the third note.[244] Regardless, we

see here the mild oddity of the "compass-exchange norm" being applied in the absence of actual compass observance. (Naturally, what is an ornament sign in one work could be fully written-out in another, while the mutation might stay. Through this very human kind of "slippage," conceivably, precepts held dear in one era can be gradually forgotten in a later age; still later, perhaps, derided.[245]) In Ex. 64, again, the special range has been exited, yet this was not felt to preclude a tonal answer. One reason may be that the subject still possesses an "unbroken" fourth-compass; it is merely delayed, in a way that is basically trivial since the octave leap is harmonically neutral, and (unlike in Ex. 19b) does not actually interrupt a fundamental-interval motion. Musically, it seems difficult to object to Ex. 64's tonal answer. By extension, see Ex. 65: "multiple" lead-ins separated by octave leaps.[246]

PART II. THE "CLASSICAL" FUGAL ANSWER

Very gradually, and not in a linear evolution, by Bach's day, a newer methodology had largely supplanted the "key-retaining" answer, especially in the sorts of fugues that are repertorially central—those that Bullivant and Charles Rosen have called "pure" fugues[247] (chiefly meaning other-than-incidental fugues). Why did this newer system gain prevalence, and how did it work?

The "classical" fugal answer offers a solution to a problem that may have been noticed. Tonic-retaining answers are not always optimal—as imitations, or even as melodies. For Ex. 66a, I have intentionally selected a subject that seems to admit of a *passable,* but not a *good*, key-retaining answer. I have given it my best attempt in Ex. 66b, using the same overall approach seen in pp. 71-94. It is rather clumsy, but the tonic-



Ex. 66. Two possible answers to a subject (a) from Handel's *Belshazaar*.[248] Weaknesses of (b) include several tone-semitone exchanges, though the most conspicuous were avoided, and the answer of a sixth with a fifth.

key constraint leaves few if any convincing alternatives. Handel, instead, solved this a quite different way (Ex. 66c): "classical" procedure. One can see why this might often have been preferred. It is a much cleaner imitation.

Comparing Ex. 66(b and c) reveals similarities and differences between "typical" key-retaining, and classical answers to the same subject. The first important observation is that the

differences are confined to a limited area: *the inner notes of the unconstricted part*. The rest (the lead-in, and first and last notes) is treated the same way in both kinds of answer-procedure. This is typical.

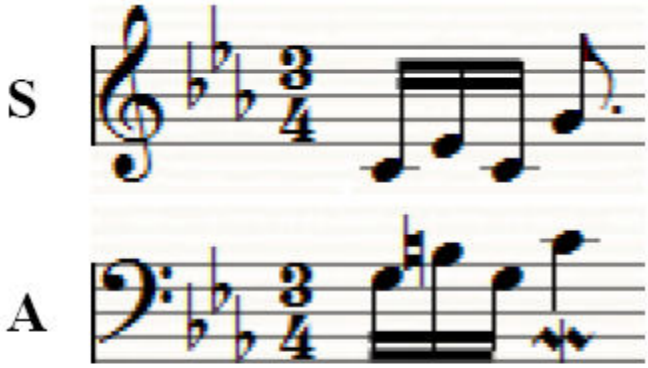
This suggests that the classical fugal answer is not purely the "key-change" method that has generally prevailed in modern theory Rather, it may involve a kind of division of melodic territory. One part of the subject—the lead-in—is answered pursuant to the old "key-retention" customs: more specifically, the compass-exchange norm. The other part—the unconstricted—is treated in line with the "key-changing" answer-technique, which in Ex. 66c entails simple transposition to the dominant. Evidently, these opposing theories of the answer, each with its own supporters, are both correct, depending on which part of the combination subject is at issue. Just as in our previous studies, Handel's answer can be easily predicted by splitting the subject into its two imaginary "component subjects," the lead-in and the un-

constricted, and answering each separately. Only the latter part is answered in a new way.

Ex. 93a (further ahead) shows a similar "division of territory." Had this subject received a tonic-retaining answer instead of its "classical" answer, there too the differences would, little doubt, have been confined to the inner notes of the unconstricted part. (At most. Indeed, the difference would probably involve no more than the absence or presence of the one sharp.)

The last four paragraphs offer a sort of *in nuce* view of "classical" procedure. For a fuller picture, we should once more individually discuss all three of our subject types. (The

threefold classification [pp. 46-8], per se, remains valid for classical fugue, as may have been gathered.)



Ex. 67. Bach, Passacaglia in C minor, BWV 582.

Lead-in subjects. The norms for answering these, discussed on pp. 48-54, remain basically identical in "classical" fugue. As *complete* subjects, lead-ins are not especially central to the classical repertory; they turn up now and then as incidental fugues (Ex. 67). On occasion, composers do modify the traditional "purely tonic" answer by adding a sharp, as in Ex. 4 This straightens out a tone-semitone exchange. Still, it is easiest to regard a sharp in this context, in agreement with Bullivant, as mere coloration within a basically key-retaining answer. The generic intervals are unaffected by it. Bach appears more often than not to leave such tone-semitone exchange "unvarnished."[249]

Unconstricted subjects. In classical fugue, most unconstricted themes (defined, p. 47) are answered from start to finish in essential accordance with the "key-change" theory. Ex. 5 illustrates. Notice that a key-retaining answer for this subject would be awkward. The key-change method, by contrast, simply and unproblematically transposes the subject—reflecting Prout's dictum, to repeat:

> The ANSWER is the transposition of the subject into the key of the perfect fourth or fifth above or below.… [Usually the keys] will be the tonic and dominant.[250]

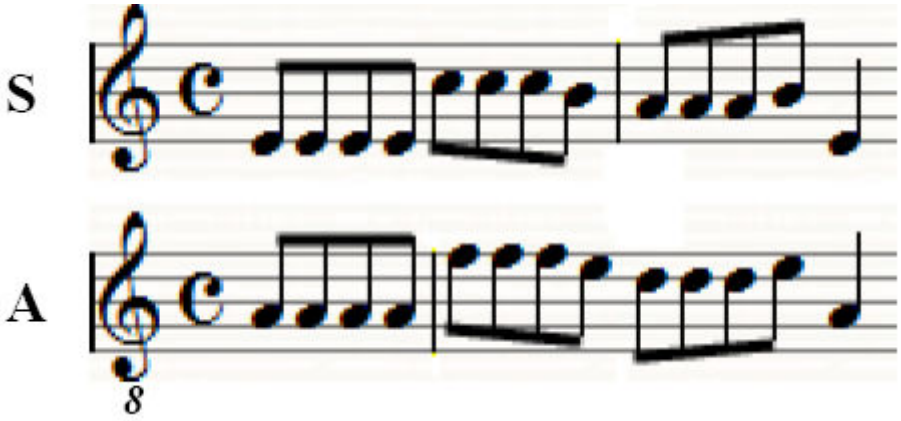
Note: the word “perfect” matters. The key-change technique essentially eliminates tone-semitone exchange as unnecessary, with one exception to be mentioned.

Let us progress beyond purely tonic-key subjects, to those that use the keys I and V. Here, we should recall Prout’s other tenet:

> If the subject be in the dominant, the answer will be in the tonic. If the subject begin in the tonic and modulate to the dominant, the answer will [modulate the opposite way], and *vice-versa*.[251]

This sounds straightforward. But there is a problem: reasonable people often disagree on what the key really is at a given point.[253] To solve this, some theorists successfully employ a strategy that I will call *the system of key-signifiers.*[254] The system postulates that certain notes in the subject are reliable signposts of the tonic key; others are good markers of the key of the dominant; and that just a few of these signals, even one, suffice to map any subject into its key areas. Before laying out the methodology, an alert is necessary. Certain of these key-assignments are, for lack of a better word, feigned. They do not correspond to the judgment of the ear—but they have reasons. An example will clarify. Ex. 68 is from a fugue whose overall key is A minor. The subject itself is fully compatible with A minor (Fischer harmonizes it as such). One might well suppose then, following Prout, that the answer simply transposes it to the upper fifth. However, most baroque composers would have rejected this solution, because it makes the answer begin and end on the supertonic B. To solve this problem, and replicate the composers’ practices, the system “pretends” that, if a subject’s outer notes are $\hat{5}$, these are

automatically in the key of V. This ensures the user will answer them at the lower fifth, the tonic. Similar, small "sleights-of-hand" exist here and there in the system, and can be regarded as virtues rather than flaws. They are aimed at ensuring the answer's continued proximity to the tonic—something not always achievable by indiscriminately transposing large passages *en bloc*. Therefore, when the system indicates that this or that note or passage is "in the dominant," it might really only mean this is "to be answered at the lower fifth," and so on. These verbal workarounds, the cost of trying to describe old practices in a modern lexicon, probably contribute to the present-day confusion about fugal answer. The problem is nonetheless only at a verbal, not practical level: it does not hinder the system's ability to predict the answers themselves accurately.[255] It must be stressed, though, the method is useful for unconstricted subjects only. (Lead-ins need no key-mapping, being "all-tonic.") As with other topics we have addressed, no two theorists describe this system the same way. I have compiled norms from various authors to obtain what I consider the most accurate result, adding a few of my own repertory-based observations. Following is the "system of key-signifiers": (all scale degrees are counted from the original tonic, regardless of the key under discussion, unless otherwise noted)—



Ex. 68. Fischer, Fuga III of Praeludium III, *Blumen-strauss*.[252]

In general:

1) As first or last note, $\hat{1}$ or $\hat{3}$ are automatically assigned to "I," and $\hat{5}$ or $\hat{7}$ automatically to "V."[256] Any note directly leading to such endings by step is assigned to the same key as the ending, to preserve the step. There are however two exceptions, in which notes that would otherwise be imputed to "V" may be assigned to "I" instead:

   A. If the leading note is the first or last note, and next to $\hat{1}$, it may be assigned to the tonic, especially in minor, but not necessarily. (Nor is this expedient the only way to conserve the semitone.)[257] This requires case-by-case decision, but the situation is uncommon.

   B. A final $\hat{5}$, preceded directly by $\hat{4}$♮ or $\hat{6}$ ♭, is almost invariably treated as in the tonic.[258] This is because:

2) Anywhere in the subject, $\hat{4}$♮ and $\hat{6}$ ♭ signify "I"; however, $\hat{4}$# signifies "V." (This makes sense in terms of ordinary tonal harmony.)[259] Two exceptions:

   A. All notes lose their key-signifying "power," and can therefore belong to either I or V, when functioning as chromaticisms.

   B. $\hat{4}$♮ likewise loses its status as signifier for I when, in minor, it is in the figure "$\hat{5}$ -$\hat{4}$♮-$\hat{3}$." (Reason: this opens up an alternate interpretation that recalculates the notes as "$\hat{8}$ -$\hat{7}$ ♮-$\hat{6}$ ♮" in V, an accepted usage in minor.)[260]

3) If on a strong beat; reached directly by "perfect cadence" (falling fifth or rising fourth); and followed by a rest or pause, then even in the middle of the subject, $\hat{1}$ and $\hat{5}$ signify the

keys whose tonics they are. This is even valid with either note in the "cadence" replaced by its third, provided it is harmonizable as a perfect cadence. The first note, unless it be literally $\hat{5}$, is automatically assigned to the same key as the second. If the cadence is metrically weaker than described above, then this "rule" *may* still work, but only sometimes.

Important: Outside the limited contexts specified in norms 1 and 3, the leading tone $\hat{7}$ (#) is a "signifier" for no key at all, not even in minor.

4) Below are other situations requiring more detail.

A. Passages in the (actual) subdominant key are answered "fifth-up"; hence they are calculated in effect as though in I.[261]

B. A closing $\hat{1}$-to-$\hat{5}$ cadence is answered by a *full* cadence. This remains valid even with either note in the cadence replaced by its third, or with steps inserted, unless this conflicts with 1B above, or would require deleting steps, or (case-by-case) involves a descending or unclear cadence. To apply this norm is, in effect, to calculate the $\hat{1}$ or $\hat{3}$ as being in I.[262]

C. Subjects in minor occasionally evince "Dorian"-like scale patterns. For example, in a fugue whose overall key is A minor, one might hear "E-F#-G♮-A." It usually turns out the composer is in effect reckoning the passage in V.[263] This reinterpretation "normalizes" the passage; e.g., the aforementioned is simply $\hat{1}$-$\hat{2}$-$\hat{3}$-$\hat{4}$ in E minor.

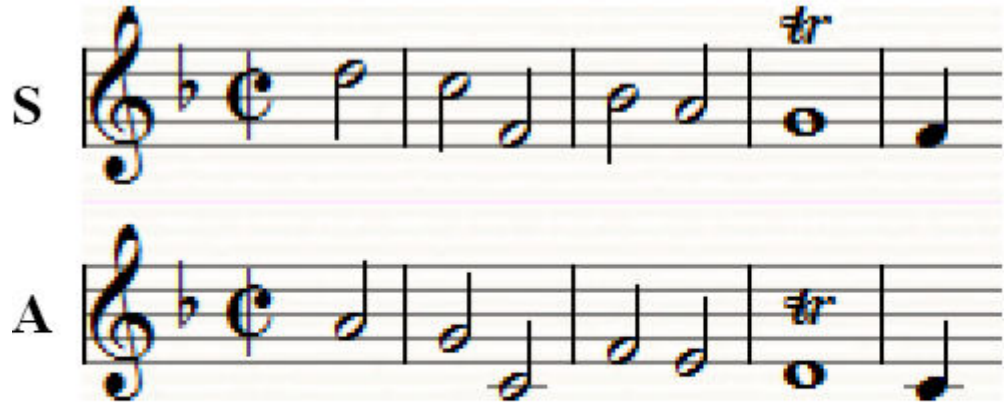
The notes specified in the above norms will be referred to as

"key-signifiers," or just signifiers.

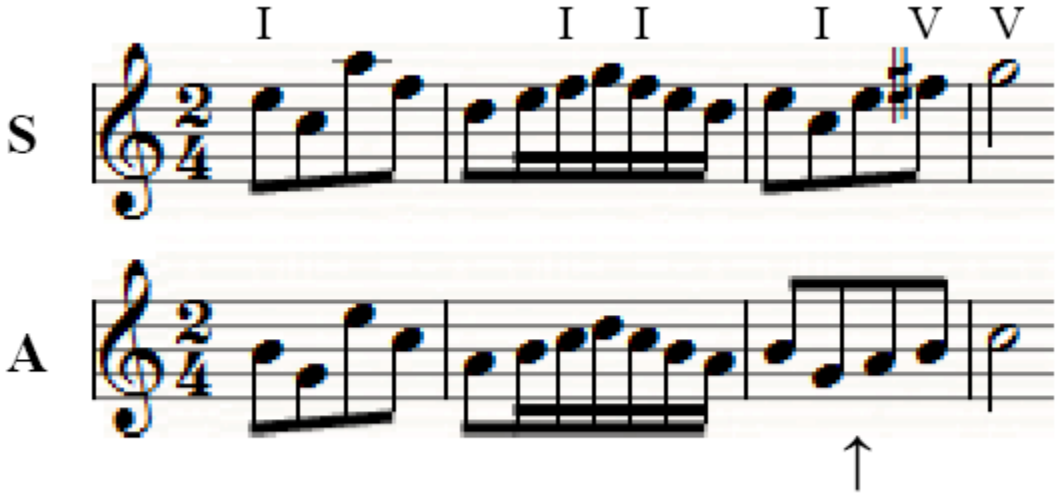
Let us give examples of how the system may be used. Only two basic scenarios are possible: either every key-signifier denotes the same key (whether I, or V); or, some signifiers indicate I, others V. We will look at the first, simpler scenario first. When all signifiers denote the same key, there is no modulation, so a real answer ensues. In Ex. 1, three notes of the subject would be construed as signifiers: the end-notes, both E, and A. Hence the subject is "tonic key" and answered at the upper fifth. Ex. 69 is marginally more difficult. It opens on a non-signifier, $\hat{6}$ of major. But it does contain $\hat{4}$ and end on $\hat{1}$, either of which suffice to signal the tonic; there is nothing to indicate otherwise, so tonic it is. (That the $\hat{6}$ is "next to $\hat{5}$," in the scale or even the actual melody, is rarely grounds for saying the key is V.)

Another case, mentioned earlier, is Ex. 68. The signifiers are the outer notes, both $\hat{5}$, betokening the key of the dominant, E minor. There is nothing in the middle to contradict that—inner-note tonics are not generally signifiers—so the entire subject is "dominant" and answered at the lower fifth.[264]

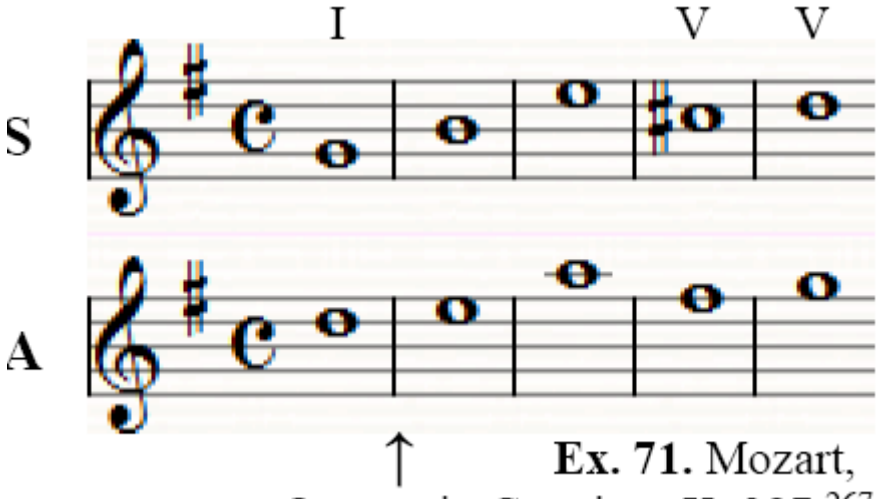
These last three subjects, incidentally, would have probably received identical answers under the "key-retention" theory. We saw this earlier, when we worked out a tonic-retaining answer for a theme just like Ex. 1: Ex. 28. Therefore, when Prout and Bullivant disagree as to whether the answer to Ex. 1, or similar cases, is tonic or dominant,[266] they are both correct. But this is not true of every subject. It would not work with Ex. 5, for instance, nor others shortly ahead.



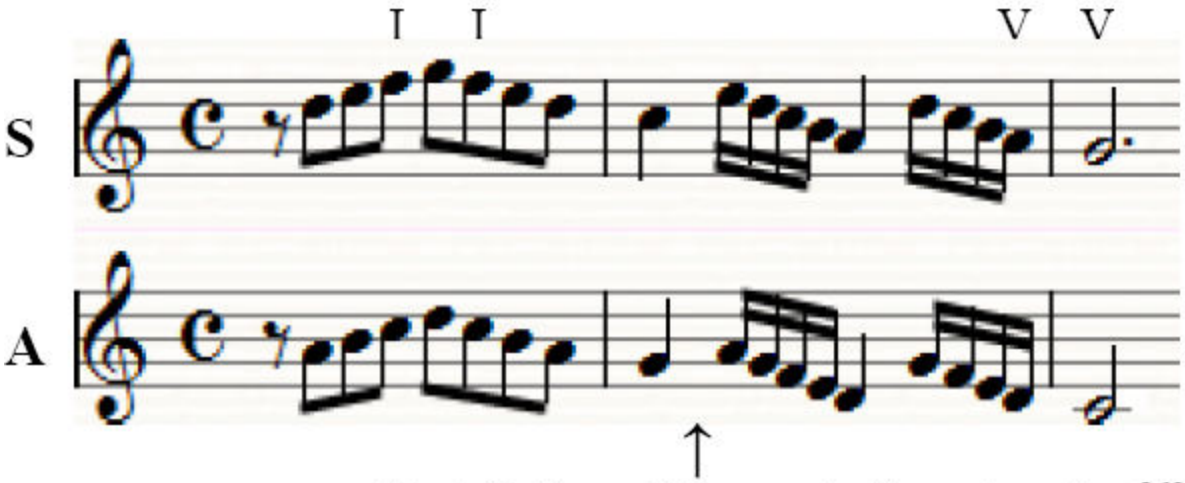
Ex. 69. Schwenke, quoted in Marchant, *Five Hundred*, no. 160.



Ex. 70. From Marpurg's fugue treatise.[265]



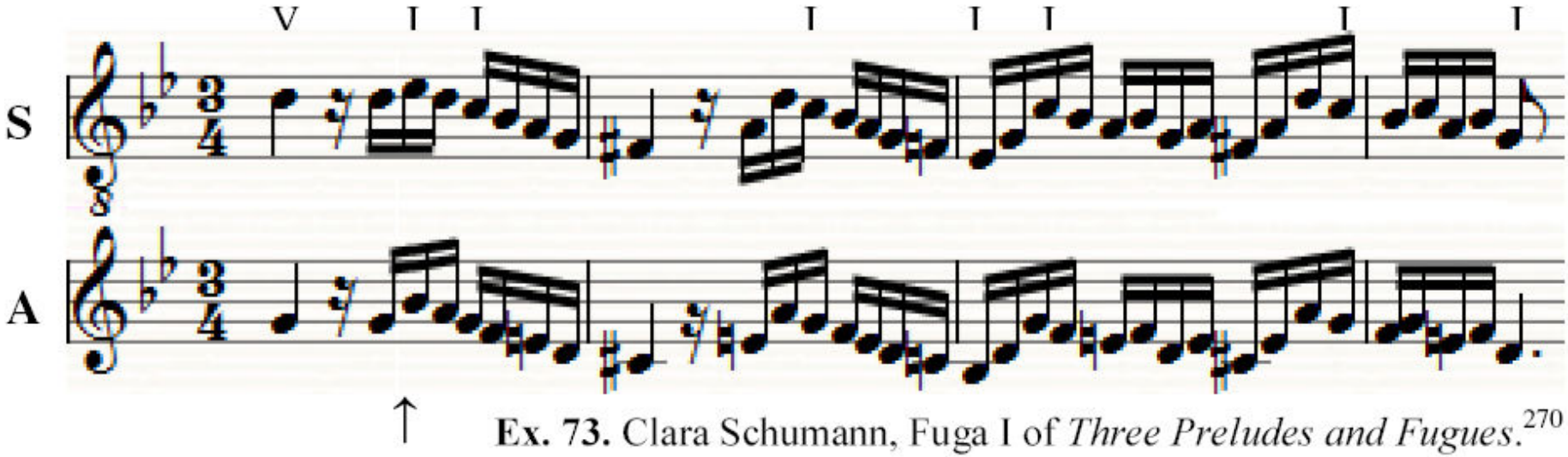
Ex. 71. Mozart, Quartet in G major, K. 387.[267]



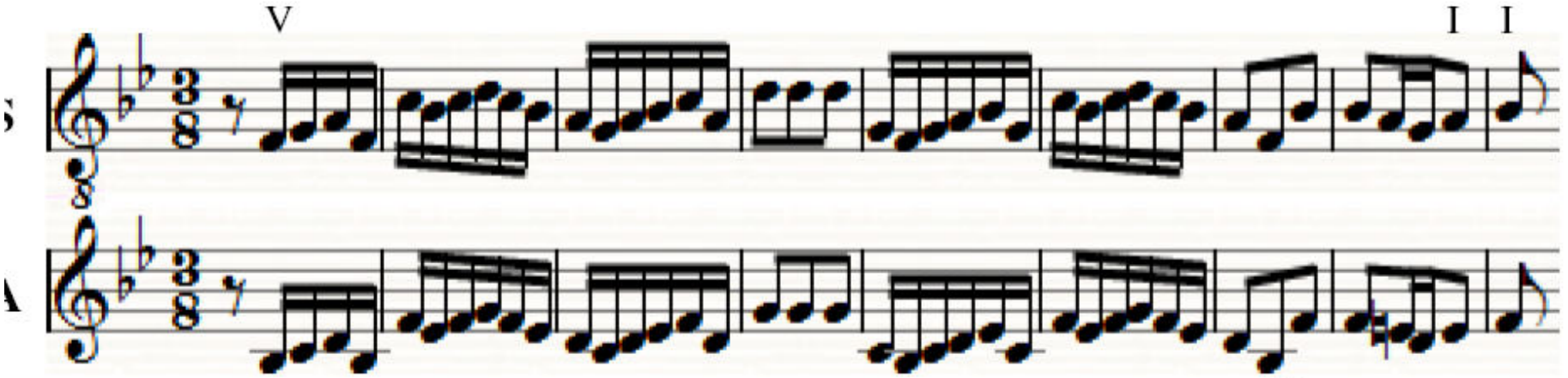
Ex. 72. From Marpurg's fugue treatise.[269]

Let us turn to the scenario in which some signifiers denote I, others V. This, of course, means we have one or more "modulations," each of which typically triggers one mutation. The only places where such modulations should generally be assumed to occur are where two successive signifiers mark different keys: specifically, somewhere between those points. (It seldom helps to postulate the existence of more modulations than the system calls for, notwithstanding suggestions to the contrary.[268]) Some examples: Ex. 70 starts on starts on 3̂ (signifier for I), then eventually closes on 4̂ #-5̂ (both denoting V). Thus it modulates to V. The answer switches from lower-fourth to lower-fifth to reflect this. I have placed I's and V's over the subject to mark each point where the system of key-signifiers identifies keys, and will continue doing this for the next several subjects.

Ex. 73 makes the opposite modulation: starting on 5̂ (signifier for V), it immediately goes to 6̂ ♭ (marking I). All subsequent signifiers again denote I, so the subject "modulates" from V to I right away. The answer reflects it.



Ex. 73. Clara Schumann, Fuga I of *Three Preludes and Fugues*.[270]

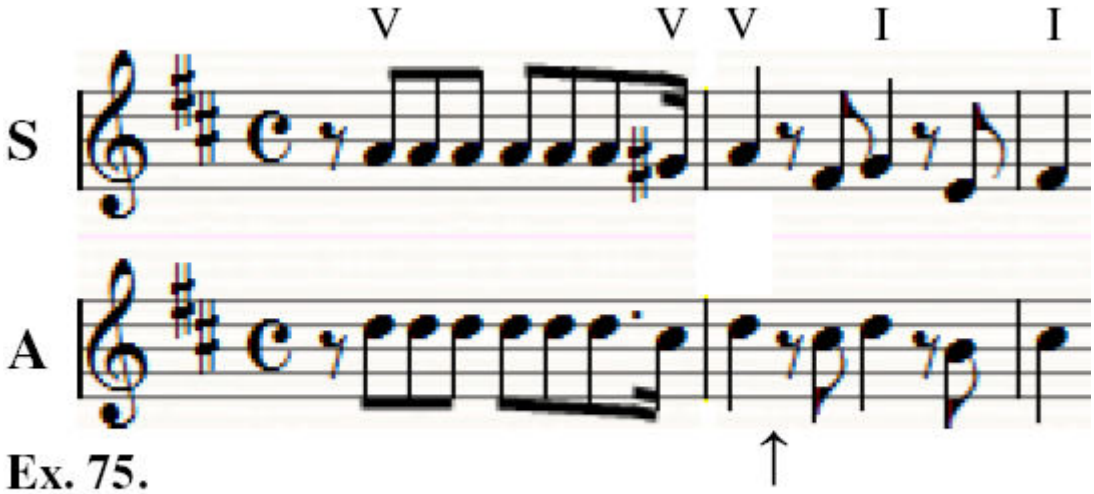


Ex. 74. J.S. Bach, motet "Singet dem Herrn ein neues Lied," BWV 225.[271]

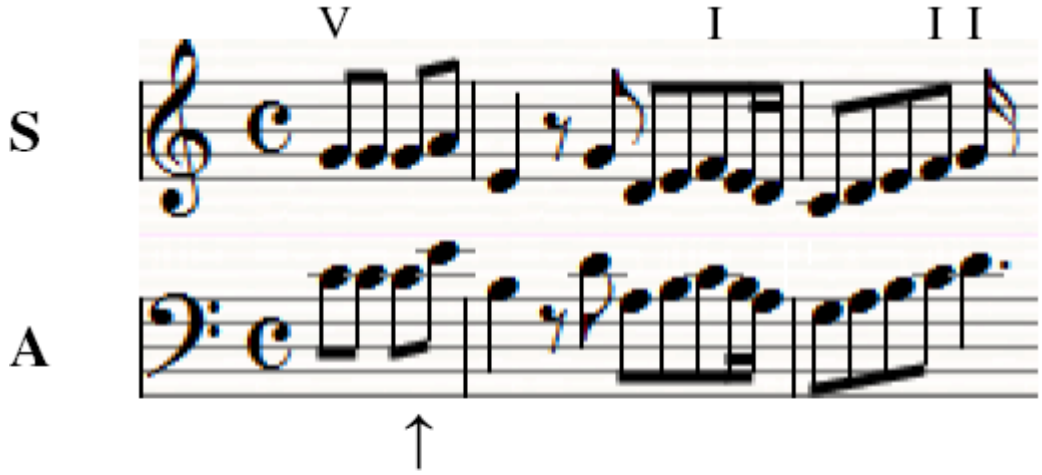
In the last two examples, it was fairly clear where to insert the mutation, because the signifiers indicating contrasting keys were close together. This narrows down where the "modulation" must have occurred to a small area. But sometimes the contrasting signifiers are further apart. See Ex. 71. The contrasting signifiers there are the first and fourth note, so the modulation could presumably be anywhere in between. One might call this a "neutral" zone.[274] How was the exact mutation point chosen?

Composers followed some fairly precise conventions about this. In addition to putting the mutation in the neutral zone (basically following common sense), major composers generally adhere to customs that we have met with previously: the *Walther-Banister norms.* These are on pp. 67-8, and should be interpreted so that all scale degrees are counted from the original and overall tonic. Thus, the norms work for both key-retaining and key-changing answers. The only notable difference concerns norm (e), "ASAP mutation." In the new system, one sometimes can put mutations even further to the left than before, because adjustments that introduce the key of the dominant are now "allowed." To illustrate, Ex. 42 is shown with a key-retaining answer. But under the key-changing procedure, the mutation could have been one step further back, which would create an F#.[277]

That understood, we can "solve" Ex. 71. It simply follows the Walther-Banister norms. Other cases of single modulations are Exx. 74-76 which all observe the same basic procedure. (Ex. 74 is not a combination subject, appearances notwithstanding: the upward fifth-leap is to $\hat{2}$.) Ex. 76, notably, reflects the important exception 1B on p. 101.

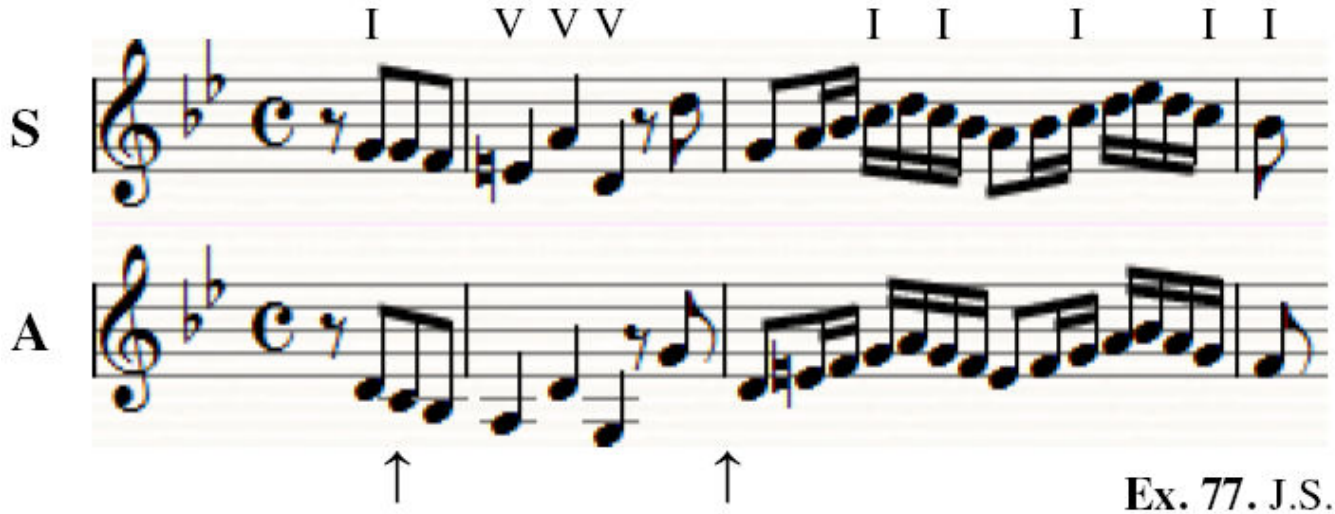


Ex. 75.
Buxtehude, Praeludium in D major, BuxWV 139.[272]

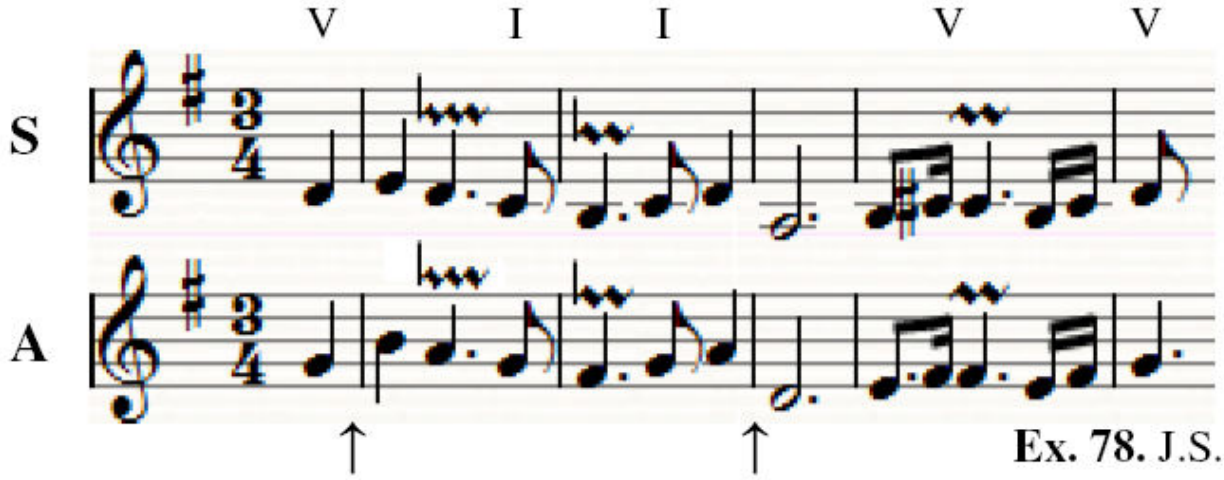


Ex. 76. Buxtehude, Praeludium in C major, BuxWV 136.[273] The subject "modulates" to the tonic despite ending on the dominant.

What if the modulating subject begins on a non-key-signifier, such as $\hat{2}$? Ex. 72 illustrates. Then, one seeks out the earliest note that *is* a signifier, and assigns everything before that to the same key. Therefore, Ex. 72 modulates from tonic to dominant and is answered accordingly. (Again: it is irrelevant,



Ex. 77. J.S. Bach, cantata *Aus der Tiefe Rufe Ich, Herr, Zu Dir*, BWV 131.[275] (The last measure is omitted, as immaterial to the answer analysis as such. The reply is real after the quoted passage and the last note is the same.)



Ex. 78. J.S. Bach, chorale prelude "Komm, Heiliger Geist," BWV 652.[276] The second mutation is "late" possibly because the earliest available point (one note earlier) would have required repeating a note.

a coincidence, that this opening note may or may not be "next to $\hat{1}$.")

Let us see examples with two "modulations." Ex. 77 can be mapped as "I-V-I," and Ex. 78 as "V-I-V," based on the system of key-signifiers. Thus the answers have two mutations. On the

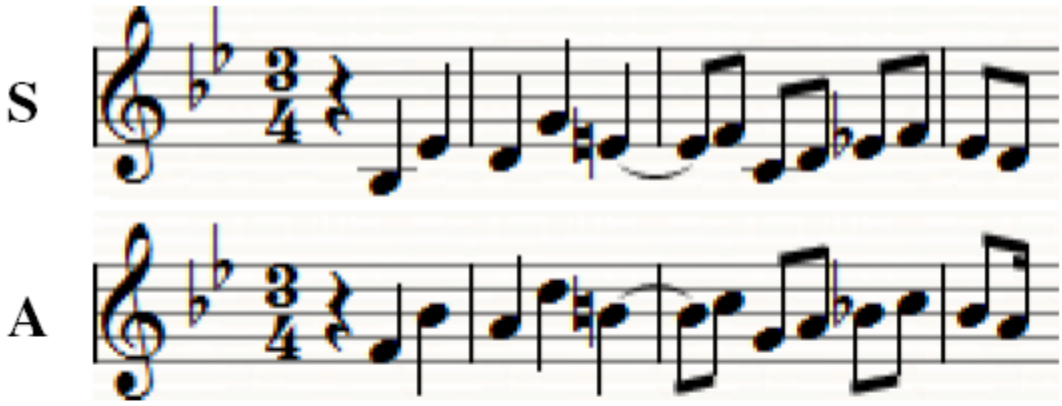
other hand, these double modulations sometimes elicit real answers, because it will make no difference to the beginning and end of the answer, often considered the principal parts. To illustrate, the subject of Ex. 79 modulates "I-V-I," but received a real answer as though it were all in the tonic. The basic ideas discussed thus far can be extended to any number of modulations.

Chromatic passages are treated as non-key signifying, even if they include notes that ordinarily would be signifiers. For example, in Ex. 81, the F# is not "part of the key of V," for it is in a chromatic sequence. The only signifiers are then the outer notes; hence, pursuant to ASAP mutation, the adjustment is all the way at left. (Mutation next to the subject's very first note is "allowed" even in chromatic passages.[278])

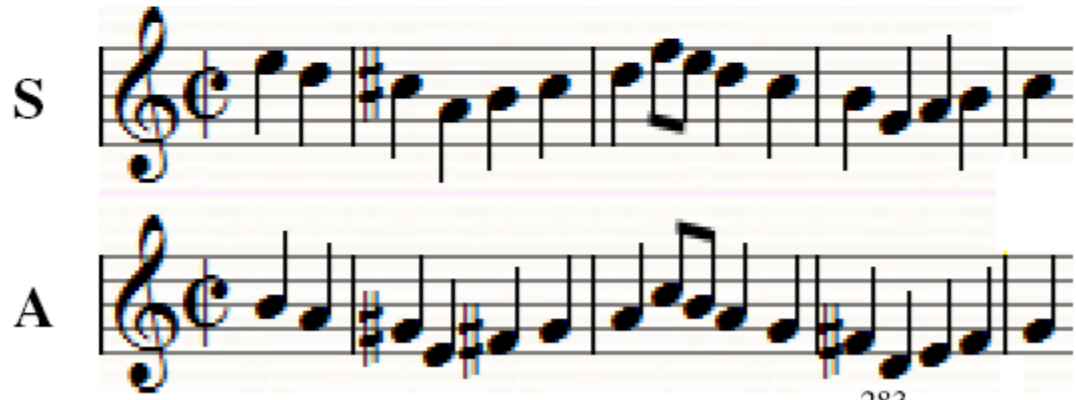
Equally "non-signifying" are passages in distant keys, "distant" here meaning keys outside I, V or IV (minor if the subject is minor, major if the subject is major). In Ex. 80 the subject touches on the supertonic key, but this is treated as part of the tonic key, because the "signifiers" (most plainly the two ends) denote the tonic.

In our examples of modulating subjects in this section, it will be found that almost all the mutations satisfy the Walther-Banister norms of pp. 67-8. (The only, partial exception is Ex. 78, whose second mutation partially disregards norm 2a. See "preferably.") "Late" mutations in Exx. 70, 72 and 74 are not exceptions, but attributable to "overriding factors" in the conventions themselves.

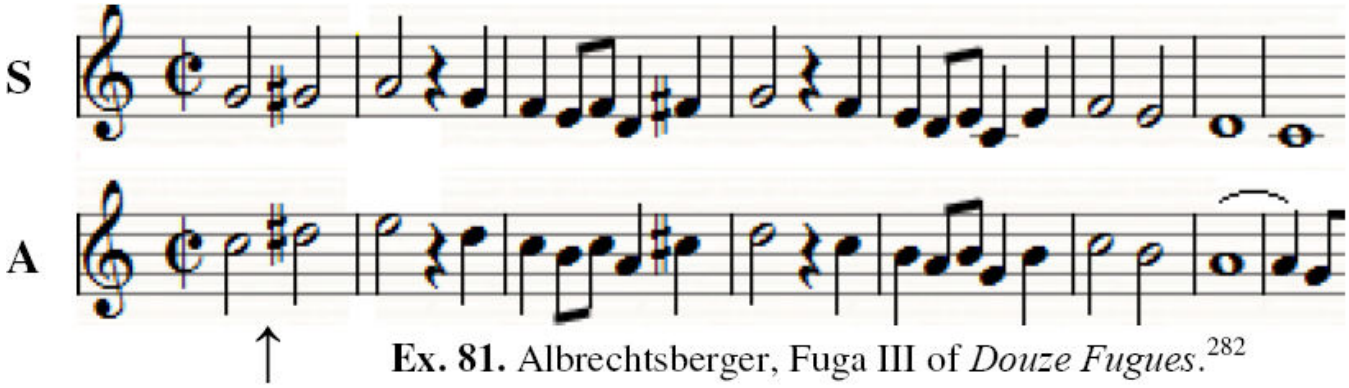
(That just one key-signifier suffices to "map" a whole subject is seen in Ex. 29. Its answer is normal both by key-



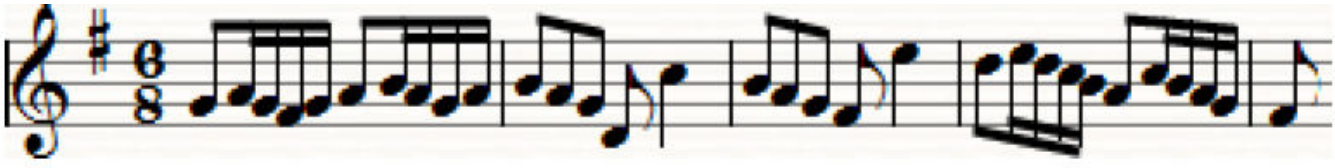
Ex. 79. Clara Schumann, Fuga II of *Three Preludes and Fugues*.[281]



Ex. 80. Samuel Wesley, quoted in Marchant.[283]



Ex. 81. Albrechtsberger, Fuga III of *Douze Fugues*.[282]



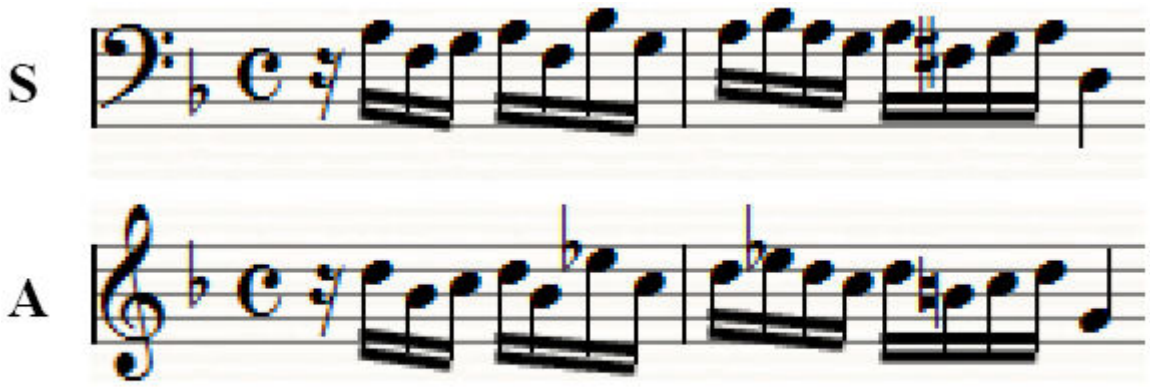
Ex. 82. G major fugue from WTC Book I. Bach's answer is real at the lower fourth.[279]

retaining principles and the key-change method, which reckons the last note as “signifier.” In the very rare case of no signifiers, a real answer at any pitch is possible.[280])

There are cases, as there were in key-retaining answers, where there is no way to effect mutations consistently with the Walther-Banister norms. In Ex. 82, alteration would presumably be wanted due to the subtonic close, but there is no “non-passing tonic or dominant” in the area where the key-change would occur, after the last C or 4̂♮. This renders the subject effectively “unalterable.” Bach chose a real answer ending on 4̂#. In other cases presenting similar issues, he finds an acceptable alternative location for the mutation.

Next, we must clarify a matter that to modern observers has appeared as one of the stranger aspects of baroque fugue. A perennial source of confusion and debate, complete with proposed corrections to Bach, this issue deserves special attention: namely, the paragraph marked “important” on p. 102, under norm 3.

The paragraph is not an additional norm; it only reemphasizes an idea implicit in the others. But the notion has encountered resistance in some musical quarters. Understandably so: it clashes with a widespread modern perception of the leading tone as “absolutely decisive for the tonic key.”[284] Worse, this norm sometimes squarely contradicts the ear’s judgment, especially in minor, directing us to label as “dominant” passages we may clearly hear as “tonic.” Nevertheless, it accurately corresponds to the practice of Bach’s time. It is related to the aforementioned “feigned” key assignments. To clarify it, we will examine six examples, beginning with simpler cases and culminating with a controversial one.

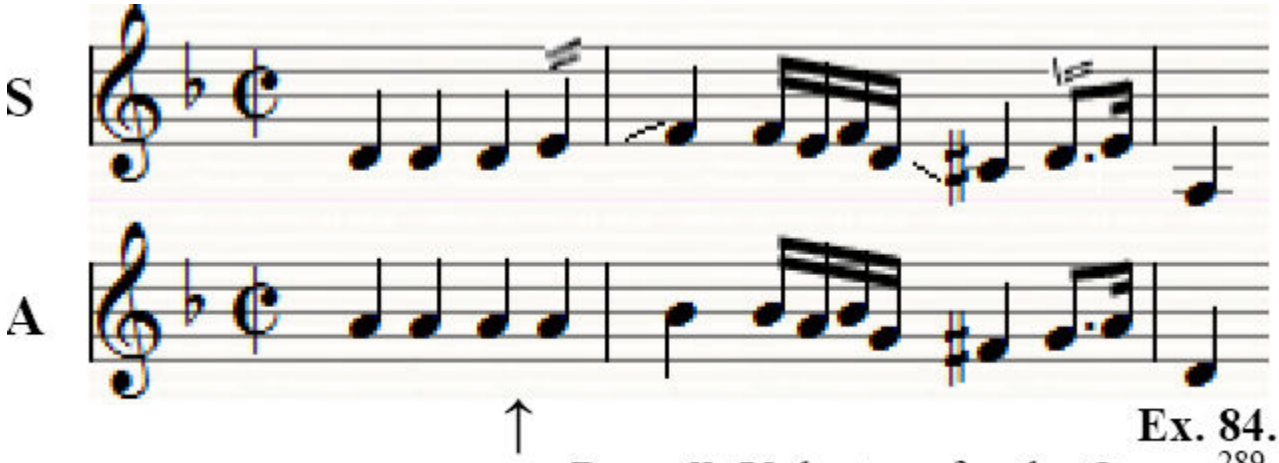


Ex. 83. Buxtehude, Praeludium in G minor, BuxWV 150, second subject.[288]

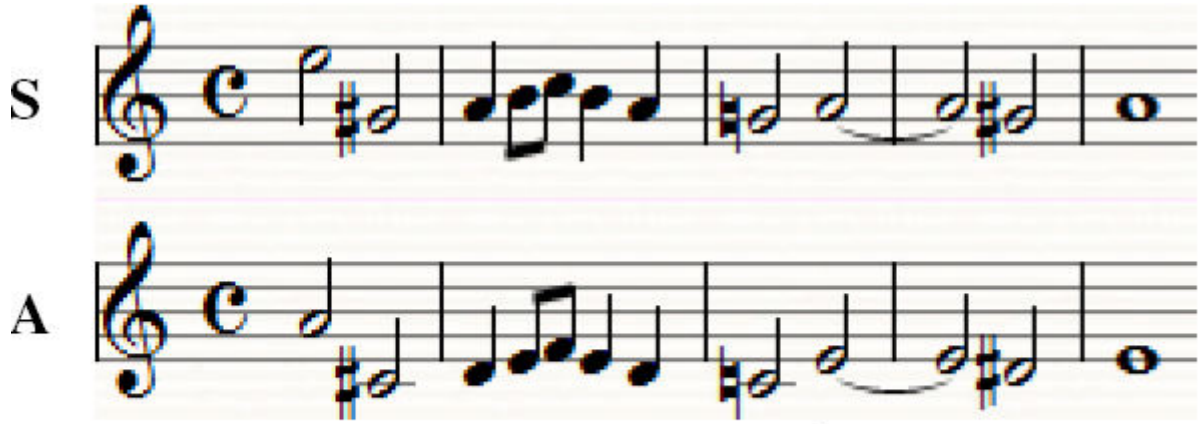
Let us review Ex. 74. Its closing cadence reflects a familiar situation: the leading tone A is considered part of the tonic key,

and is therefore answered at the dominant. It would seem natural to suppose this is a general "rule"; but it is not. In the first seven bars, the same A appears several times. But here it is not the "leading tone"—even if it does sometimes "lead" into B♭—because *locally* the key is V, as our guidelines, and probably the ear, suggest.[287] Hence these "leading tones" are calculated as the third of V, and answered accordingly. The same occurs in the second half of Ex. 72. Examples such as these are usually uncontroversial instances of this phenomenon, because the leading tone's aspect as "third of V" is readily enough perceived when the key is quite plainly V.

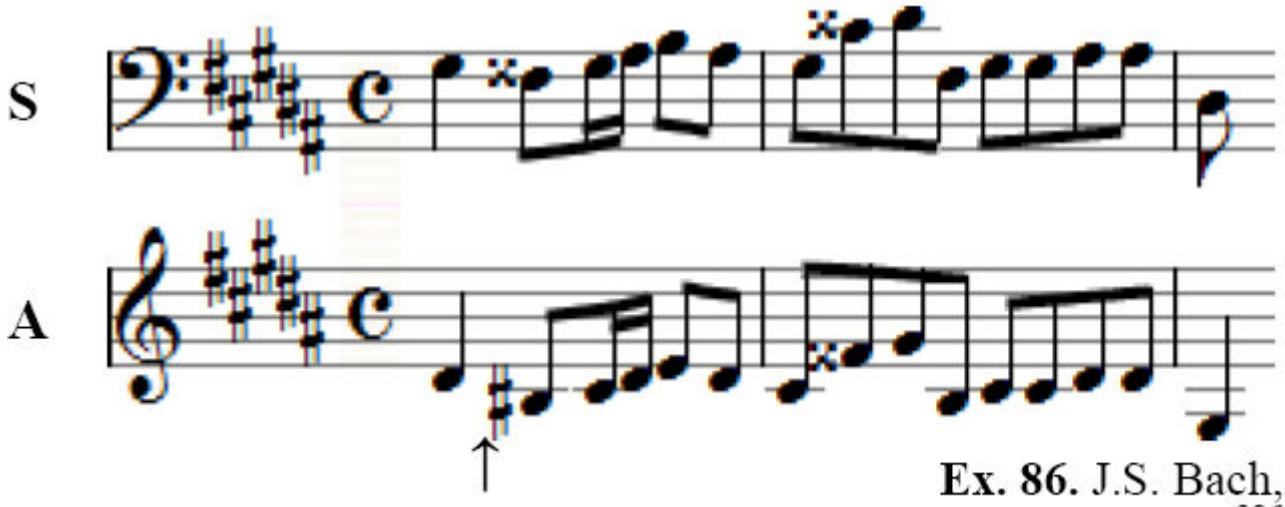
The issue becomes murkier in minor. In Ex. 83, the subject would seem to be wholly in D minor, or at least to have D as its tonal center. This is a fair description. However, the overall fugue is not in D, but G minor. Hence this subject is in the dominant. In the subject, once again, one finds the note (F#) that would be counted as the leading tone of the overall tonic. Yet it is not the leading tone, because *locally* the key is V, so this is counted as the third of the key. More precisely, it is



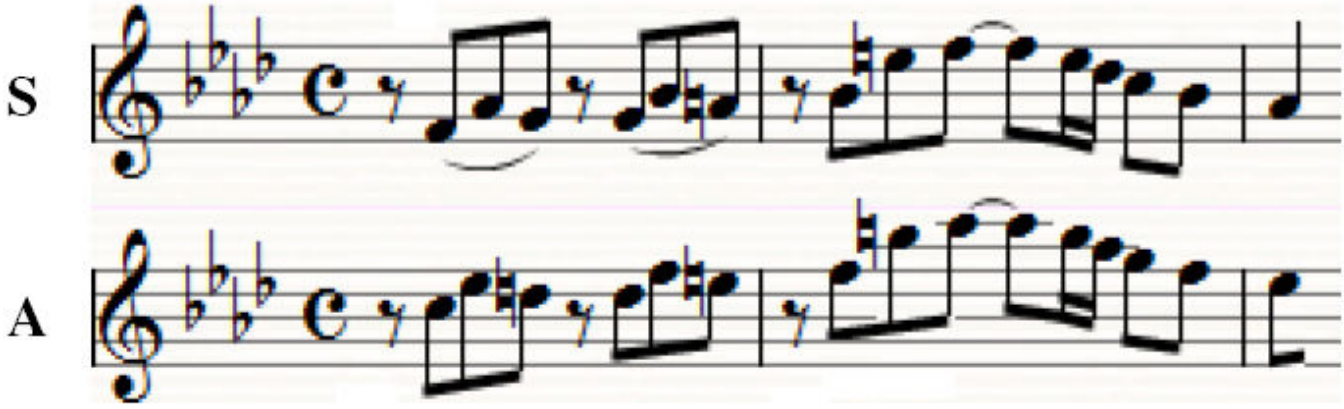
Ex. 84.
Purcell, Voluntary for the Organ.[289].



Ex. 85. Elwart, didactic example. Elwart's comments on it are noteworthy.[285]



Ex. 86. J.S. Bach, G# minor fugue from WTC Book I.[286]



Ex. 87. Bach, 3-part invention No. 9 [290]

reckoned as the major third in the minor key of V; in effect, as the dominant's own "Picardy third." It is therefore answered by the major third of the tonic. (That is, the "'actual' Picardy third.")

Even my suggested analysis of Ex. 83 might escape serious controversy, I can hope, if only because the whole subject fairly clearly has the tonal center D; thus, few would pick out a tiny sliver, "F#-G," and ascribe it to a separate tonic, G.

Let us now add a further small complication. It seems unobjectionable to say that whatever can occur in an "all-dominant" subject, can also occur in a dominant-key *area* of a modulating subject. Three such cases are Exx. 84-86, all again in minor, and all of which have dominant-key areas (the earlier part of Ex. 85; the later part of the others). The arrows indicating mutations show where the key areas were distinguished; this is all done pursuant to our familiar norms, the system of key-signifiers, and "ASAP mutation." By now, the procedure will be familiar. In the "dominant"-key areas, leading tones are counted as third of the dominant.

At this point, some readers may put their foot down and declare that these passages, inasmuch as they sound the

leading tone of the *tonic*, are most certainly not in the dominant. The ear rebels. Ex. 86 sparked the great controversy. Nalden wrote:

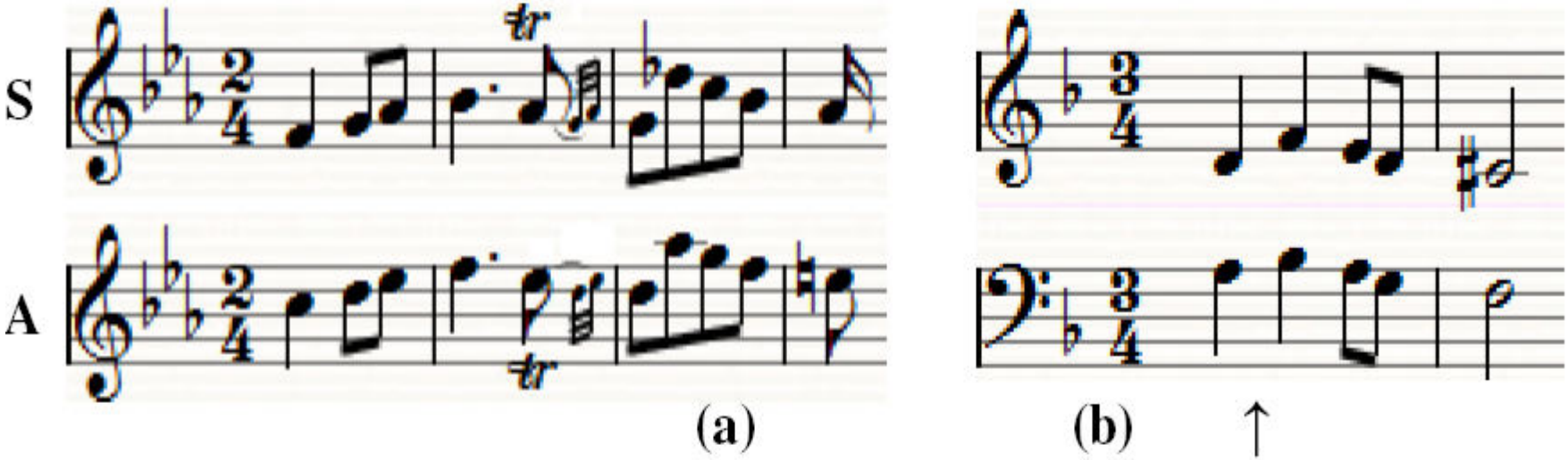
> The ear is the only guide, and nothing will convince the ear that the opening bar of the subject is in any key other than the tonic, any more than are the second to seventh notes of the answer in any key other than the subdominant. … [the] subject and answer involv[e] three tonalities (tonic, dominant, and subdominant).[291]

Nalden here lodges a serious and not easily dismissed objection against conventional "key-change" theories. Nor is he alone in raising similar criticism. If he has characterized the subject and answer correctly, then key-change theory would seem unable account for this answer, notwithstanding assertions to the contrary by Higgs, Prout and Gédalge. At least a dozen authors have discussed this answer.[292] To some, Bach himself is in error.

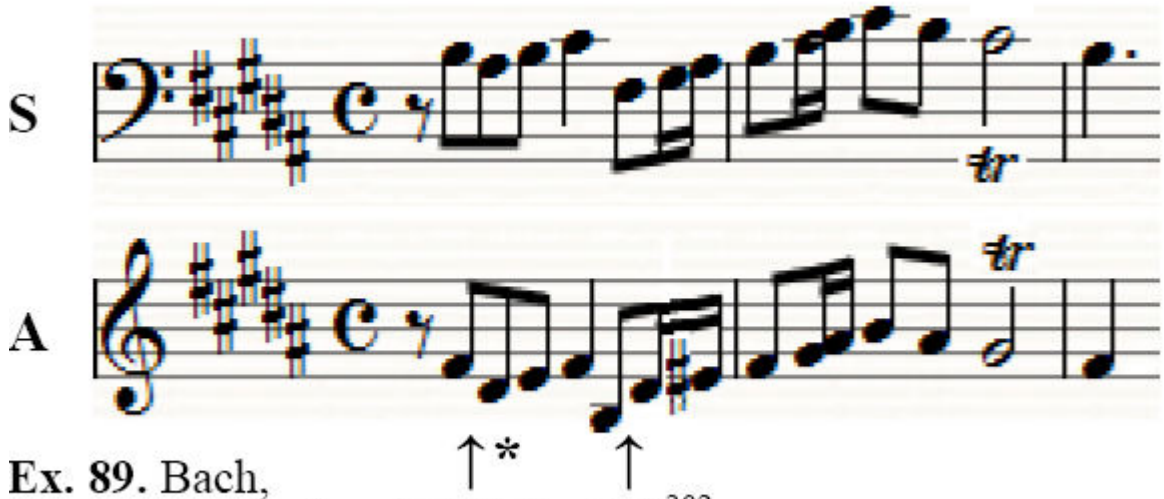
This is all explainable. As discussed on p. 99, the key-change theory sometimes makes "feigned" key-assignments, whose effect is to keep some answers tethered to the tonic key more extensively than a "pure" key-change method would predict. Presumably, Nalden would counter that this explains nothing, because the six-note patch in the answer is not tonic but subdominant. Here, though, we have reached the nub of the matter. Musicians in the time of this fugue would not have said the answer visits the latter key. We know this because Rameau and Mattheson discuss themes with similar features ($\hat{3}$ # leading to $\hat{4}$ —what sounds to us like a subdominant modulation)—but discuss them as being in the tonic.[293] It

seems likely this mindset is traceable to the habit discussed on p. 38: the allowance for using $\hat{3}$# in minor, almost indispensable for key-retaining answers, of which we gave four examples. In short, then, there would be nothing to prevent a baroque musician from labeling the first seven notes of Ex. 86 "tonic-key" in both subject and answer.[294] Of course, the key-change theory calculates that this part of the subject is *dominant*, not tonic; but that is no different in principle from the "feigning" discussed in connection with Ex. 68. So in fact everything is normal. Bach's answer basically follows the mores of his day, and the system predicts it correctly.[295] It is understandable that it all seems strange in retrospect, hence Nalden's incredulity. Incidentally, in "classical" as well as other fugues, $\hat{3}$# could appear in not only answers but subjects, without necessarily implying modulation. See Ex. 87. Apparently these "non-cadential Picardy thirds" were not only tolerated, but enjoyed.[296]

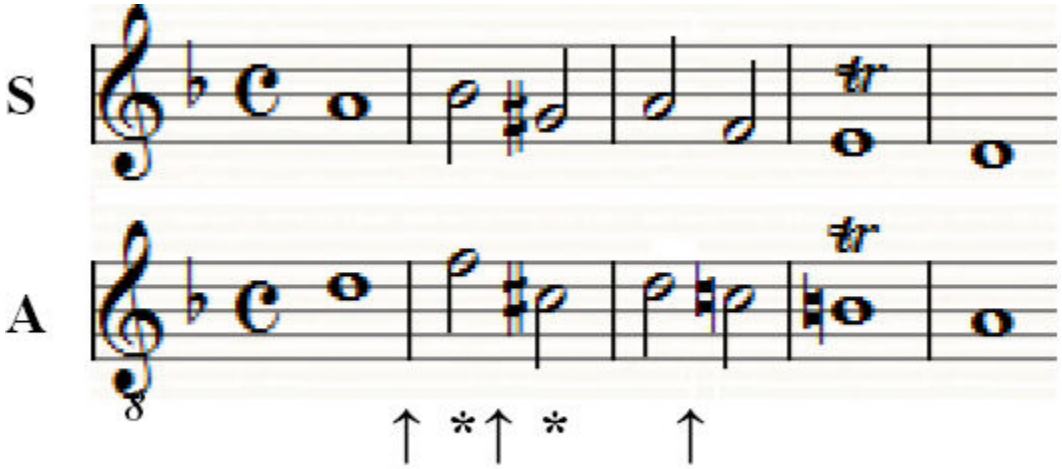
It may not have escaped the reader's notice that in "key-changing" answers, some things are still done the older way, as in key-retaining answers. On this topic, the issue of outer notes requires further remark. Notice these "strategic" notes are answered extremely similarly in key-change theory as in key-retention theory. (Compare norm 1 on p. 101 with p. 63, first paragraph.) Thus from one perspective, the outer notes never leave the tonic key. This manifests itself in other ways, as well. Namely: in key-changing answers, in minor, the "license" of answering $\hat{3}$♮ by $\hat{7}$# or vice- versa (p. 38, no. 2—an imperfect interval-of-answer)—lives on, but, in a custom noted by Prout,[299] only for the last note (Ex. 88a). Incidentally, he omits the "vice-versa" aspect of this,[300] but the repertory amply attests to it (e.g., Ex. 88b).



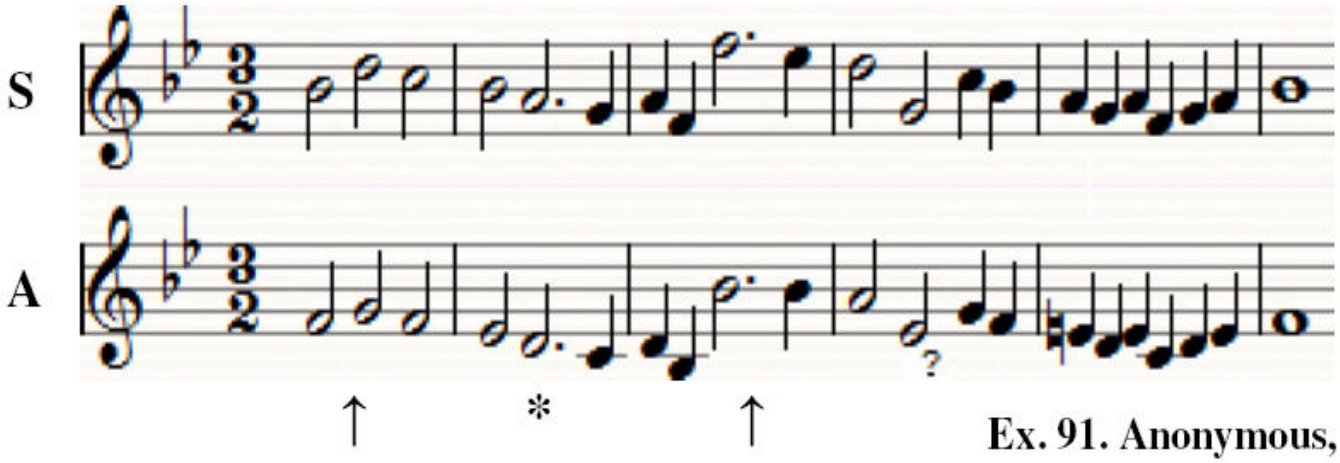
Ex. 88. "$\hat{3}\flat$ versus $\hat{7}\#$" at the close, in both directions. (a) Beethoven, from "Marcia Funebre" of Symphony no. 3.[297] (b) Verset No. 2, Primi Toni, from Michael Haydn's *50 Preludes, Versets and Cadenzas for Organ*.[298]



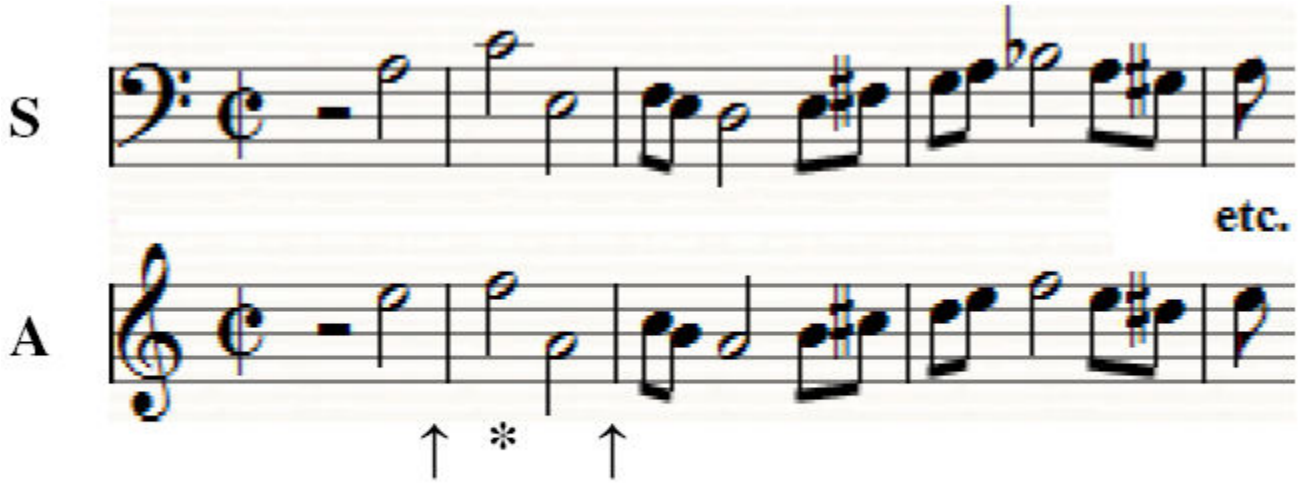
Ex. 89. Bach, B major fugue from WTC Book I.[302]



Ex. 90. Albrechtsberger, model subject and answer.[304]



Ex. 91. Anonymous, quoted in Marchant. (The E♭ at m. 4 of the answer appears to be a misprint and was probably intended as D.[303])



Ex. 92. Bach, Duetto No. 4, BWV 805. This tonal answer prevents not an accidental, but ascent to the minor seventh of the scale.[301]

Despite their similarities, the "key-retention" and "key-change" theories are distinct: sufficiently so, that most answers (for unconstricted themes) are explainable wholly by the one, or wholly by the other. Invoking both—while often possible, as in Ex. 1—is seldom necessary.

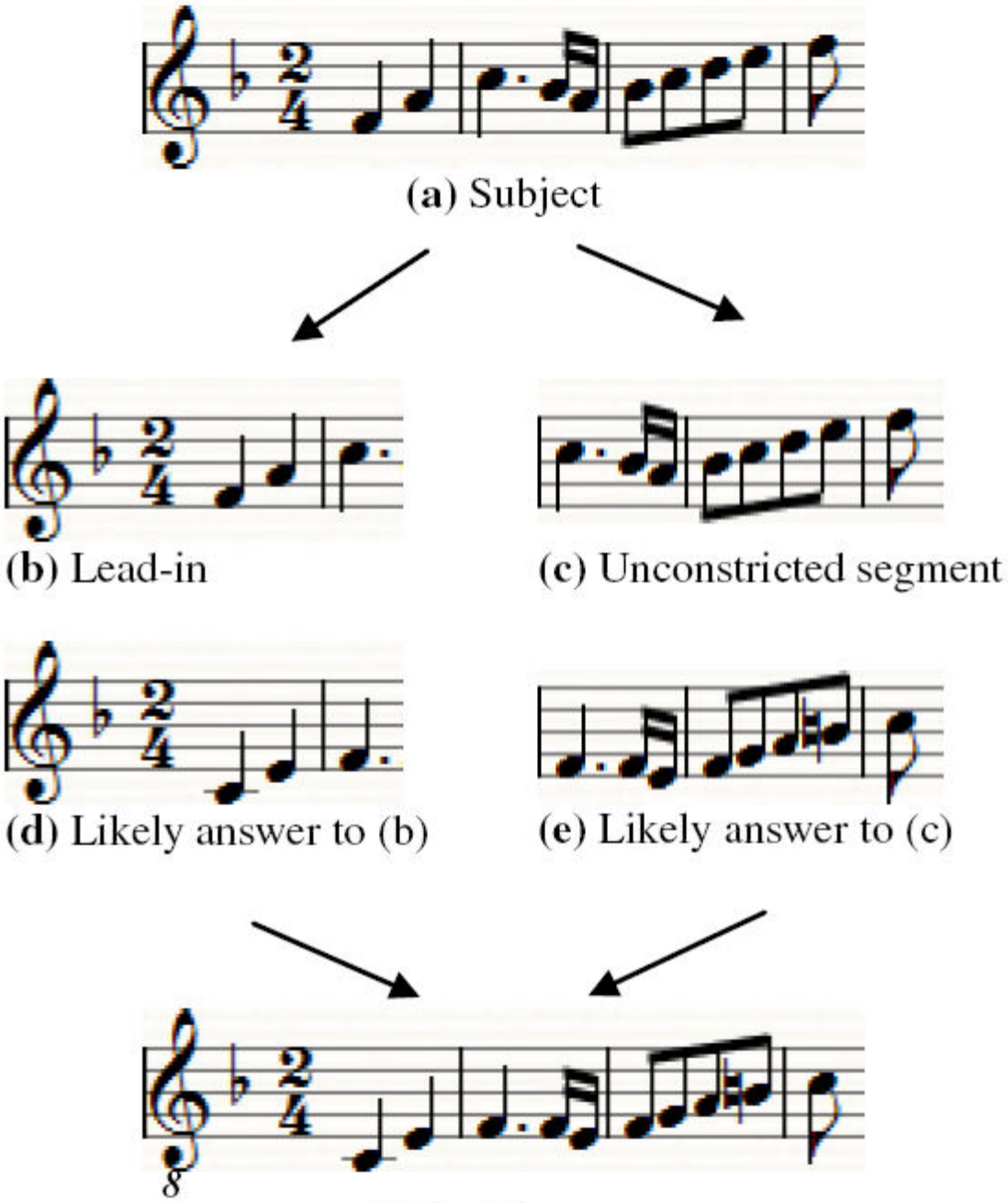
Nonetheless, occasionally, answers are unexplainable without recourse to both theories. Some answers accord with the key-change theory at a *large* scale, but the key-retention procedure at a *small* scale—as though temporarily reverting to a former habit. See Ex. 91. Key-change theory correctly predicts the answer's beginning and end; but it fails to explain the tonally answered "patch" in the first half. That patch does, however, reenact a technique we saw in certain tonic-retaining answers: the "accidental-avoiding" adjustment (pp. 64-66). An asterisk marks where a sharp is averted. (Ex. 39 from earlier is similar.) Since this is done smoothly, without tone-semitone exchange, a modern theorist might well be deceived into thinking it merely

a peculiar form of "key-changing answer," reflecting a sort of implied modulation. Misunderstandings of this nature are endemic.[305] An analogous case is Ex. 89,[306] which has been described as reflecting an "unusual" key-analysis by Bach,[307] the evident premise being—again—that Bach must have used the key-change method.[308] And he largely did; just in not the tonally answered "patch," which again exhibits the familiar accidental avoidance.[309] (Ex. 38 from earlier is similar). Exx. 90 and 92 are further instances (comparable to Exx. 36 and 37, respectively.) Note: these "reversions" typically affect the beginning.[310] Recall, too, any tonally answered $\hat{5}$ is best understood as a "side benefit" (p. 66)—not the chief motivation, which, as Albrechtsberger states, is to avoid a "foreign" key.[311] Answers sometimes use "tonic-retention" even though a foreign key has already been heard![312]

Combination themes in "classical" fugue. We just discussed some ways in which the classical answer occasionally reverts to the "older" key-retaining answer. But we intentionally deferred addressing the most common and important way in which this reversion—preservation may be a better word—can occur. This is by means of a familiar device: the "combination theme."

Readers will recall Ex. 46 (p. 73), where the expected answer for a "combination subject" in key-retention theory was worked out. Ex. 93 shows the same process, with one difference: it employs the "classical" technique.

As suggested, it is a hybrid method. The first part of the subject, the lead-in, is answered by the old, key-retaining procedure. This is visible in Ex. 93 (b and d). The only portion for which a new technique is discernible is the unconstricted

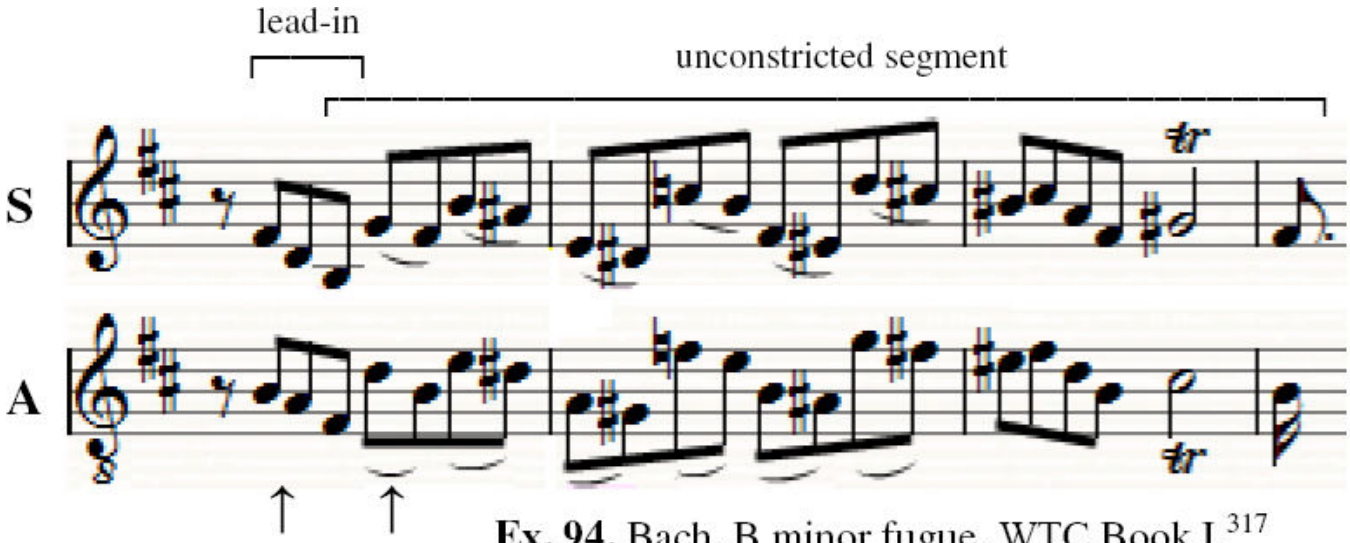


Ex. 93. "Predicting" a composer's answer to a combination subject by breaking it into parts, now in "classical" fugue. Duetto II, BWV 803.[313]

part: Ex. 93 (c and e). This segment has been answered following the key-change theory as described on pp. 98-121. This successfully predicts Bach's choice.[314] At the conclusion of the process—Ex. 93f where the two segments are reunited—we see Bach's entire answer has been replicated. Observe too that the only areas of the theme where anything might have differed in a key-retaining answer, are the inner notes of the unconstricted part—B♭ through E in the subject, and corresponding notes in the answer. (For some themes, such as Ex. 112, there is no difference at all.)

Thus we find again that the opposing theories—"key retention" and "key change"—are reconcilable, provided each is applied to a specific kind of melodic "territory." These territories are united in the combination theme.[315] The "hinge note" (the dotted quarter in Ex. 93), where parts overlap, is a peculiar entity, marking the moment where the answer transitions from adhering to the old theory to satisfying the new theory. As seen from the *approach*, this dotted quarter note belongs to the tonic key in both subject and answer. Yet as considered in *retrospect*, the dotted note belongs to a different key in the subject and the answer. This concept is reminiscent of (though clearly different from) the idea, well accepted in harmonic theory, of modulations taking place via "pivot chords."[316] Both concepts involve events that have one musical significance at the moment they occur, but a different meaning "in the rear-view mirror."

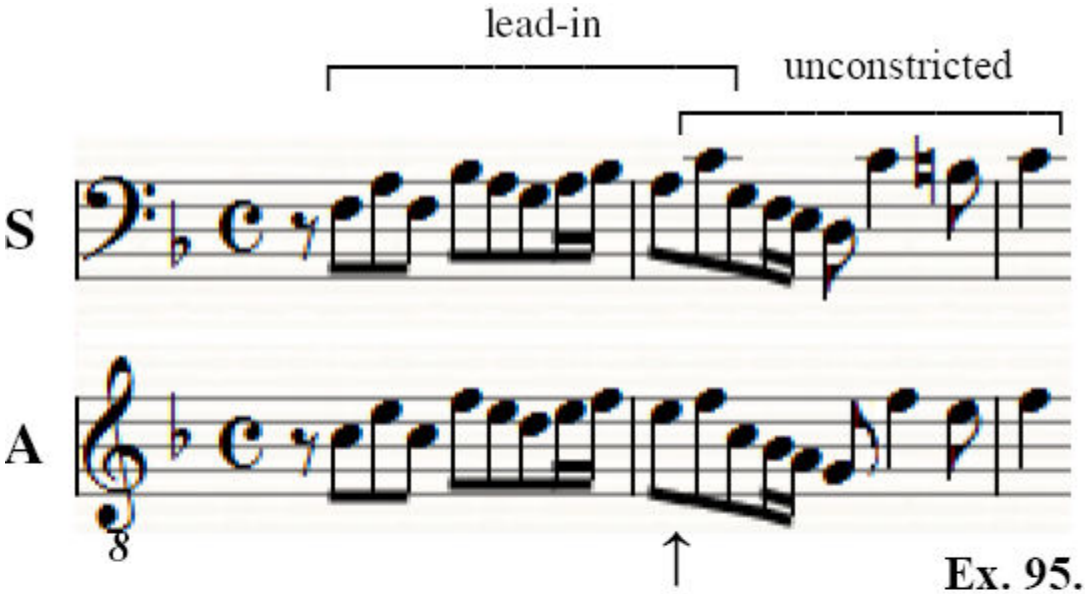
Let us take a more difficult subject. Ex. 94 has been "much debated"[318] and caused confusion. The familiar "corrections" to Bach have been proffered.[319] Even Prout, a great champion of Bach, appears not wholly at ease with it. The answer is more



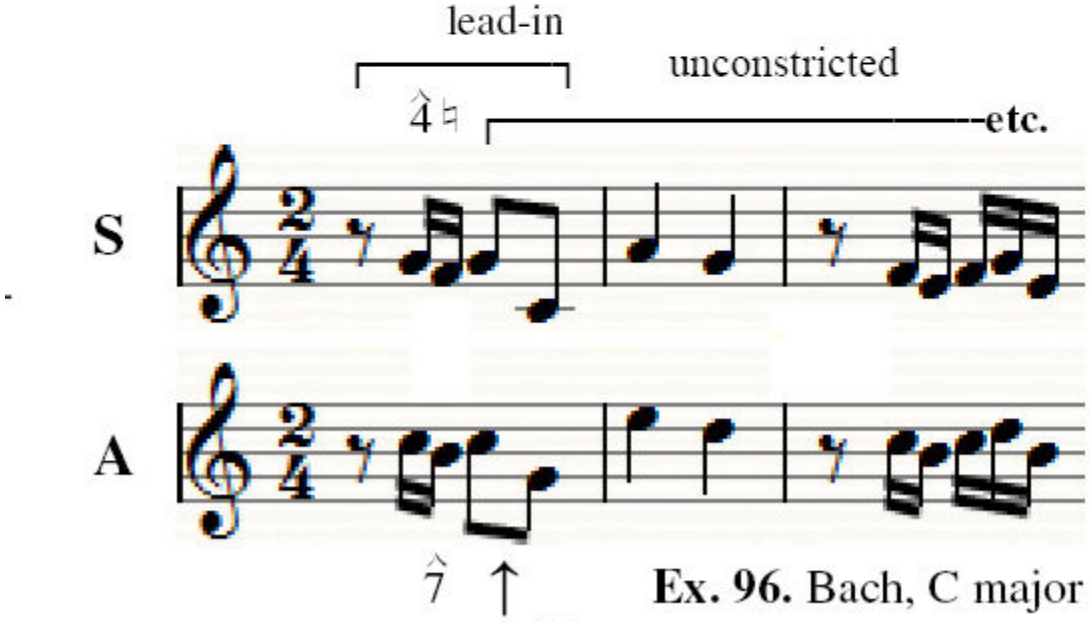
Ex. 94. Bach, B minor fugue, WTC Book I.[317]

comprehensible, as usual, if one separates the sections. The lead-in F#-D-B is answered "by the book" (Table 6). The same goes for the unconstricted part. Viewed as an independent subject, this moves from $\hat{1}$ to $\hat{5}$—these are the "key-signifying" outer notes, by which we mean the outer notes *of the unconstricted part*, not of the whole thing. Thus, this section modulates once. Actually, both its first two notes "signify" the tonic. Therefore, the predicted mo-dulation occurs just where we should expect—after the second note. Recall too that chromatic sequences are not key-defining for either I or V (see p. 110). This subject has one legitimately tricky aspect: the figure G-F# seems, perhaps, to belong to the chromatic sequence, and if so, Bach would have flouted the convention against mutating chromatic passages (p. 67, 'c'). But strictly speaking, G-F# is not part of the chromatic sequence. It uses only the natural minor scale, and its pitch level does not conform to the sequence pattern.

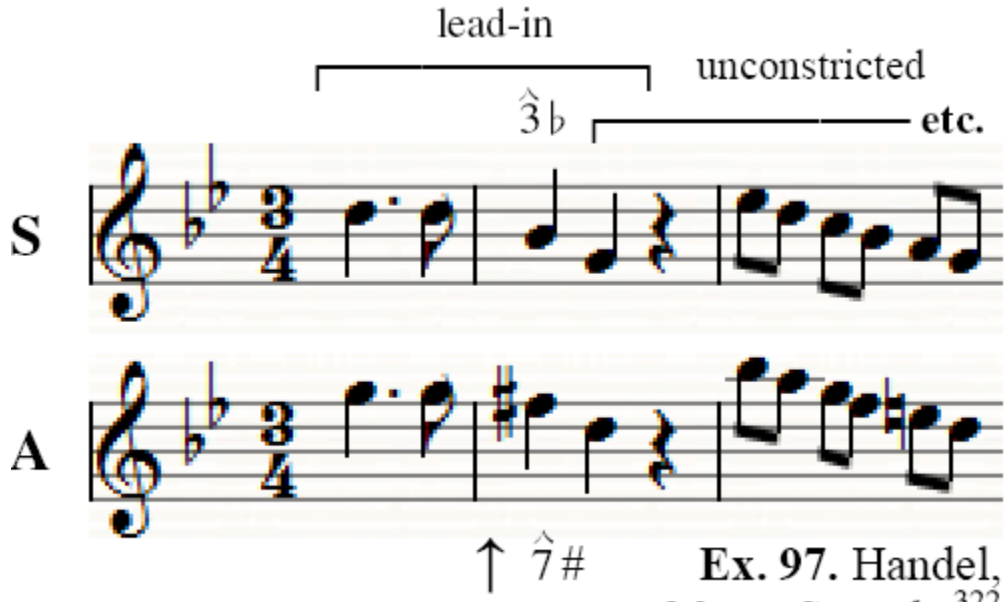
Ex. 95 has been a noted source of confusion,[321] perhaps due partly to its unusually long lead-in. This does, nonetheless,



Ex. 95. Charles Gounod, quoted in Gédalge, *Traité.*



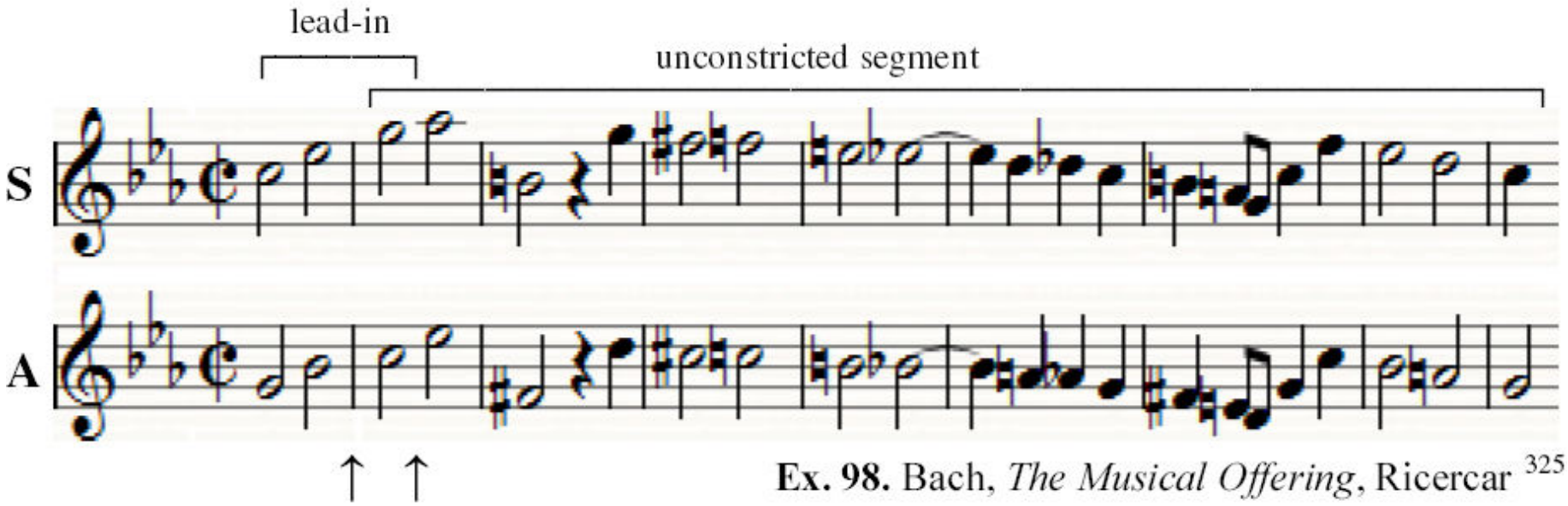
Ex. 96. Bach, C major fugue, WTC Book II.[320] (Answer continues "real" to the end; there is no further modulation.)



Ex. 97. Handel, *Muzio Scevola*.[322]

qualify as a lead-in (p. 46), so its answer is entirely normal. The same goes for the unconstricted part, which is "all-dominant" (p. 99).

All the techniques previously cited as possible and normal for unconstricted subjects as *complete* subjects (pp. 98-121), are also possible and normal for unconstricted phrases appearing as *part* of combination subjects. There is no essential difference. This includes the "freedoms" regarding the last note in minor (the mutual answering of 7̂# with 3̂♮, the non-perfect interval. The perfect one is also of course possible, whether to pair up 7̂#↔3̂# or 7̂♮↔3̂♮.[323]) Excepting this last note, the methods and "freedoms" unique to key-retaining answers are normally met with only in the lead-in—because that is the tonic-retaining "territory." So here, one meets with techniques discussed on pp. 37-81, such as: imperfect subject-answer intervals, including the "subject-answer pairs" of 4̂♮ and 7̂# (Ex. 96); or 3̂♮ and 7̂# (Ex. 97); or even the direct melodic succession 7̂♮-8̂ in the answer (Ex. 98, at first barline.[324]) As



Ex. 98. Bach, *The Musical Offering*, Ricercar [325]

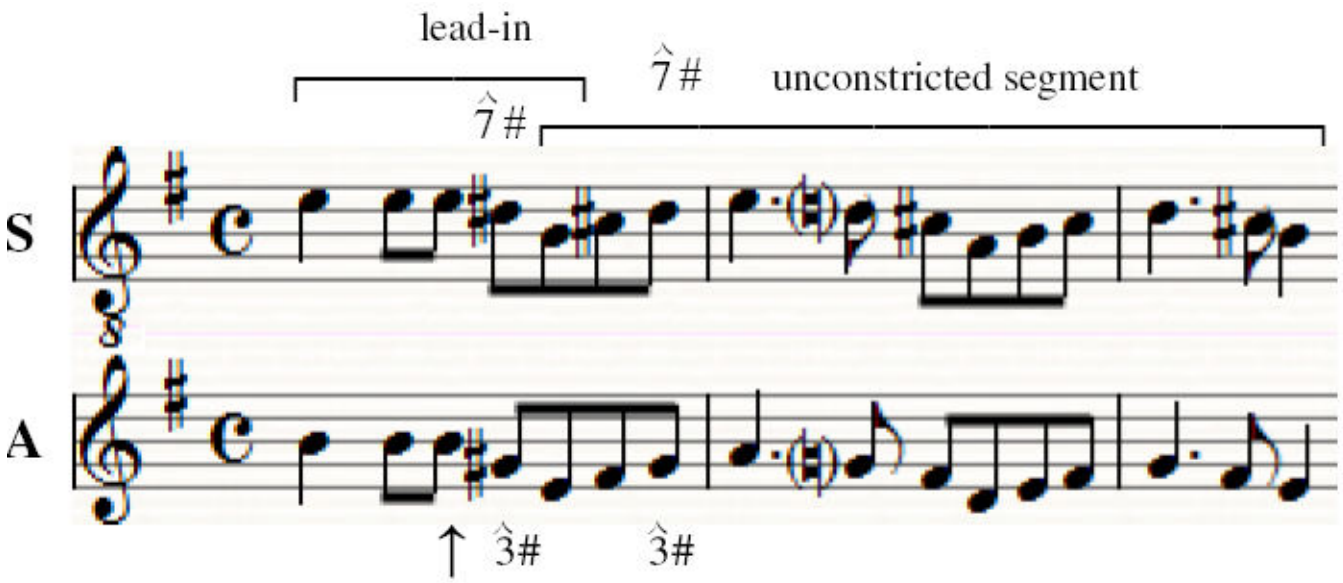
we also see again, lead-ins are not tied to ASAP mutation (see p. 68).

Finally, the technique of pairing $\hat{7}$# with $\hat{3}$# is possible anywhere in the theme, because it is valid in both kinds of "territory"—key-retaining and key-changing (pp. 37-8 and 112-117). Accordingly Ex. 99 illustrates the colorful, if unusual case of such pairing occurring twice in the same theme.

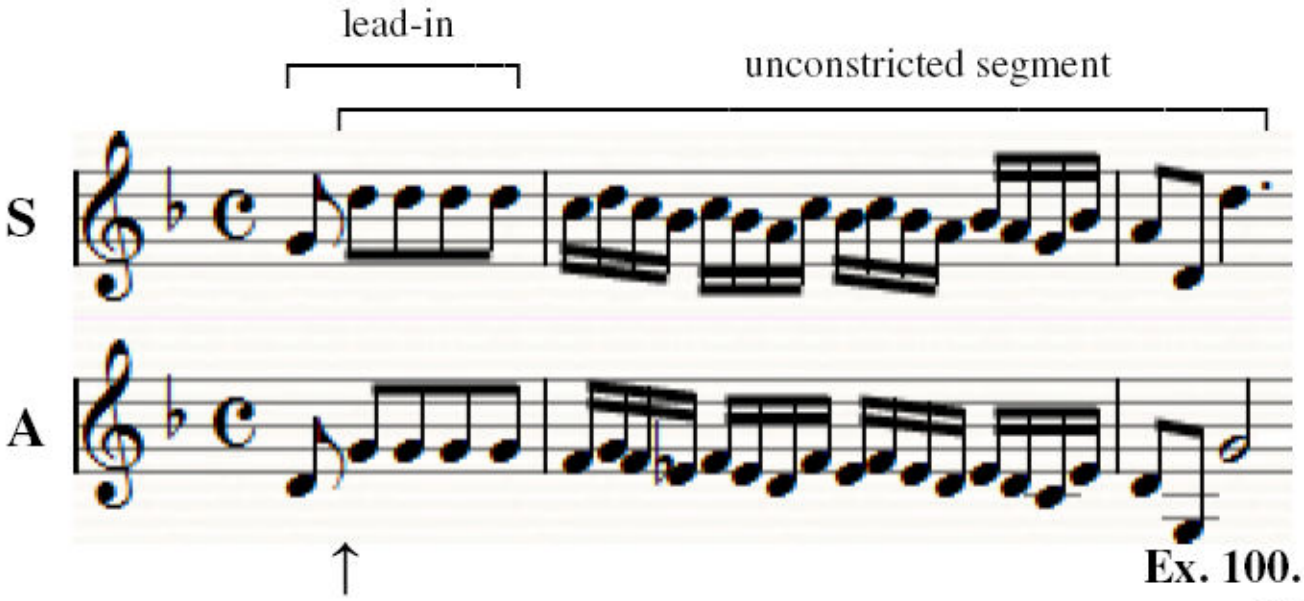
Ex. 100 shows a case of "exception" 2B on p. 101. That clause plausibly accounts for why Buxtehude[326] dispensed with treating $\hat{4}$♮ as key-signifying for the tonic, and instead based its key assignment on the outer notes of the unconstricted segment, both $\hat{5}$, which *are* "signifiers." Most of the subject is an elaboration of D-C-B♭-A, interpretable as D minor in accord with the signifiers.[327]

When we studied tonic-retaining answers, we examined a technique called "multiple lead-ins" (pp. 82-85, 93). These reappear in classical fugue. Since even one lead-in helps support tonic tonality at the outset, this can be all the more true of more than one. Ex. 101 illustrates.

Ex. 103 is in a sense opposite: Bach dispenses with the tonal answer outright. This is nothing outré—all tonal answers are optional—but the case has sparked debate (and a "correction"[328]) because for Bach it seems uncharacteristic.[329] Ex. 104 has certain similarities to this last. A possible explanation for both real answers—not previously suggested to my knowledge—might be a wish to preserve the overall octave ambit. Both octaves would become sevenths under the most likely tonal answers.[330] It is easy to forget that composers have long been cognizant of the aesthetic possibilities of that "other,"



Ex. 99. S[amuel?] Porter, quoted in Marchant.[333]



Ex. 100.

Buxtehude, Praeludium in G minor BuxWV 163, 2nd fugue.[332]

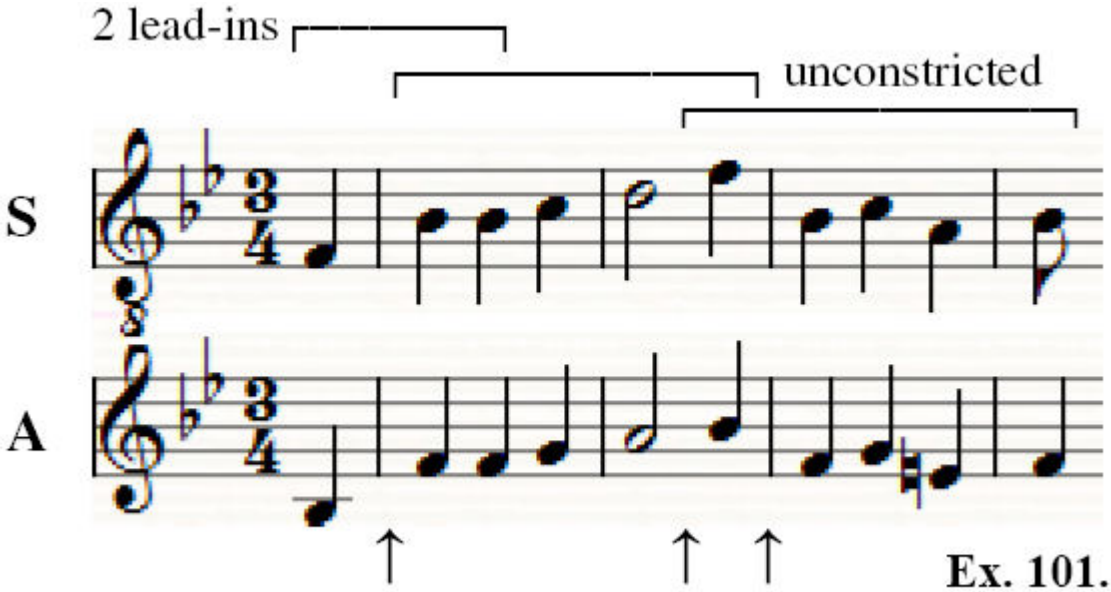
larger perfect interval.[331] Fugue writers can not seldom be observed "bending the norms" in ways that preserve this range. Two other ways can be mentioned: by using a "double lead-in" (in Ex. 101, this keeps the octave from becoming a ninth); or, delaying mutations (Ex. 102's "late" third mutation could have occurred at the previous barline, but the ambit

would have become a seventh).

Fugal answer is not a “cookie-cutter” process: composers consider various levels of design and shift course as circumstances require.[336] (Even octave preservation may yield to other considerations, such as stepwise motion.)

Let us examine another technique that may be considered a variant , or logical extension, of the basic idea of a combination theme. It was discussed in the context of key-retaining answers; it reappears in classical fugue. In the earlier discussion, we looked at four subject-answer “formulae” prescribed by some theorists (p. 86), all permutations of one basic pattern. It was argued that these constituted, in effect, a new kind of lead-in—the lead-in by substituted third—apparently employed, like the ordinary lead-in, to stress tonic tonality early in the answer. In classical fugue, lead-ins by substituted thirds preserve this role: supporting the tonic key within the combination theme. Thus, whereas an ordinary combination subject in F major might open with the descent F-C, a subject with a lead-in by substituted third might proceed similarly, except opening with F-*E*, substituting $\hat{5}$ with its third. Ex. 105 illustrates.

As regards the answer, our usual method—“separate the parts”—still works. Examining the lead-in separately, one can predict $\hat{8}$ -$\hat{7}$ will be answered by $\hat{5}$ -$\hat{3}$, assuming the composer wants to preserve the tonic key briefly. As for the unconstricted segment, it moves from $\hat{7}$ to $\hat{8}$, a dominant-tonic “modulation” which the answer reverses by proceeding from $\hat{3}$ to $\hat{5}$. Although the precise, best location for the mutation could be discussed, the basic form of the answer is



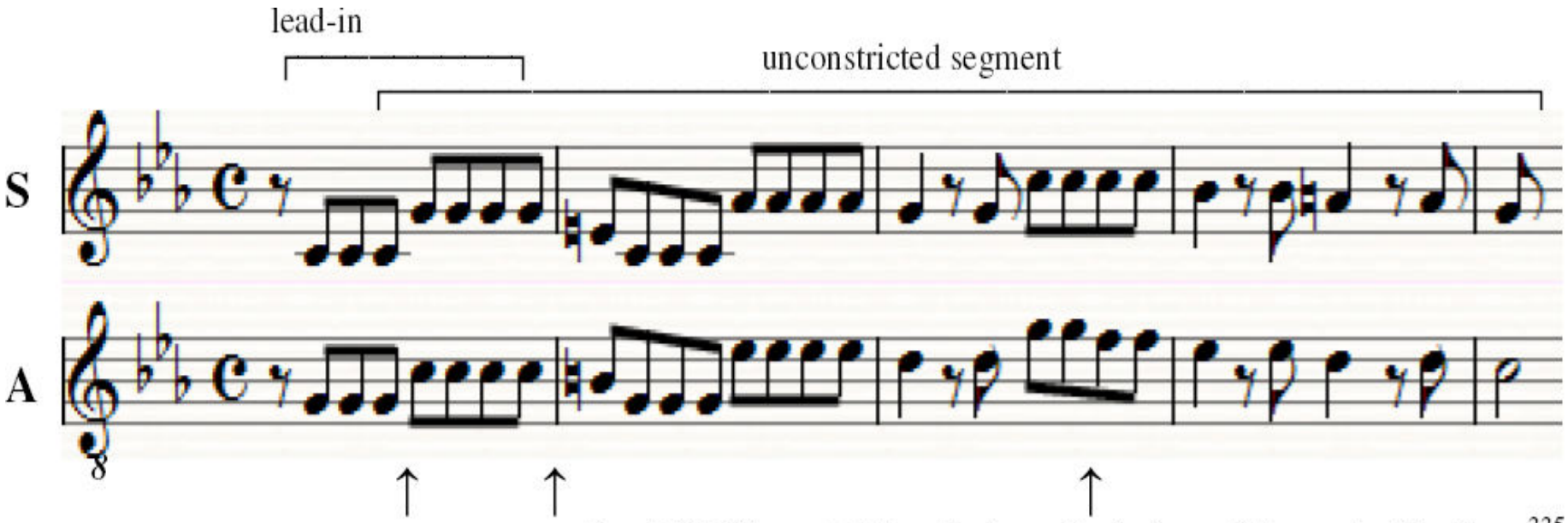
Ex. 101.
Elizabeth Stirling, Fugue No. 1 of *Six Fugues*.[334]

no surprise; it is fundamentally no different from other combination themes.

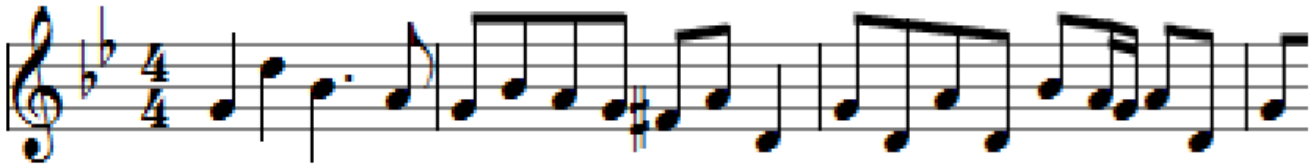
A more famous and contentious[340] case is Ex. 106. This shows the same overall tonal structure: the lead-in proceeds from $\hat{8}$ to $\hat{7}$; the unconstricted part, from $\hat{7}$ to (ultimately) $\hat{8}$. Hence the procedure is essentially the same, except Bach manages to put the second mutation at a "Walther-Banister-compliant" locus, which Charpentier could not have.

Exx. 107 through 109 represent the other three configurations of Table 9 as used in "classical" combination themes. By analyzing all five examples, 105 to 109, as combination subjects with "lead-ins by substituted third," then, we can not only help resolve the debate over Ex. 106, but also make sense of a whole, very large class of themes to which it belongs.

One trait distinguishing "substituted-third lead-ins" from their



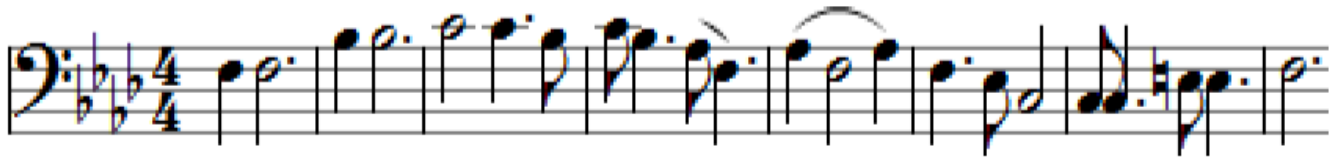
Ex. 102. Vincent Lübeck, from Prelude and Fugue in C minor.[335]

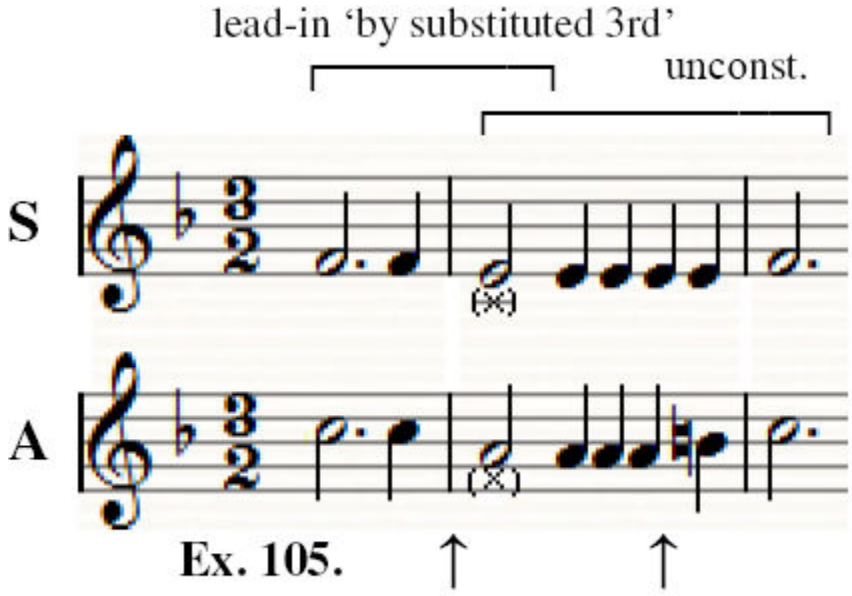


etc.

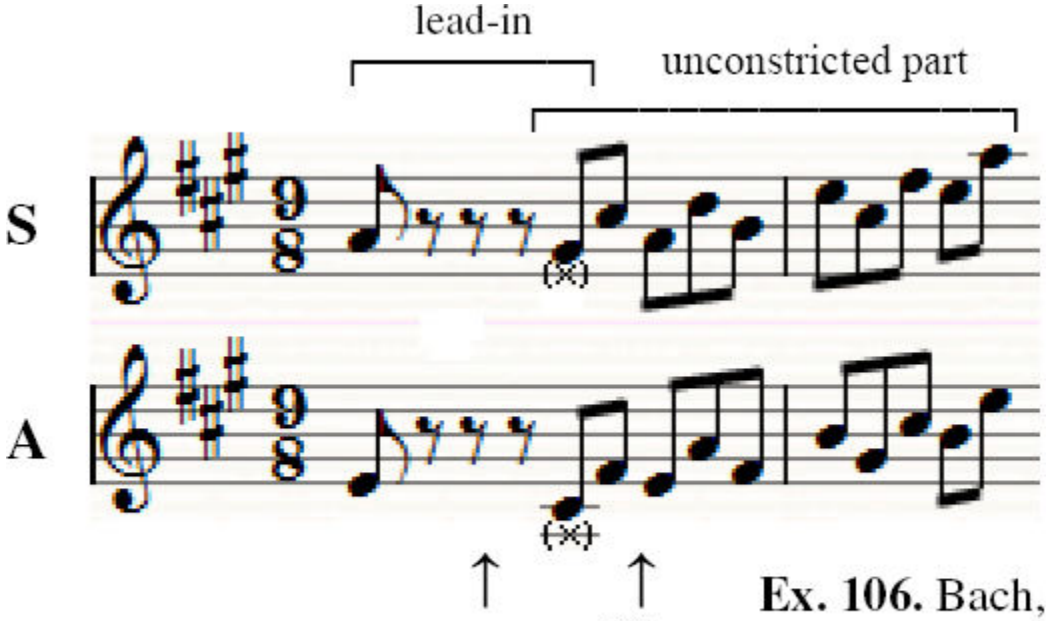
Ex. 103. Bach, subject of Fugue in G minor, BWV 578.[337] The answer was real at the dominant.

Ex. 104. Robert Nathaniel Dett, *The Ordering of Moses* cantata.[338] The answer was real at the dominant.

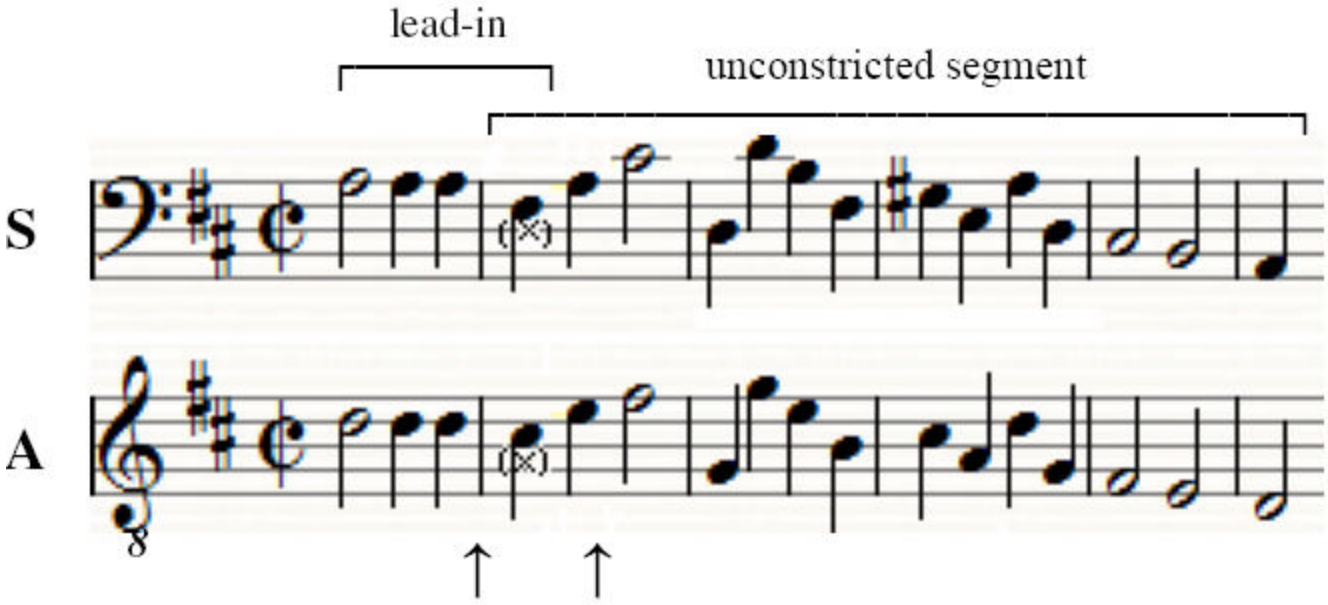




Ex. 105. **M.-A. Charpentier,** *Dixit Dominus*, H202.[339]



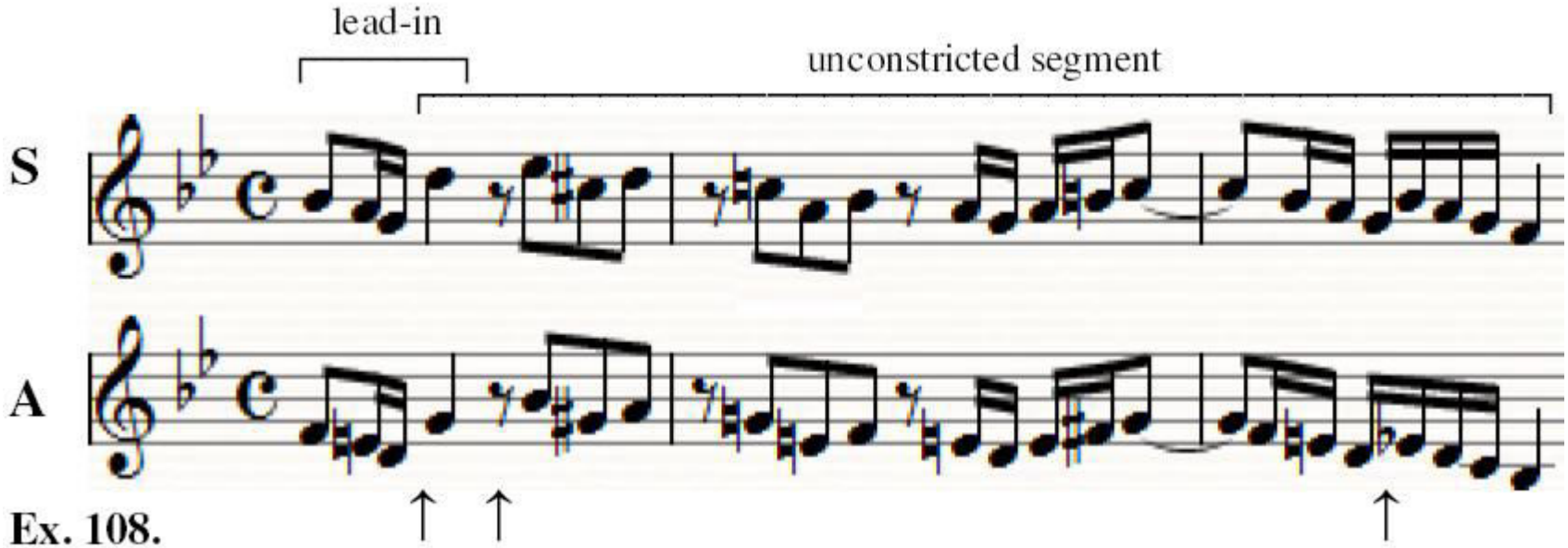
Ex. 106. Bach, A major fugue, WTC Book I.[341] (Note, the sequence is not 'disfigured,' not being exact to begin with.)



Ex. 107. "Patrem omnipotentem" from Bach's Mass in B Minor.[342]

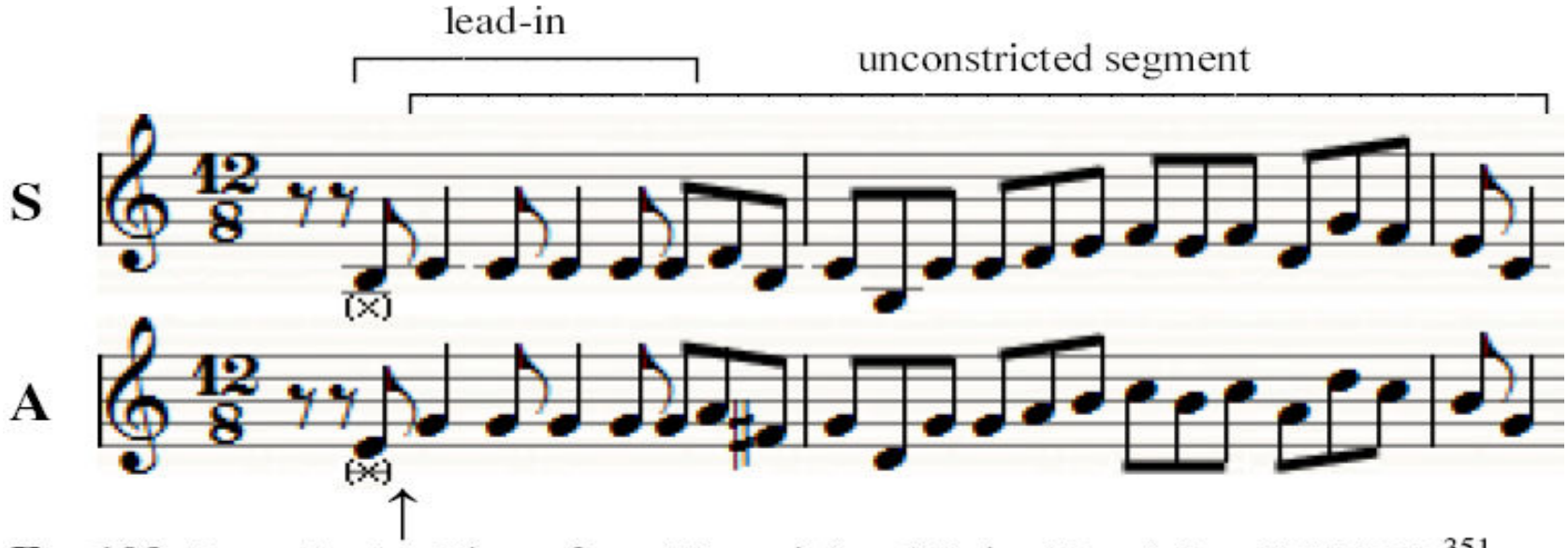
more traditional cousins containing $\hat{1}$ and $\hat{5}$, is that in the former case, composers have a greater tendency to reject the tonal-answer option altogether. This depends a good deal on melodic considerations, and the ease of effecting a "return" mutation (if wanted)—all potentially tricky factors with "substituted-third" openings.[343] A tonal answer is usual if the lead-in is shaped basically as in Exx. 108 or 59, which is easily tonally answered;[344] or if no second change is needed, in which case the process becomes indistinguishable from "modulating subject" technique, as in the Kyrie fugue of Mozart's Requiem.[345]

The last two techniques discussed — multiple, and substituted - third lead-ins—can be combined, so multiple lead-ins can include lead-ins by substituted third. We saw this in the context of key-retaining answers (p. 93). Ex. 111 is a version embedded in a "classical"(-type) answer. Incidentally, although Prout composed this answer, and it is fairly normal,[346] his own



Ex. 108.

Ambroise Thomas, quoted in Gédalge.[350] Note: the $\hat{4}$# is a chromatic note.



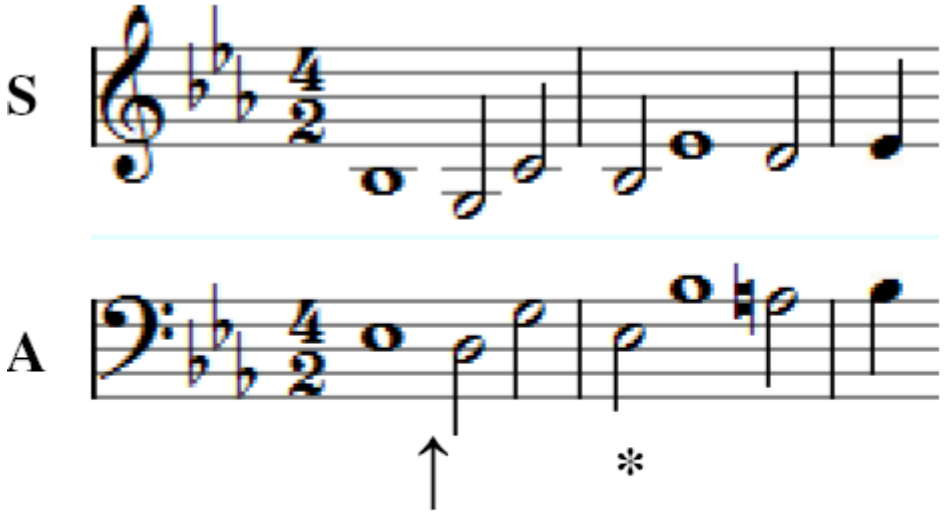
Ex. 109. Buxtehude, Gigue from Harpsichord Suite No. 4, BuxWV 230.[351]

theory fails to explain it. Under his theory, the answer's third note would be C;[347] its last note, F; and the subject and answer would use different keys, which they do not until the third measure. The problem is not that Prout "broke his own rules"; there is nothing malign in that. The issue is that his treatise cites this answer to *illustrate* his theory. It must have confused students—the more so, the more attentive they were.

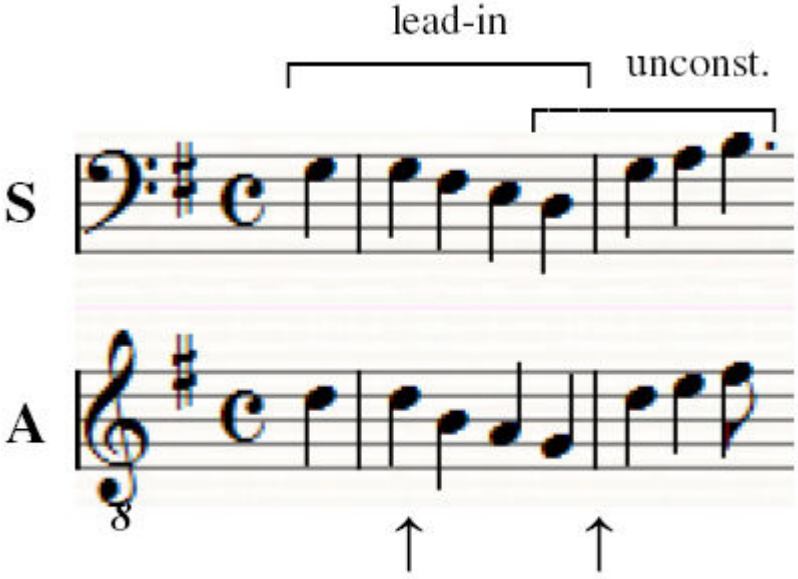
Therefore, a new theory is not unneeded.[348] In fairness, Prout, it must be noted, was working at a disadvantage to today's scholar. For one thing, his source materials appear to have included at least nine fugues misattributed to Bach, something not known at the time (and not a trivial problem considering some of their answers).[349] Prout's contributions, including his early recognition of Bach's crucial importance in fugal studies, far outweigh his missteps.

It is hopefully evident that the techniques discussed in the last two pages are logical outgrowths of the basic "combination theme" framework, not really exceptions to it.

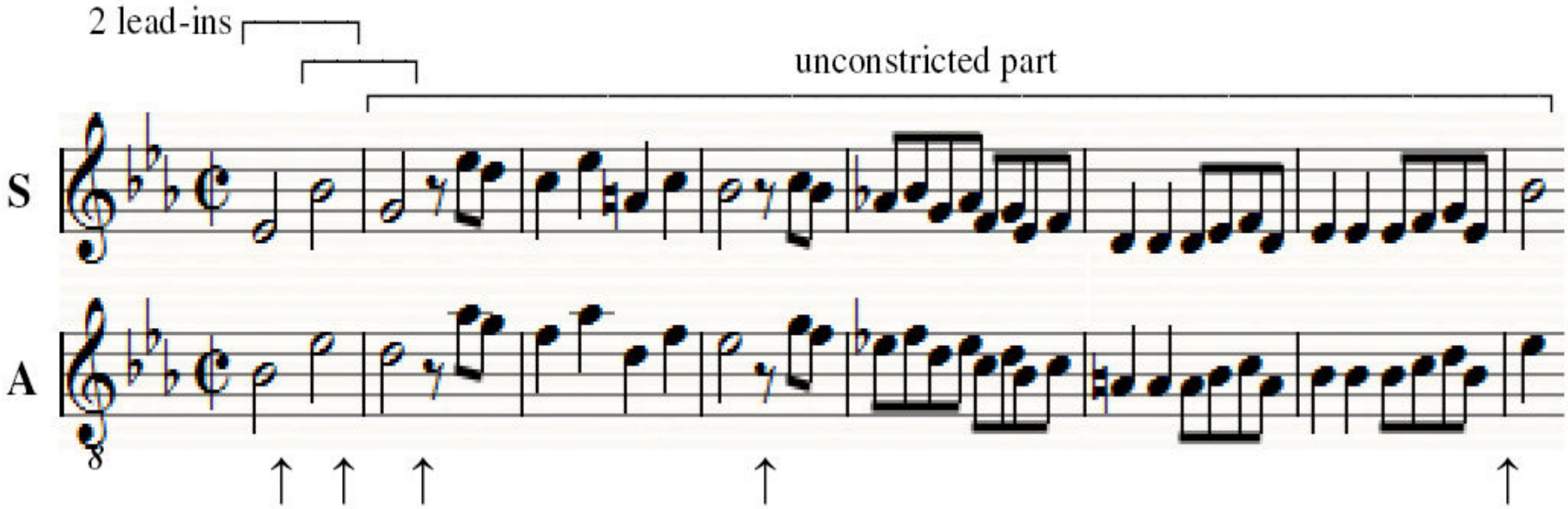
Naturally, true exceptions occur as well. For example, composers sometimes give answers that, while normal overall, substitute tonic-triad notes where others would be expected. See the starred note in Ex. 110. Interestingly, several composers have used subjects very similar to this,[354] and Bach appears to be alone in answering it this way, showing, as if further evidence were needed, that no "ideal rule" exists capable of predicting every answer.[355] Usually when a composer does something differently, there is a reason—sometimes, a specific desired harmonization—but ultimately a reason is not even necessary; a wish to surprise may be reason enough. Nonetheless, as has been seen, some inform-



Ex. 110. Bach, Fugue in E flat "St. Anne's," BWV 552. The starred note would more typically be F.[352]



Ex. 112. Elizabeth Stirling, Fugue no. 5 of *Six Fugues* ("Old Hundredth")[356]



111. Prout, 2nd Organ Concerto[353]

ative generalizations are possible.

We should not end without touching on one of the more singular aspects of fugal answer. Very often, two or three *different* procedures yield identical answers to identical subjects. Ex. 112 may be viewed as a combination theme with either one, or two lead-ins. Here, both perspectives would and do logically lead to the same result. Moreover, its answer is both a key-retaining, and a "classical" answer. In this case it makes no difference. Meanwhile, Ex. 89 is the kind of combination theme with a lead-in by substituted third; however it can be equally well be seen as an unconstricted theme with an "accidental-avoiding tonal answer" (the "reversion" to key-retention theory). The outcome is the same. Ex. 86 is both those things; yet it is also—thirdly—a modulating, unconstricted subject (the analysis we adopted). Examples are ubiquitous. This generally make it easier, rather than harder, to predict the composer's answer, because it reduces the number of logical paths to alternative answers.

Conclusions

It seems peculiar that some three centuries after fugue's "golden age," with all that has been written about it, we should still have found ourselves laboriously reconstructing the answer procedure. It would appear that a series of misunderstandings has led to this juncture. Nonetheless some perceptive twentieth-century theorists made progress on this issue, in part by hinting at a reconciliation of the "key-retention" theory of the answer, widespread in the early eighteenth century, and the "key-change" doctrine, prevalent in the late nineteenth and early twentieth. What has remained is to build on this progress to create a systematic and workable overall

theory. The present study hopefully provides this, or at least a step on the way. It has confronted the most controversial subtopics in this area, and some of the most debated individual answers (which I suspect include Exx. 86, 89, 94, 103 and 106; perhaps Exx. 71 and 100 as well.[357])

The prevailing "classical" answer method need no longer be seen as an obscure, much less an erratic,[358] procedure. Rather it was an artistically and logically well-reasoned methodology, and a mostly consistent one. Its logic was not always unassailable; it reflected idiosyncrasies of its times. Nonetheless the system could suggest an artistically viable answer for almost any melody in tonal music, not least because the system had ways of pinpointing its own limits: this way passages better served by a hands-off approach, usually would be.

Let us recapitulate the theory in one paragraph. (1) The answer generally imitates the subject at the fifth or fourth; historical and practical reasons for this convention are relatively well known. (2) In "classical" fugue, the idea that tonic and dominant key-areas answer each other, mostly sums up the procedure well, with one very salient exception, as follows. (3) Many subjects begin with a distinctive type of compass-limited phrase in the tonic key. This part of the subject, by an older custom, is answered in its own key—not in the dominant—and exhibits a characteristic exchange, not of keys but of fundamental-interval *compasses*. Further, this type of opening can manifest itself in variant forms that could easily confuse the novice observer, but can be recognized and understood. Their purpose remains the same, to support tonic tonality at the outset.

The rest is just detail; not to say the detail is unimportant, only

to point out that the theory is not too complex to summarize briefly.

Bibliography

Note: because some sources were used only tangentially, these are cited only in the endnotes.

Scores

Albrechtsberger, Johann Georg. *Douze Fugues Pour le Clavecin ou L'Orgue,* [Op. 1]. Berlin and Amsterdam: J. J. Hummel, n.d. [late 18th or early 19th c.]. imslp.org.

Bach, Johann Sebastian. *Das Wohltemperierte Klavier, Erster Theil.* Edited by Franz Kroll. Leipzig: C.F. Peters, n.d.

Bach, Johann Sebastian. *Das Wohltemperierte Klavier, Zweiter Theil.* Edited by Hermann Keller. Leipzig: C.F. Peters, n.d. imslp.org.

Bach, Johann Sebastian. *Orgelwerke - Organ Works*, vol. 2. Edited by Hans Klotz. Kassel, Basel, Tours, London: Bärenreiter, n.d. imslp.org.

Bach, Johann Sebastian. *Fantasien, Präludien und Fugen.* Edited by Georg von Dadelsen and Klaus Rönnau. Munich: G. Henle, 2009. imslp.org.

Bach, Johann Sebastian. *Bach-Gesellschaft Ausgabe.* 46 vols. Leipzig: Breitkopf und Härtel, 1851-99. archive.org.

Bach, Johann Sebastian. *Musikalisches Opfer*, 1st ed. (reprint). Leipzig: Peters, 1977. imslp.org.

Bach, Johann Sebastian. *Die Kunst der Fuge* (The Art of Fugue). Edited by Carl Czerny. Leipzig: C.F. Peters, n.d. imslp.org

Bach, Johann Sebastian. *Neue Bach-Ausgabe, Serie II. Messen, Passionen, Oratorische Werke.* Vol. 1, *Messe h-Moll.* Edited by Friedrich Smend. Kassel: Bärenreiter, 1954. imslp.org.

Beethoven, Ludwig van. *Beethovens Werke, Serie 1: Symphonien, No. 3.* Leipzig: Breitkopf und Härtel, n.d.[1862].
Böhm, Georg. *Sämtliche Werke*, vol. 1. Edited by Johannes and Gesa Wolgast. Wiesbaden: Breitkopf & Härtel, n.d. [1952]. imslp.org.
Bruhns, Nicolaus. *Orgelwerke*. Edited by Fritz Stein. Leipzig: Peters, 1939. imslp.org.
Buxtehude, Dieterich. *The Collected Works.* vol. 15. Edited by Kerala J. Snyder, Christoph Wolff and Michael Belotti. New York: The Broude Trust, 1998.
Buxtehude, Dietrich. *Sämtliche Orgelwerke*. 4 vols. Edited by Josef Hedar. Copenhagen: Wilhelm Hansen Musik-Forlag, n.d. imslp.org.
Buxtehude, Dietrich. *Complete Suites and Variations for Piano/Harpsichord.* Edited by Klaus Beckmann. Wiesbaden: Breitkopf & Härtel, 1974. imslp.org.
Charpentier, Marc-Antoine. *Dixit Dominus, H. 202*. Edited by Peter Young. Canberra Baroque, 2016. imslp.org.
Chaumont, Lambert. *Pièces d'Orgue sur les 8 Tons. Avec Leurs Varieté Leurs Agreemens Leurs Mouvemens et le Melange des Jeux Propres a Chaque Espece de Verset (1695)*. Edited by Pierre Gouin. Montréal: Les Éditions Outremontaises, 2008. imslp.org.
Corrette, Michel. *Premier Livre d'Orgue, Oeuvre XVI, Paris, 1737*. Edited by Pierre Gouin. Montréal: Les Éditions Outremontaises, 2010. imslp.org.
Dandrieu, Jean-François. *Premier Livre de Pièces d'Orgue. Archives des Maîtres de l'orgue,* Vol. 7. Edited by Alexandre Guilmant. Paris: A. Durand & Fils, 1906. imslp.org.
deGrigny, Nicolas, *Premier Livre d'Orgue*. Edited by P. Gouin. Les Editions Outremontaises, 2009 and 2012. imslp.org.
Dett, Robert Nathaniel. "The Ordering of Moses." Autograph manuscript. 1932. imslp.org.

DuMage, Pierre. *Premier Livre d'Orgue, Contenant une Suite du Premier Ton, Paris, 1708.* Edited by Pierre Gouin. Montréal: Les Editions Outremontaises, 2008. imslp.org.
Eberlin, Johann Ernest. *115 Versetten und Cadenzen für die Orgel.* München: the author, Falter u. Sohn, n.d. imslp.org.
Fischer, Johann Kaspar Ferdinand. *Sämtliche Werke für Klavier und Orgel.* Edited by Ernst V. Werra. Leipzig, Brussels, London and New York: Breitkopf & Härtel, n.d. [1901]. imslp.org.
Handel, Georg Friedrich. *Georg Friedrich Händel's Werke.* 103 vols. Leipzig: Ausgabe der Deutschen Handelsgesellschaft, 1858-1902. imslp.org.
Handel, Georg Friedrich. *Six Fugues Pour le Clavecin ou L'Orgue* [Op. 3]. Paris: Chez Md. Boivin, Mr. le Clerc, n.d. [1738]. imslp.org.
Haydn, Michael. *50 Kleine Orgelstücke zu Nützlichen Übung für Angehende Orgelspieler, Bestehend aus Præludien, Versetten und Cadenzen*. Edited by Pierre Gouin. Montréal: Les Editions Outremontaises, 2019. imslp.org.
Jacquet de la Guerre, Élisabeth. *Sonates Pour le Viollon et Pour le Clavecin.* Paris: Chez l'Auteur, Foucault, P. Ribou et C. Ballard, 1707. imslp.org.
Jullien, Gilles. *Premier Livre d'Orgue.* Edited by Norbert Dufourcq. Paris: Heugel et Cie., 1952. imslp.org.
Krieger, Johann & Johann Philipp. *Complete Organ & Keyboard Works,* vols. 1 and 2. Edited by Siegbert Rampe & Helene Larch. Kassel, New York: Bärenreiter, 1999.
Lebègue, Nicolas. *Oeuvres Complets d'Orgue.* Edited by Alexandre Guilmant. Mainz und Leipzig: B. Schott's Söhne, n.d. [1914]
Lübeck, Vincent. *Orgelwerke.* Edited by Hermann Keller. Leipzig: Peters, n.d. [1941].
Mattheson, Johann. *Les Doits Parlans: en Douze Fugues*

Doubles à Deux et Trois Sujets Pour le Clavessin. 2e Edition Nuremberg (1749). Edited by P. Gouin. Les Editions Outremontaises, 2018. imslp.org.
Mozart, Wolfgang Amadeus. *Quartet in G major for 2 Violins, Viola and Violoncello, K387.* Edited by Rudolf Gerber. London: Eulenburg, n.d. (ca.1930).
Muffat, Gottlieb. *The 32 Ricercares and 19 Canzonas.* 3 vols. Edited by Erich Benedikt. Vienna: Doblinger, 2003.
Muffat, Gottlieb. *Denkmäler der Tonkunst in Österreich*. Vol. 58, *Zwölf Toccaten und 72 Versetl.* Edited by Guido Adler. Graz: Akademische Druck- U. Verlagsanstalt, 1960. imslp.org.
Muffat, Gottlieb. *Missa in F et C.* Edited by Rudolf Walter. Vienna: Doblinger, 1980. imslp.org.
Pachelbel, Johann. *Denkmäler Deutscher Tonkunst, Zweite Folge: Denkmäler der Tonkunst in Bayern,* 4th year, part 1, *Orgelkompositionen von Johann Pachelbel.* Edited by Max Seiffert. Leipzig: Breitkopf und Härtel, 1903. imslp.org.
Pachelbel, Johann. *Denkmäler Der Tonkunst Österreich,* 8th year, vol. 2, *Johann Pachelbel Magnificat-Fugen.* Edited by Guideo Adler. Leipzig: Breitkopf und Härtel, 1903. imslp.org.
Purcell, Henry. *Ten Sonatas of Four Parts.* New York: Lea Pocket Scores, 1968. imslp.org.
Purcell, Henry. *Twelve Sonatas of Three Parts.* New York: Lea Pocket Scores, 1968. imslp.org.
Purcell, Henry. *Works for Harpsichord and Organ.* Edited by Edward John Hopkins and William Barclay Squire. London: Novello, Ewer & Co., 1895. imslp.org.
Raison, André. *Second Livre d'Orgue (1714).* Edited by P. Gouin. Les Editions Outremontaises, 2012. imslp.org.
Reincken, Johann Adam. *Hortus Musicus.* Edited by Johann Cornelis Marius van Riemsdijk. Amsterdam: Den

Algemeenen Muziekhandel, n.d.[1886]. imslp.org.
Reincken, Johann Adam. *Sämtliche Orgelwerke.* Edited by Klaus Beckmann. Wiesbaden: Breitkopf und Härtel, 1974. imslp.org.
Schumann, Clara. *Three preludes and fugues, for solo piano, op. 16.* Boca Raton, Fla.: Masters Music Publications, n.d. [1996?]
Stirling, Elizabeth. *Six Fugues for Organ on English Psalm-Tunes.* Edited by Barbara Harbach. Pullman, WA: Vivace, 1995
Telemann, Georg Philipp. *Orgelwerke.* Edited by Gyula Pfeiffer. Petrucci Music Library, n.d. imslp.org.
Walther, Johann Gottfried. *Denkmäler Deutscher Tonkunst, Erste Folge*, vols. 26-27. Edited by Max Seiffert. Leipzig: Breitkopf und Härtel, 1906. imslp.org.
Royal Library Albert I Brussels Music Dept. - Manuscript II 3326 (the So-Called "Cocquiel Manuscript," 1741.) Vol. 3. Edited by Patrick Roose. n.d. (2011). https://ks4.imslp.net/files/imglnks/usimg/f/ff/IMSLP166907-WIMA.9444-COCQUIEL,342-364b.pdf
Zur Geschichte des Orgelspiels im 14. bis 18. Jahrhundert, vol. 2. Edited by A. G. Ritter. Leipzig: Max Hesse's Verlag, 1884.

Texts other than scores

Albrechtsberger, Johann Georg. *Collected Writings on Thorough-Bass, Harmony and Composition for Self-Instruction*. Vol. 1. Translated by Sabilla Novello. London: Novello, Ewer & Co., 1855. imslp.org.
Albrechtsberger, Johann Georg. *Gründliche Anweisung zur Composition*. Leipzig: Johann Gottlob Immanuel Breitkopf, 1790.
Aldwell, Edward, and Carl Schacter. *Harmony and Voice Leading,* 2nd ed. Fort Worth, Fla.: Harcourt Brace

Jovanovich, 1989.
André, Johann A., *Lehrbuch der Tonsetzkunst*, vol. 2, part 2, *Lehre der Fuge.* Offenbach am Main: Johann André, 1843. imslp.org.
Bach, Carl Philipp Emanuel. *The Letters of C. P. E. Bach*. Translated and edited by Stephen L. Clark. Oxford University Press, 1997.
Bairstow, Edward C. *Counterpoint and Harmony.* London: MacMillan, 1937. archive.org.
Banister, Henry C. *Music.* 8th ed. Cambridge: Deighton, Bell, 1880. books.google.com.
Bent, Margaret. "The Grammar of Early Music: Preconditions for Analysis." In *Tonal Structures in Early Music*, edited by Cristle Collins Judd, 15-60. New York: Garland, 2000.
Brossard, Sébastien de. *Dictionnaire de Musique.* Paris: Christophe Ballard, 1703. imslp.org.
Bruhn, Siglind. *J.S. Bach's Well-tempered Clavier: In-depth Analysis and Interpretation,* 2nd ed. Waldkirch: Gorz, 2014.
Bullivant, Roger. *Fugue.* London: Hutchinson, 1971.
Burton, Deborah. "Guida e Conseguente: Padre Martini and Francesco Galeazzi on Fugue." Paper presented at the New England Conference of Music Theorists Twentieth Annual Meeting, Amherst, Mass., April 2005. https://www.academia.edu.
Cherubini, Luigi. *Cours de Contrepoint et de Fugue*, 2nd ed. Paris: Heugel, n.d.[1863]. imslp.org.
Cherubini, Luigi. *A Treatise on Counterpoint and Fugue.* Translated by Mary Cowden Clarke. London & New York: Novello, 1881. imslp.org.
Choron, Alexandre. *Principes de Composition des Ecoles d'Italie.* Vol. 4. Paris: Auguste Le Duc & Comp., n.d. [1808]. imslp.org.
Colet, Hippolyte R. *La Panharmonie Musicale.* Paris: Pacini,

1837. books.google.com.
Denis, Jean. *Traité de l'Accord de l'Espinette.* Paris: Robert Ballard, 1650. archive.org.
Dickinson, A.E.F. *Bach's Fugal Works.* Westport, Conn.: Greenwood Press, 1979. [reprint of 1956 ed.]
Elwart, Antoine. *Le contrepoint et la Fugue Appliqués à la Composition Idéale*. 2nd ed. Paris: Joly, 1844. books.google.com.
Fétis, François-Joseph. *Traité du Contre-point & de la Fugue*. Paris: Charles Michel Ozu (au magazin de Musique du Conservatoire), [1824]. books.google.com.
Gédalge, André. *Traité de la Fugue.* Paris: Enoch, n.d. [1901]. imslp.org.
Gédalge, André. *Treatise on the Fugue.* Translated by Ferdinand Davis. University of Oklahoma Press, 1965.
Green, Joseph. "The Tonal Fugue." *The Musical Times* 18, No. 414 (Aug. 1, 1877): 371-374. https://www.jstor.org/stable/3354490.
Higgs, James. *Fugue.* London: Novello, 1878. imslp.org.
Horsley, Imogene. *Fugue: History and Practice*. London: Collier-MacMillan, 1966.
Kitson, Charles. *The Elements of Fugal Construction*. Westport, Conn.: Greenwood Press, 1981 [reprint of 1929 ed.]
Jones, Richard D. P. *The Creative Development of Johann Sebastian Bach*. Vol. 1, 1695-1717. Oxford University Press, 2007. books.google.com.
Judd, Cristle Collins. "Renaissance Modal Theory: Theoretical, Compositional, and Editorial Perspectives." In *The Cambridge History of Western Music Theory*, edited by Thomas Christensen, 364-406. Cambridge: Cambridge University Press, 2002.
Langlé, Honoré François Marie. *Traité de la Fugue.* Paris:

Chez l'Auteur, au Conservatoire de Musique, n.d. [1805]. books.google.com.
Ledbetter, David. *Bach's Well-tempered Clavier: The 48 Preludes and Fugues*. New Haven: Yale University Press, 2002.
Lester, Joel. *Between Modes and Keys: German Theory, 1592-1802.* Stuyvesant, N.Y.: Pendragon, 1989. books.google.com.
Lester, Joel. *Compositional Theory in the Eighteenth Century.* Cambridge, Mass.: Harvard University, 1992.
Lester, Joel. *Bach's Works for Solo Violin.* Oxford University, 1999. books.google.com.
MacPherson, Stewart. *Studies in the Art of Counterpoint.* London: Joseph Williams Ltd., n.d. [1927]. Archive.org.
Mann, Alfred. *The Study of Fugue.* New York: Dover Publications, 1986. archive.org.
Marchant, Arthur W. *Five Hundred Fugue Subjects and Answers, Ancient and Modern,* 2nd ed. London: Novello and Co., 1892. books.google.com.
Marpurg, Friedrich Wilhelm. *Abhandlung von der Fuge.* Berlin: A. Haude, J. C. Spener, 1753. https://imslp.org/wiki/Abhandlung_von_der_Fuge_(Marpurg%2C_Friedrich_Wilhelm.
Marpurg, Friedrich Wilhelm. *Traité de la Fugue et du Contrepoint par Marpourg.* Paris: Naderman, 1801.
Martini, Giambattista. *Esemplare, o sia Saggio Fondamentale Pratico di Contrappunto*. Vol. 2. Bologna: Lelio Dalla Volpe, 1776. imslp.org.
Masson, Charles. *Nouveau Traité des Règles Pour la Composition de la Musique.* 2nd ed. Paris: Christoph Ballard, 1699. books.google.com.
Mattheson, Johann. *Der Vollkommene Capellmeister.* Hamburg: Christian Herold, 1739. imslp.org.

Mattheson, Johann. *Johann Mattheson's Der Vollkommene Capellmeister: a translation and commentary by Ernest Charles Harriss.* Translated by Ernest Charles Harriss. [Nashville, Tenn.] 1969. Microfilm, New York Public Library.
Morris, R. O. *The Structure of Music.* London: Oxford University Press, 1935. archive.org.
Nalden, Charles. *Fugal Answer.* Auckland: Auckland University Press, 1970.
Oldroyd, George. *The Technique and Spirit of Fugue.* London: Oxford University Press, 1948.
Paolucci, Giuseppe. *Arte Pratica di Contrappunto.* Vol. 2. Venice: Antonio de Castro, 1766. books.google.com.
Pedneault-Deslauriers, Julie, "The French Path: Early Major-Minor Theory from Jean Rousseau to Saint-Lambert," *Music Theory Online* 23, no. 1 (March 2017), https://mtosmt.org/issues/mto.17.23.1/mto.17.23.
Playford, John. *An Introduction to the Skill of Musick*, *Corrected and Amended by Mr. Henry Purcell*, 12th ed. London: E. Jones, 1694. imslp.org.
Powers, Harold. "From Psalmody to Tonality." In *Tonal Structures in Early Music,* edited by Cristle Collins Judd, 275-340. New York: Garland, 2000.
Powers, Harold. "The Western Historical Canon as Exotic Music." *Il Saggiatore musicale* 8, No. 1 (2000): 51-61. jstor.org.
Prout, Ebenezer. *Fugue*, 4th ed. London: Augener, n.d. [1891]. archive.org.
Prout, Ebenezer. *Counterpoint: Strict and Free*, 7th ed. London: Augener, n.d. [1890]. archive.org.
Prout, Ebenezer. *Harmony: Its Theory and Practice*, 5th ed. London: Augener, n.d. [1889]. archive.org.
Prout, Ebenezer. "Fugal Structure." *Proceedings of the Musical Association* Eighteenth Session (1891-1892): 135-159.

Rameau, Jean-Philippe. *Traité de L'Harmonie Reduite à Ses Principes Naturels.* Paris: Jean-Baptiste-Christophe Ballard, 1722. imslp.org.
Rameau, Jean-Philippe. *Treatise on Harmony.* Translated by Philip Gossett. New York: Dover Publications, 1971.
Schenker, Heinrich. *The Masterwork in Music.* Vol. 2. Translated by Ian Bent, William Drabkin, John Rothgarb and Hedi Siegel. Edited by William Drabkin. Cambridge University Press, 1996. books.google.com.
Shirlaw, Matthew. *The Theory of Harmony: An Inquiry into the Natural Principles of Harmony, With an Examination of the Chief Systems of Harmony from Rameau to the Present Day.* London: Novello & Co., n.d. [1917].
Spitta, Philipp. *Johann Sebastian Bach.* Vol. 3. Translated by Clara Bell and J.A. Fuller-Maitland. London: Novello, 1979.
Stein, Deborah, and Robert Spillman. *Poetry into Song: Performance and Analysis of Lieder*. Oxford University Press, 2010. books.google.com.
Stone, Stephen C. *Music Theory and Composition: A Practical Approach*. Lanham, Md.: Rowman & Littlefield, 2019. books.google.com
Tovey, Donald Francis. *A Musician Talks*. Vol. 2. Oxford University Press, 1946. books.google.com.
Walker, Paul. *Fugue in the Sixteenth Century*. New York: Oxford University Press, 2021.
Walker, Paul. *Theories of Fugue from the Age of Josquin to the Age of Bach.* Rochester, N.Y.: University of Rochester Press, 2000.
Walker, Paul. "Fugue." In *The New Grove Dictionary of Music and Musicians*. 2nd ed. London: Macmillan, 2001.
Weber, Gottfried. *Versuch Einer Geordneten Theorie der Tonsetzkunst Zum Selbstunterricht*. Vol. 1. Mainz: B. Schott's Söhnen, 1824. books.google.com.

Weber, Gottfried. *The Theory of Musical Composition.* Vol. 1. London: Messrs. Robert Cocks and Co., 1846. books.google.com.
Werckmeister, Andreas. *Andreas Werckmeister's Cribrum Musicum (1700) and Harmonologia Musica (1702).* Translated by Casey Mongoven. Hillsdale, N.Y.: Pendragon, 2013.
Williams, Peter. *The Organ Music of J. S. Bach*. Vol. 1, *Preludes, Toccatas, Fantasias, Fugues, Sonatas, Concertos and Miscellaneous Pieces (BWV 525-598, 802-805 Etc).* Cambridge University, 1980. books.google.com.

Glossary of terms used

This glossary focuses principally on terms as they are used in this paper, including some that are coined in the study itself. It does not attempt to describe how some usages have changed over time. It omits terms that are already well known (subject, answer etc.) unless they require special discussion.

"Classical" fugue, and "classical" fugal answer. "Classical fugue" usually refers to fugue from the period c. 1700-1750, contemporaneous with J.S. Bach and George Frideric Handel. The "classical" answer refers to the prevailing answer-procedure of this time, or perhaps more precisely, a family of closely related conventional procedures. To some extent, these norms are also characteristic of earlier and later fugue. The exact period can be debated; this author's sense is that the "classical" method accurately describes many answers throughout the whole era 1650-1900, its persistence on the later side perhaps aided by the perceived authority of Bach.

Combination subject. A fugal subject that from the standpoint

of analysis, particularly analysis of the answer, can be profitably regarded as the combination of two other types of subjects: a “lead-in” (see glossary entry), and an “unconstricted segment” (see glossary entry). The reason the concept is useful is that generally, the two “sections” within the combination subject can be expected to receive the same or very similar answers to that which they would elicit if they were proposed as separate fugal themes. In the combination subject, the lead-in is regarded as the first part of the subject, and the unconstricted segment as the rest of it. There is an overlap of one note (see “hinge note”) so that the last pitch of the former is the first pitch of the latter.

Compass-exchange norm. A term coined in the present study. This is a theoretical principle with origins that can be traced to around 1600 in textual sources, and perhaps earlier taking into account the repertory itself. The compass-exchange norm overlaps with, but is not identical to, what is today simply called “the old rule” (which is in fact a rather diffuse and imprecise echo of the original concept, and sometimes even denotes more than one rule). The compass-exchange norm was, from its origins, proposed under varying names and theoretical rationales, with slightly different formulations, often but not always as a prescriptive claim: nonetheless, its central and characteristic demand remained relatively consistent. This can be stated as follows. If the subject, or its leading phrase or opening motif, be contained in the *fundamental fifth* (see entry below), the corresponding part of the answer should be similarly in the fundamental fourth—and vice-versa—so that subject and answer (or relevant portion thereof) be contained in the octave. This last sentence is adapted from Green’s description quoted on p. 4. Notwithstanding any prescriptive zeal behind the norm, exceptions were always fairly common;

certain categories of subjects even found themselves "systematically" excepted.

Fundamental fifth, fundamental fourth. The interval, or melodic compass, of a fifth or fourth between tonic and dominant notes. This interval is a fifth or a fourth depending on whether the dominant lies above the tonic, or beneath it respectively. In some contexts the term "fundamental fifth" is used to denote the fifth over any note, and in other contexts these terms have more "modal" interpretations, but in the present study only the first definition is used.

Head. A melodically distinct or noticeable opening motif ("*trenchant*": Gédalge, *Traité,* 11) within a subject, and a concept which should never be confused with the "lead-in" even though the two sometimes coincide. See "Lead-in."

Hinge note: In a combination subject, the last note or pitch of the first portion of the subject (see "lead-in") is usefully considered as being the same as the *first* note or pitch of the *last* section of the subject (see "unconstricted portion.") This note of overlap is called the hinge note (or alternatively, technically hinge "tone," if it is a repeated note).

Key-changing answer (or, theory of key-changing answers). A fugal answer in which tonic-key areas are answered by dominant-key areas, and vice-versa. Theorists who have argued that answers generally should, or do, follow this principle include Ebenezer Prout and André Gédalge, although the details of the theories differ. In reality, there are important classes of fugal themes for which the principle of "key-retention" and "key-change" can both be discerned in operation—one to one part of the subject, the other to another part.

Key-retaining answer (or: theory of key-retaining answers, theory of key-retention etc.) A fugal answer that, along with the subject itself, is in the tonic key. This simple premise may be complicated by different possible criteria to decide whether this conformity indeed exists in a given case; nonetheless it is possible to identify some reasonable criteria, as discussed in the present study. Another subtlety discussed is that for some subjects, such as our Ex. 1, a "key-retaining" answer may in fact be one and the same as the most likely "key-changing" answer (see next entry). Theorists who have argued that answers generally should, or do, retain the tonic key, include in modern times Roger Bullivant, and several late-baroque theorists. The concept developed out of earlier modal theory, in which fugal answers were supposed to project the same mode as the subject. See Walker, *Theories of Fugue.*

"Key-signifiers," system of. A set of rules-of-thumb derived from several authors, for determining which parts of a subject are to be attributed to the tonic key, and which to the dominant key, for purposes of forming an answer.

Lead-in…

... subject: a *lead-in subject* (the term is invented in the present study) denotes a type of fugue subject, typically short, that outlines a fundamental fifth or fourth, does so once only, and normally does not go out of that same compass. The concept was invented mostly because it is useful for understanding a basic kind of tonal answer procedure, one that generally focuses on preserving the tonic key and has also been called *fugue de l'octave* (see glossary entry). Lead-in subjects characteristically, but not necessarily elicit tonal answers of this kind. In some cases either the tonic or the dominant are substituted for by their

third. In such cases the lead-in ultimately only moves by second or third, although its overall compass, taking into account in-between notes, can still be as wide as a fundamental fourth or fifth.

… portion of subject (or part, or segment, etc.): the *lead-in section of a subject* (where applicable) is that portion of a subject, at the outset, which exhibits all the characteristics of a lead-in subject. This part can generally be considered to "invite" tonal answers, both as independent themes and as beginnings of longer themes, in very much the same way that lead-in *subjects* "invite" tonal answers, and usually using essentially the same procedures. See "combination subject."

… with substituted third: see lead-in subject. A lead-in with substituted thirds can occur either as an independent subject (lead-in subject), or as the beginning of some other subject (hence lead-in portion of subject; see "combination subject.")

… multiple, the occasional phenomenon in which more than one successive (and tonally answered) lead-in motifs opens a subject. See also "combination subject." One lead-in is the norm, but multiple lead-ins are appropriate in some situations. In the usual case where only one lead-in is tonally answered, then, even if the subject begins with multiple successive motifs resembling lead-ins, it makes little sense to call them lead-ins given that they are not tonally answered.

…used with no special modifier: can refer broadly to any or all of the above meanings.

Lead-in, potential confusion regarding: A lead-in should not be confused with the "head" of a subject, which generally denotes a melodically *distinct or noticeable* opening motif. In

a given fugue a “lead-in” and a “head” may or may not coincide, if either one is present at all. For example, in Ex. 101 of the present study, the “head” can probably be identified as the first five notes, but the “lead-in” is only the first three notes. In Ex. 52, conversely, the lead-in is *longer* than what would likely be considered the head. In Exx. 49, 50 and 100, lead-ins and heads arguably coincide. Some subjects have lead-ins but arguably no clearly definable “head.” Ex. 370 in Marchant’s *Five Hundred Fugue Subjects* may serve to illustrate.

“Old rule.” In fugue, a relatively modern idea or set of ideas, usually or often loosely referring to an older theoretical principle that I have labeled “the compass-exchange norm” (see entry) in an effort to demarcate it more accurately. The term “old rule” quickly became sufficiently diffuse in meaning (Nalden laments this vagueness in *Fugal Answer*, 16), and distant from the original concept, as to limit its usefulness. For Prout, “the old rule” even denotes more than one rule (that an opening tonic-dominant leap is to be answered tonally, a concept illustrated through both “mod[al]” and key-based interpretations, but also that an opening dominant in itself will be answered by a tonic. See Prout, *Fugue*, 32-3 and 41.) The present paper abandons the term “old rule.” Nonetheless it is not without a certain historical interest. To my knowledge, the earliest appearance of the term, or its equivalent, is in Albrechtsberger’s 1790 *Gründliche*, 172-3: “ur-alte regel,” which has been translated as “ancient rule” or “very ancient rule.”

“System of key-signifiers”—see “key-signifiers, system of.”

Tone-semitone exchange. The practice of changing the quality of melodic intervals in the answer—major to minor, or

vice versa, or augmented to perfect, etc. It has sometimes been considered an irregular or incorrect practice. As used in this study, tone-semitone exchange constitutes neither “real” nor “tonal” imitation as such, but might be used in conjunction with, or to slightly modify, either.

Unconstricted…

… subject: An *unconstricted subject* (or theme) is one that does not exhibit the defining characteristics of a “lead-in subject” (see) and that, furthermore, does not even begin in the specific manner characteristic of a lead-in subject. Typically the answer procedure for unconstricted subjects is slightly different than it is for lead-in subjects. This is why one makes the distinction between these two categories. (However: if a subject begins in the manner characteristic of a lead-in subject, yet that lead-in is *not* tonally answered, then—as far as the answer procedure goes—this subject becomes a *de facto* unconstricted subject).

… portion of subject (or part, or segment, etc.): the *unconstricted part* of a subject (where applicable) is that portion of a subject, *not* at the beginning, that exhibits the characteristics of an unconstricted subject. This term is used when the opening motif of the subject is definable as its lead-in part (see “lead-in,”) and hence, the subject as a whole cannot be considered of unconstricted type; it is rather considered a “combination theme” (see). In these cases, one can usually predict with some confidence that the unconstricted part of the subject will receive the same or very similar answer to that which it would have received as an independent fugue subject. The first note (or pitch) of the unconstricted portion, is taken to be the same as the *last* note (or pitch) of the lead-in. (See “hinge note.”) The last

note of the unconstricted portion is the last note of the entire subject. The reason for defining the beginning and end of the unconstricted part in that way, is that it makes it easier to reliably predict the answer, since it guarantees that the first note of the unconstricted section is one of the "regular" odd-numbered scale degrees generally used as outer notes of subjects. (See also: "Gédalgian special-modulations schema.")

"Walther-Banister norms." Another term coined in this study, this is a list of "rules," widely but far from universally observed, specifying which locations in a given fugal theme are suitable for mutations or tonal alterations, and which are not. See p. 24. The norms have been principally drawn from a variety of past authors, and checked by this writer against some important repertories of approximately 1675-1750, particularly Bach, to assess their accuracy. The norms have been formulated so that all scale degrees are counted from the original and overall tonic; in this way, they can be applied to, and are reasonably accurate for, both "key-retaining" and "key-changing" answers.

Forty-eight fugues with key-retaining answers

These works maintain tonic tonality throughout their expositions. Several them might be considered incidental to larger movements, but in any event play significant or introductory roles in those works. Others were published as didactic exemplars.

MAJOR

1. Bach, J.S.: Fughetta super Allein Gott in der Höh sei Ehr, BWV 677 (*BGA*, 3:205)
2. Bach, J.S.: Clavier Fugue in C, BWV 952, BWV 952 (*BGA*, 36:184)
3. Beethoven: Fuga a 3 in B flat major, from *Quindici Fughe*

(n.c., Jolando Scarpa, n.d. [2014]), 6. imslp.org.
4. Böhm: Gigue from Suite in Es Dur (*Sämtliche Werke*, 1:50.)
5. Böhm: Gigue from Suite in Es Dur [2 different fugues, one in each half] (*Sämtliche Werke*, 1:47.)
6. Buxtehude, Toccata in F, BuxWV 156 (*Collected Works*, 15:75.)
7. Buxtehude, chorale prelude Lobt Gott, ihr Christen, Allzugleich, BuxWV 202 (*Orgelwerke, 4:42.*)
8. Corrette, Michel: “Musette” (*Premier Livre*, 44.)
9. Couperin, François: Trio in G major, from *Oeuvres Complètes de François Couperin*, ed. Paul Brunold (Paris: Éditions de l’Oiseau-Lyre, 1932) 82. imslp.org.
10. Dandrieu, “Flûtes,” from *Premier Livre de Pièces d’Orgue*, ed. Pierre Gouin (Montréal: Les Éditions Outremontaises, 2009) 148. imslp.org.
11. de Grigny: Veni Creator: Fugue a 5 (*Premier Livre*, 72)
12. Fischer: Fuga, Praeludium 8, *Ariadne Musica* (Sämtliche Werke, 83)
13. Graupner, Christoph: Gigue in C major, from *Keyboard Works*, ed. Walter Flickert (Leipzig: Edition Peters, 1959), 30. imslp.org.
14. Handel: “Glory be to the Father” chorus, HWV 279 (*Utrechter Te Deum und Jubilate*, 70)
15. Jacquet de La Guerre, Sonata for violin and harpsichord (*Sonates*, 39)
16. Krieger, J., Gique [*sic*, in B flat] (*Complete Organ & Keyboard*, 1:37)
17. Krieger J.P. (?): Fuga ex G.h (*Complete Organ & Keyboard*, 2:97)
18. Martini: Untitled (didactic exemplar in C major; *Esemplare*, 2:13.)
19. Purcell, untitled (didactic 2-voiced fughetta in C) (Playford, *Introduction*, 107.)

20. Raison, “Laissez Paître vos Bêtes” (*Second Livre*, 46)
21. Reiche, Fugue in D major, arr. by Michel Rondeau (Michel Rondeau, 2005, 1.) https://ks.imslp.net/files/imglnks/usimg/1/17/IMSLP204675-WIMA.576b-DSco.pdf)
22. Sala, “Autre sorte de Fugue rechérchée et serrée a un seul sujet, avec basse continue” (Choron, *Principes* vol. 4, “Modèles de Sala Pour le Quatrième Livre,” 57)
23. Speth, Johann, Verset no. 1 of “Magnificat Septimi Toni,” from *Ars Magna Consoni et Dissoni* (Augsburg: Lorentz Kroniger und Gottlieb Göbels seeligen Erben, 1702), 73. imslp.org.
24. Anonymous, “Basse” (*Livre D'Orgue de Montréal*, 1:152; No. 96)

MINOR

25. Albrechtsberger, Johann Georg: Verset no. 4 from *50 Versetten und Acht Fugen* (Vienna: Tobias Haslinger, n.d. [1836]), 2. books.google.com.
26. Bach, J.S.: “Durch Adams Fall” chorale prelude (*BGA*, 40:23)
27. Böhm: Gigue from Suite in Es Dur (*Sämtliche Werke*, 1:13.)
28. Buxtehude: Praeludium in g, 2nd fugue, BuxVW 150 (*Collected Works,* 125)
29. DuMage: Fugue in D minor (*Premier Livre*, 4)
30. Fischer: Praeludium III, Fuga VI, *Blumen Strauss* (*Sämtliche Werke*, 109)
31. Handel: Allegro from “Dixit Dominus” (*Georg Friedrich Händel’s Werke*, 38:114)
32. Haydn, Michael: Verset no. 2 of “Primi Toni” (*50 Kleine Orgelstücke*, 1)

33. Jacquet de La Guerre: Presto from Sonata for violin and harpsichord (*Sonates*, 28)
34. Krieger, J.: Fuga in d (*Complete Organ & Keyboard*, 2:55)
35. Krieger, J.P: Fuga (*Complete Organ & Keyboard*, 2:30)
36. Lübeck: Fuga ex Gb (*Musikalische Werke*, 3)
37. Marchand, Louis: Fuga (in G minor), ed. Jaap Wiebes, (n.c., Jaap Wiebes, n.d. [2018]), 1. imslp.org.
38. Masson: Fugue à Trois Parties (*Traité*, 112)
39. Mattheson: unfinished didactic fugue "Fugal phrase in the minor key which ends on the major fourth" [i.e. the subdominant] (*Capellmeister… translation*, 1173)
40. Mozart: Fugue in G minor, K. 154, completed by Simon Sechter. In *Mozarts Werke, Serie XXIV, Supplemente, Bd.1, No.25,* ed. Carl Reinecke (Leipzig: Breitkopf & Härtel, 1887), 4(60). imslp.org.
41. Muffat, Gottlieb: Ricercata XXV in c (*32 Ricercares*, 2:16)
42. Muffat, Gottlieb: Ricercata XXIX in g (*32 Ricercares*, 2:28)
43. Purcell, Sonata No. 4, Allegro (*Ten Sonatas of Four Parts*, 36)
44. Purcell, Sonata No. 1, Canzona, (*Ten Sonatas of Four Parts*, 2)
45. Rameau, Laboravi Clamans (*Traité*, 341)
46. Telemann, Fuga XVI, double fugue (*Orgelwerke*, 142)
47. Telemann, Fuga XVII (*Orgelwerke*, 143)
48. Vetter, Nicolaus: *Choralfuge: Christ lag in Todes Banden*, ed. Pierre Gouin (Montréal: Les Éditions Outremontaises, 2018), 1

Notes

* A special note of appreciation is owed to Paul Walker, Emeritus Associate Professor of the Practice, Organ at Notre Dame University for patiently reviewing drafts of this paper and

furnishing valuable suggestions.

[1] Horsley, *Fugue*, 116.

[2] Perhaps the most widely cited quote is Tovey's: "The rules governing details of tonal answers are vexatious… there are numerous cases where it is said to be difficult to find a correct answer." Tovey, *A Musician Talks,* 25. Similarly Nalden begins the preface to his book *Fugal Answer* thus: "A suggestion that I should attempt to solve what he termed 'the riddle of the fugal answer' was put to me by the late Professor H. Hollinrake (Professor of Music, University of Auckland, 1935-55)…" *Fugal Answer,* xi. Green (1877) wrote: "Even our illuminati are in as great a state of mystification as many of ourselves in regard to the principles and even the definition of a tonal fugue." Green, "Tonal Fugue," 371. A more recent author writes: "A common and potentially vexing problem with fugue subjects [is] real and tonal answers." John J. Mortensen, *Improvising Fugue: A Method for Keyboard Artists* (New York: Oxford University Press, 2003), 239. A very early attestation of difficulties of this nature dates back to 1650: "all those who profess [the topic] have no certainty about it," writes Denis in *Traité*, 28, in a discussion of both mode and fugal imitation. If one goes back earlier to sixteenth-century theory, we find that the problem of what we would today call the fugal answer becomes folded into the larger, never fully settled issue of identifying and projecting the mode. See e.g. Judd, "Renaissance Modal Theory," 364.

[3] See pp. 3-9.

[4] I am not opposed to thinking independently and disputing Bach, but I think it best to balance any such "correction" with few words on why such a great musician might have preferred the answer he did use. Granted this is not always easy to explain, but I hope this study may help. Following I list all answers in the *Well-Tempered Clavier* that to my knowledge

have been faulted. Bach was not in every case called mistaken in so many words, but if the theorist proposes a different answer claiming it is better, then clearly the theorist perceived Bach's as suboptimal. *Book I, C minor and A♭ major:* criticized by Kitson in *Elements*, 18. *Book I, G# minor and B minor:* disputed by André, *Lehre der Fuge*, 35-6. *Book II, F# major:* faulted by Fétis, *Traité*, 2:53. *Book II, G major*: criticized by Bullivant, *Fugue*, 184 (the author believes Bach "spoil[ed]" the arpeggio but does suggest an explanation from Bach's perspective). *Book II, B♭ major:* faulted by Kitson in *Elements*, 19 ("Bach seems to have confused the issue"). I have not counted "corrections" of Bach from theorists who are against all tonal answers on principle.

[5] See Higgs, *Fugu*e, 1, ¶4.

[6] E.g., for Mark DeVoto, the tonal answer is a theme "slightly manipulated to avoid a true change of key." See DeVoto, "Elements Of The Fugue," in *Encyclopædia Britannica,* accessed April 10, 2020, https://www.britannica.com/art/fugue/Varieties-of-the-fugue. But Higgs writes: "When the subject modulates the answer will be tonal… [It] will reverse the process and make a backward modulation..." See Higgs, *Fugue,* 21.

[7] "Opinion is sharply divided regarding the origin and nature of the tonal (melodically altered) fugal answer," writes Nalden at the opening of *Fugal Answer,* 1.

[8] Theorists have observed a certain stabilization in fugal-answer procedures during this time. "In most cases, we find that other great masters do the same as Bach" (Prout, "Fugal Structure," 137; Prout probably had in mind both later-baroque and romantic composers, to judge by the models quoted in his treatise *Fugue*. For his treatment of the answer, see *Fugue*, 18-68). Along similar lines, Horsley states that similar norms can

frequently be used to describe both “those nineteenth-century fugues that use tonal answers,” and “fugues of J.S. Bach and… the Classical period.” (Horsley, *Fugue*, 113.) A review of Marchant’s compendium, *Five Hundred Fugue Subjects and Answers, Ancient and Modern*, supports these observations, though an increased proclivity for real answers does seem to mark the romantic era. The notion that fugal-answer procedure is consistent over any period has its skeptics, however. Nalden emphasizes the diversity of answer techniques over their uniformity: “we cannot generalize”; despite this, he admits certain aspects of this practice were “remarkably consistent.” See Nalden, *Fugal Answer*, 186, and note 329 below.

[9] See also note 2.

[10] “Non mi è noto alcuno Autore, che siasi presa la briga di bene analizzare la natura de’ Soggetti e dedurne delle generali regole, chiare, fisse, ed invariabili, onde fare con sicurezza le adequate Risposte ad un dato Soggetto; tutti gli Autori hanno trattata questa materia con tanta oscurità, che appena trar si può da’ loro scritti alcun lume sicuro in tanta ambiguità di cose. Gli stessi maestri nascondono qui non so quali arcani a’loro discepoli, e credono che per far la Risposta ad una Fuga sia duopo d’essere un Zoroastro, o un Simon mago.” Reprinted in Burton, “Guida e Conseguente,” 126-7. I have used Burton’s translation except at two points—(1) changing the fifth word from “subject” to “matter” to avoid confusion with fugue subject, and (2) slightly revising the wording just before “Zoroaster” in an effort to better capture the shade of meaning.

[11] He was not necessarily wrong. A number of texts have discussed the notion of music theory as “trade secret”; see e.g. Knudd Jeppesen, *The Polyphonic Vocal Style of the Sixteenth Century* (New York: Dover Publications, 2013), 24. On the other hand composer-theorists in the eighteenth century such as J.-

P. Rameau could earn money selling music theory, writings often praiseworthy for their manifest candor, if not marked by definitive breakthroughs on fugal answer specifically. One can attribute the “obscurity” noted by Galeazzi simply to the fact that fugal-answer procedure is inherently hard to articulate.

[12] Most serious writings on the fugal answer are fairly lengthy. This is due to the nature of the topic, which “deserves not to be rushed past but explained thoroughly”—Mattheson, *Capellmeister… translation,* 1131. While the present text is no exception, it should be emphasized that a far shorter presentation of the same material *is* possible in certain contexts, such as pedagogical presentations. Such abbreviation would be inopportune for the present article because, in the context of outlining a relatively new theory, one has to make every effort to preempt possible objections that might arise.

[13] Bach, *Wohltemperierte… Zweiter*, 46.

[14] Bach, *Wohltemperierte… Erster*, 82.

[15] Händel, *Werke*, 31:70.

[16] Tovey, *A Musician Talks,* 24.

[17] Prout’s *Fugue* has enjoyed a “long unchallenged reign… as the standard textbook on the subject,” writes Nalden in *Fugal Answer*, 17. Another major text sharing Prout’s premise on the answer, though with differences of detail, is Gédalge’s *Traité*, “the definitive outline of the school fugue” or *fugue d’école* according to Walker, “Fugue,” 329. One might ask whether these books should still be treated as standard reference points today. Already in 1972, J. Kenneth Wilson asked whether Prout and Gédalge (among others) “continue to bear heavily on present understanding and taste? Is it logical to begin an objective study of eighteenth-century music by going first to such treatises?” Wilson is right to suggest renewed attention to early texts, and the present study will examine

those. However, modern texts still offer significant contributions, and probably exceed the early books in present-day influence. Among the moderns, while this study will look at several, to my knowledge none has yet supplanted Prout or Gédalge in influence and importance. See Wilson, review of *Fugal Answer*, by Charles Nalden, *Notes* 28 no. 3 (March 1972): 439, https://doi.org/10.2307/939444.

[18] Prout, *Fugue*, 2 and 18.

[19] Ibid., 18. Our excerpt includes a few more notes than Prout's.

[20] Nalden, *Fugal Answer,* 45-46; Bruhn, *Bach's Well-tempered Clavier*, 86, 122, 145, 199, 210, 221, 241, 265, 309, 392, 464, 504, 525, 554, 566; also see notes 6 and 30. These citations are not meant to imply I concur with the authors in each case where they perceive a tonic-key answer.

[21] Bullivant, *Fugue*, 183. Incidentally, it is not perfectly clear to which scholars this last sentence refers, but if it is intended to describe the influential theoretical tradition of the century preceding Bullivant, represented by e.g. Prout or Gédalge, then it is a misleading "straw-man" caricature. See Prout quote on p. 4.

[22] While fugues are also very apt to include entries of the theme at the octave, the term "answer" is usually reserved for entries at the fifth, fourth or compounds. See Bullivant, *Fugue*, 22, 56, or Prout, *Fugue*, 89.

[23] Bullivant, *Fugue*, 62-3.

[24] Ibid., 63. Of our Ex. 4 (drawn from Bullivant's Ex. 31), he writes: "scalic unity [is] sacrificed for unity of theme and key," implying the key does not change. Bullivant's language, like that of some other fugal theorists, occasionally seems imprecise. In the just-quoted sentence, he implies that the sharp in Ex. 4 *increases* "unity of… key" compared to an otherwise identical answer with no sharp, but this strains logic.

Incidentally, what Bullivant calls foreign notes can also be called applied leading tones. See Aldwell and Schacter, *Harmony*, 396ff.

[25] Bullivant, *Fugue*, 40.

[26] Ibid. Bullivant uses lower-case roman numerals to represent scale degrees.

[27] At a couple of points in his book Bullivant hedges his original position that the answer is in the tonic key. ("At least to a reasonable extent," he adds; Bullivant, *Fugue, 22*; also, incidental fugues may deviate.) However he never abandons the fundamental premise.

[28] In this paper, all note names are in capital letters without reference to octave register, as register will generally be either clear from the context, or immaterial. Our nomenclature generally follows Aldwell and Schacter's in *Harmony*. Numbers with carets refer to scale degrees. Roman numerals refer to either chords or keys, as I try to make clear from the context. Nomenclature may differ in quotes from other writers.

[29] Bach, *Bach-Gesellschaft Ausgabe*, 15:92.

[30] Oldroyd, *Technique and Spirit*, 69 and 84.

[31] This is implicit in his repeated use of words to the effect of "well into the answer" (see above quote), as well as in his choice of examples.

[32] The answer shown here is one of four possible answers shown by Bullivant. See Bullivant, *Fugue*, 62-63.

[33] Oldroyd, *Technique and Spirit*, 90.

[34] E.g. Prout, *Fugue*, 33. I do not intend by citing Prout's treatise to endorse its specific interpretation of the "old rule" (as will be clear shortly). I cite it because it is a major modern treatise that espouses a certain understanding of the "old rule" and uses that phrase.

[35] Schenker, *Masterwork in Music*, 36. Schenker is writing

specifically in reference to Bach's C minor fugue from *The Well-Tempered Clavier,* Book I, which has a tonal answer fitting this description.

[36] Green, "Tonal Fugue," 372.

[37] Tovey brings up a similar concept: "where in one position a melody has a fifth in which to move it will have only a fourth in the other position." Tovey, *Musician, 2*6.

[38] See Bullivant, *Fugue*, 183, ¶C; Oldroyd, *Technique and Spirit*, 83-84; and note 145 for R.O. Morris' comments. Prout at one point concedes the same essential point, without dwelling on the fact that it undermines his broader theory of the key-changing answer. Of answers that give $\hat{1}$ in response to $\hat{5}$ for the second note, he writes: "the second note destroys the feeling of dominant at once." (Prout, *Fugue*, 40).

[39] The emergence of the "rule" in some form has been dated to the years around 1600, although this paper will not follow the story this far back. See e.g. Girolamo Diruta, *Seconda Parte del Transilvano* (Venice: Alessandro Vincenti, 1622 [originally published in 1609]), Book III, 12. See also Walker, *Theories of Fugue,* 64, 72-4. It should be noted that originally the convention was described as aimed at preserving the "mode," not the key, but by the eighteenth century it became common to conceptualize it in terms of key.

[40] Mattheson's tendency to define a key in terms of an ideal compass, deemphasizing its harmonic characteristics, reflects a traditional way of thinking previously associated with the "modes." See notes 39 and 34.

[41] Mattheson, *Capellmeister… translation*, 1131.

[42] Ibid., 1146.

[43] Ibid., 1145-6. Mattheson does not use a term such as "old rule."

[44] One can see this from, among other evidence, the eight

examples in Ibid., 1135-7. In his third and fifth subject-answer pair, not only the opening but the whole theme outlines a range from tonic at one end of the subject to dominant at the other end, receiving a tonal answer. All eight examples together appear to embody Mattheson's understanding of what is now called the old rule. This is evident in part because right after the eighth example he states: "Here one sees clearly in all cases that the fifth must come from the fourth and the fourth from the fifth." (*Capellmeister… translation*, 1137).

[45] Oldroyd, *Technique and Spirit*, 90.

[46] One interesting and difficult question is when, and by whom, "key-changing" fugal answers were first theoretically recognized. Rameau appears to be one of the earliest whose writing implies an awareness of the key-change principle of the answer; still, he discusses it only indirectly, only in a later part of his discussion of fugal answers, and without explicitly saying two keys are involved. See Rameau, *Traité,* 338. The question of "who theorized it first" is partly semantic. In the seventeenth century, Christoph Bernhard observed that in the case of real answers, the answer can adopt a "mode" that is "similar" though not identical to that of the subject. In some cases, but by no means always, his "similar" mode could be interpreted by modern readers as simply the dominant key. See Walker, *Theories*, 152-164 and 191-8.

[47] Many of the historical texts espouse this theory more implicitly than explicitly: they take it for granted that one key will be used, and spend little effort justifying why. An exception, in which an argument for key-retention is made explicit, is *A Treatise on Harmony* (London: W. Pearson, 1731), 79-87. https://www.
loc.gov/item/05040484. Anonymous but widely credited to John C. Pepusch, it states that if the thematic statements "are

not in the same scale … this is a liberty not very allowable, because in that every piece of musick, all the parts ought strictly to be in the same scale." The author concedes, however, that the "liberty" is in fact possible, preferably "sparingly." It further transpires that this author conflates "keys" and "modes" in a way that might raise modern theorists' eyebrows, even though, as he claims, "we don't intend to treat of the modes." Pepusch (1667-1752) is said to have been born and lived his first thirty years in Germany, where modal theory was influential until quite late, so this may help explain the idiosyncracies.

[48] See note 8.

[49] Some other qualifications can be briefly listed here. (1) The historical transition was very gradual; many composers wrote both key-retaining and key-changing answers. (2) Some answers can be equally well classified as "key-retaining" or "key-changing." (3) It is not easy to find any two theorists who would be likely to draw the line between "key-retaining" and "key-changing" answers in the same way. None of this negates the usefulness of the theoretical distinction, which some scholars made despite the challenges.

[50] By "workable" I mean that an observer would be able to predict or approximate the most likely answer that, for example, Bach or Handel would have given to a specified subject, and give a plausible account of musical rationales for that answer. For a basic theory, it seems difficult to expect much more.

[51] See e.g. Prout, *Fugue*, 3 (¶9), 4 (¶17), 89 (¶206).

[52] Händel, *Werke*, 13:67.

[53] A phrase borrowed from Prout in a slightly different context (*Counterpoint*, v).

[54] E.g. Bent, "Grammar of Early Music," 24; Powers, "Western

Historical Canon," 55. The adage is usually cited as the opening sentence of a 1953 novel by Leslie Poles Hartley, *The Go-Between* (New York: New York Review Books, 2002), 17, https://www.google.com/books.

[55] Lester, *Between Modes and Keys*, explores this era in musical thought in depth, though Powers in "From Psalmody to Tonality" contests some of Lester's findings.

[56] See Bullivant's remarks on pp. 4-5. Here, in defense of his position, he could point out that no note foreign to the key resides within in the answer itself (GBAG). He makes precisely that argument to portray the answer of Bach's E major fugue, *Well-Tempered Clavier*, Book II, as key-preserving. Bullivant also highlights the tonic-dominant correspondence of Bach's answer, which our Ex. 7 obeys as well. See Bullivant, *Fugue*, 56 (the two "rules") and 59 (including note 18.)

[57] E.g., Prout regards the subject of Bach's organ Fugue in C major, BWV 531, as tonic-key, but Marchant views it as dominant-key, that is, in G. (See Prout, *Fugue*, 26, and Marchant, *Five Hundred*, 40; second example on each page.) Elsewhere, Bairstow in *Counterpoint and Harmony*, 318 illustrates a subject that he believes could be reckoned as inhabiting any of three keys. And Bullivant in *Fugue*, 49 cites a subject by Kitson that, he says, is meant to be in G major but to Bullivant is really in E minor. BWV 531 deserves a few additional remarks, not least because Prout regards its answer as in the subdominant. It is a rather unusual fugue for Bach, and a youthful one. To my mind, both subject and answer are in the tonic key, except that the answer has a temporary subdominant inflection, the same factor preventing the whole exposition from being considered tonic-key. See Bach, *Bach-Gesellschaft Ausgabe*, 15:84; Prout, *Fugue*, 26; Bullivant, *Fugue*, 185; and Christoph Wolff, *Johann Sebastian Bach: The*

Learned Musician (Oxford: Oxford University Press, 2002), 74, https://www.google.com/books.

[58] Rather than quoting an existing fugue I devised Ex. 7 myself, both to ensure brevity and because I worried that placing a huge splotch upon, say, a Bach fugue, and pronouncing this a form of "analysis," might come across as a touch disrespectful. There is no shortage, however, of "old master" fugues that raise analogous logical issues as Ex. 7. Obviously the analogy need not be precise—"accompanying counterpoint" can theoretically suggest many different keys—but one case that really is closely analogous to Ex. 7 is the C major fugue of WTC, Book I. Its subject starts on C. The answer starts on G and is accompanied by cadences in V. Somewhat unusually there are two answer entries before the subject returns. When it does return, it is accompanied by a subdominant cadence, including the B flat characteristic of F major. Another close analogue is the B flat major fugue of Book II of the same collection. See Bach, *Wohltemperierte… Erster,* 6, and *Wohltemperierte… Zweiter*, 120.

[59] Bullivant may be the theorist who has explained this procedure most clearly, perhaps precisely because as a modern writer, it occurs to him to state explicitly what earlier theorists took for granted. "The idea of the subject as necessarily tied to… a set series of 'accompanying' chords is quite foreign to fugal practice generally," he writes (*Fugue*, 94). Citing the same fugue as our Ex. 1, he elaborates: "answer-procedure is concerned only with *the notes of the answer itself*—not with anything that may occur in any voice *accompanying the answer*. That the combination of answer and another voice here may be said to 'go into B major' at the fourth crotchet of bar 3 does not affect the essential fact that the subject and answer themselves preserve between them tonic

tonality and scale." (*Fugue*, 59, note. Emphases in original.) Eighteenth-century theorists by and large concurred with Bullivant, but their tendency to leave the matter implicit is one of many reasons why the fugal answer has been a difficult topic. One can infer their attitude from the fact that they frequently omit to discuss the accompaniment when treating the tonality of the theme. For example, in the chapter on fugue of Mattheson's *Capellmeister* treatise—a discussion that mostly focuses on the proper formation of answers—the first sixteen musical exemplars or excerpts include just two whose accompaniment is quoted. Nor does Mattheson suggest that the accompaniment would affect the propriety of the answer itself. (*Capellmeister… translation*, 1125-39.) In a similar vein, Giambattista Martini asserts that a fugue is "true to the mode" so long as the subject and answer themselves observe special compasses. He does not impose conditions related to the harmony or accompaniment. (See Mann, *Study of Fugue*, 271.) This way of thinking is circuitously traceable to the renaissance, when some voices were considered subsidiary to others in defining the "mode"—a topic beyond this study, but see, e.g., Meier, *The Modes*, 47-78 and 171-8, or Dahlhaus, *Studies*, 201-2 and 266. I would not deny, incidentally, that from one perspective it is illogical to treat a melody as though it its tonality exists in isolation from its accompaniment, but this is simply the way things were done. The seemingly illogical aspect was noted, with disdain, as early as 1767 by Andreas Sorge, who wrote: "Our good ancestors composed melodies without questioning the harmony from which the melody must arise…. if it happened that those tones [accidentals] which the key required according to the law of nature could be introduced in the middle voices, it was good, and they were satisfied if only the melody could remain within their paltry limits [set for the

modal scale].” (Sorge’s words are given here as translated by Lester, *Between Modes and Keys*, 159, including editorial clarifications.)

[60] The prevailing modern attitude is discernible in Prout, who asserts for example that when the answer is in the dominant, its counterpoint is in most cases in the same key: “Were it otherwise… the music would be in two keys at once.” (*Fugue*, 23.) Prout is strongly inclined to analyze the melody and its counterpoint as an inseparable whole—although when dealing with the subject’s initial, unaccompanied appearance, he of course has no choice but to analyze it by itself.

[61] Compare Prout’s discussion in *Fugue*, 7 (¶29).

[62] For example, Charles Masson (*Nouveau Traité*, 104-5) advises that the first note should be the first or fifth scale degree, more rarely the third; the same three notes should also be used consistently on strong beats. Others such as Johann Baptist Samber (See Walker, *Theories*, 270-1) and Rameau (*Treatise*, 352-3) counsel similarly regarding the closing note.

[63] Prout, *Fugue*, 7.

[64] Pedneault-Deslauriers, “The French Path,” has the most detailed discussion that I am aware of on this topic. A brief but fascinating discussion of “Dorian” signatures in Bach is in Lester, *Bach’s Works*, 13-5. Powers’ “From Psalmody to Tonality” provides further important background on historical precursors to such practices.

[65] One should be careful to examine the whole melody, not just the beginning. Otherwise, a subject such as Table 1, fourth subject (Handel), would appear to be in E minor. That subject heard in full reveals itself to be in B minor. That happens to be a fugue with a key-changing answer, but the subject can be construed as in the tonic.

[66] Walter Atcherson, in “Key and Mode in Seventeenth-Century

Music Books," *Journal of Music Theory* 17 (1973): 210, writes that by the seventeenth century, "the eight church modes… were in effect keys." It is not hard to find similar sentiments expressed by modern scholars. What may be more surprising is that they sometimes come even from (later) composers of that music ostensibly based on the *toni*. The "eight modes or tones can be reduced to four by their finals, or even to two based solely on the difference between the major and minor third": Guillaume-Gabriel Nivers, *Dissertation sur le Chant Gregorien* (Paris: the author, 1683), 105. Both the above quotes, however, elide certain complications when read out of context. For purposes of this study, as I have suggested, I needed to decide which works should be excluded from its scope. One class I chose to exclude is fugues (of whatever date) with titles or numberings relating to "Phrygian" or "mi-" tonalities, or behaviors clearly suggestive of such. Although one can debate whether the Phrygians are "true," independent tonalities, or perhaps simply A minor, the fact is that these mi-fugues tend to utilize distinct contrapuntal customs not common in other fugues. This phenomenon has been dubbed "the survival of the *mi*-tonality" (Powers, "From Psalmody to Tonality," 333), and in fact manifests itself well into the eighteenth century. It is therefore safer to set aside these mi-fugues for a study focusing on fugal procedures more generally. (This is a separate issue from the use of ♮2 ♭ *as chromatic note* in music clearly of the minor mode, as in the first fugue of Bach's Mass in B minor.) Another class of fugues I have excluded is those by composers historically known during the early eighteenth century to have advocated a return to "modes." Lester discusses these figures, such as Franz Murschhauser, in *Between Modes and Keys*, 59 and 119-148. The fact that these composers may "sound" tonal to me personally, has been treated as irrelevant, because it is

at least conceivable that they used answer-procedures not intended for tonal music. Many, perhaps most fugal norms developed for “modes” are applicable to “keys,” but not always. I caution that in a study on fugue it is almost impossible to expunge every example having any conceivable influence from pre-tonal systems. Composers such as Buxtehude and Fischer, cited liberally here, appear to have utilized aspects of mode in tandem with major-minor tonality, such that the results are often reconcilable with both. I’ve excluded any examples that appear in my judgment as though *specifically* influenced by pre-tonal systems.

[67] See note 60.

[68] Following are some statistics about examples from this page to the end of the key-retaining answer section. Note, however, this excludes the tables, all of whose examples are either not “real-life” excerpts, or, in the cases of Tables 1-2, pertain to a discussion explicitly covering both “key-retaining” and “classical” answers. Of the remaining examples—the actual “examples”: • *Forty-seven* are tonic-key even by the strict definition (accompaniment is also tonic-key. These consist of Exx. 8, 10, 12-14, 17, 18, 19b, 21-3, 25, 26, 27a-d, 28, 30-3, 35-41, 43, 46-51, 53-6, 58-64. Note, of these, twelve can be considered tonic-key not only through the end of the exposition, but the end of the fugue, when it has a definable end. These twelve are Exx. 12, 14, 21, 27a-c, 30, 37, 38, 50, 53, 64.) • *Six* examples meet only the weaker definition of “tonic-retaining”—subject and answer are in the tonic, but accompanying counterpoint may “stray” with accidentals. These six are Exx. 9, 19a, 20, 34, 52, 65. • *Nine* examples exist purely as theoretical exemplars to my knowledge, meaning there is no accompanying counterpoint to speak of, but the subject and answer consist only of notes in the tonic scale. These nine are

Exx. 11, 15, 16, 24, 28, 42, 43, 45, 57. To summarize: of the total examples, approximately three in four meet the “strict” definition of key-retaining answers; about one in ten meet the “weak” definition; the rest may satisfy either a strong and weak definition depending on one’s perspective. In my estimation, all sixty-three examples from Exx. 9 through 65 qualify as key-retaining answers, because they retain the tonic key reasonably well based on criteria used in the late baroque.

[69] Dandrieu, *Premier Livre*, 46. The movement belongs to a suite entitled “Pièces in G Ré Sol Mineur.”

[70] This is made further clear in the composer’s preface to the collection, in which he promises “six suites of different tonalities [*tons*], of which there are half in minor and half in major,” and makes no reference to the by-then mostly obsolete systems of modes or tones. Dandrieu, *Premier Livre*, 4 (not paginated).

[71] This is actually linked to the aforementioned issue of key. In the absence of *harmonic* criteria employed to ascertain the key, theorists would employ *melodic* criteria, compass foremost among these.

[72] Mattheson, *Capellmeister… translation*, 1156-7. Note, the key-assignment does bear on the answer. With the subject considered in G, there is no reason to expect a tonal answer. With the subject considered in A minor, the answer might well be tonal, because the leading phrase is contained in the fundamental fifth, and because the subject closes on the third of the dominant. These matters will be treated more fully further on.

[73] To my knowledge, the last fugue treatise to give any significant attention to compass as a factor in choosing an answer is Colet’s *Panharmonie* (1837), 234-5. Later texts that do address range usually do so in connection with the choice of a good subject, rather than its implications for the answer.

Tovey (see note 37) and Prout (*Fugue*, 32-3) are honorable exceptions, but each of these brief mentions is slightly misleading in its own way, the former by omitting to say that the beginning of the theme is the place where compass is really relevant, the latter by portraying the range issue as relevant only in the "modes."

[74] Oldroyd, *Technique and Spirit*, 64. Even a meticulous pedagogue such as Prout adopts a somewhat scornful attitude towards the old writings, including their rules about compass. "The old theorists mostly follow one another blindly, like a flock of sheep through a hedge; and examiners in general adhere to the musty rules of two hundred years ago," he writes (Prout, *Fugue,* 48). My point is not that he is incorrect; there is some truth to his statement. The problem is this—and a careful comparison of Prout's text with older ones reveals it—he has not fully understood what he is disparaging.

[75] One difficulty is that many of the earliest writings on the answer tend to assume the reader is familiar with modal theory, and does not need to be told that compass observance is an overriding issue throughout such theory. This tendency sometimes carries over into the earlier of the writings based on major and minor keys. Hence, one frequently reads assertions to the effect that a melody "makes a fifth," which leave unstated what the author really means—but what is not necessarily the same thing—that the melody *obeys and outlines the compass of* a fifth. Yet even this is necessarily enough. (Where and when does the melody do that? Again, often unstated.) The reader ends up forced to lean heavily on the examples because the text is too vague. Prout's observation in the previous note seems apropos here, and his failure to understand the "old rule," discussed shortly, and common by his time, rather understandable. For overviews of fugal-answer theories before

Bach, with citations to primary sources, see Walker's *Theories*, or Horsley, *Fugue*, 75-101.
[76] Langlé, *Traité*, 41. (Author's translation.)
[77] Martini, *Esemplare*, *2*:29-30. (Author's translation.)
[78] See Lester, *Bach's Works*, 65, or Walker, *Theories*, 319, 322.
[79] In order to leave more space for "real-life" examples, I omit the three theorists' own examples here. Martini's two basic examples of tonal fugue are in *Esemplare*, *2*:29. Langlé's examples, totaling slightly over twenty, are in *Traité*, 41-47; note however that his Ex. 32 is meant by him as an illustration of what not to do, whereas his Ex. 34 breaks his own repeatedly stated (see note 155) compass rule and is quite out of the norm (see note 81). Mattheson's eight examples for the old rule are on in *Capellmeister… translation*, 1135-37. Mattheson does not use the term "old rule" (or "tonal fugue," its Martini-Langlé equivalent); he speaks of "regular, pure reiteration[s]" or answers, as opposed to freer kinds of answers.
[80] Mattheson, for example, indicates that a tonal answer is not required where the subject commences by outlining a sixth from the tonic, whether up or down or even in reverse: *Capellmeister… translation*, 1143 footnote, 1161, 1178. He does not discuss themes wider than a sixth in this regard, but this may be because he discourages wider subjects in general: Ibid., 1198. Mattheson even goes as far as to suggest, though not very clearly, a theoretical justification for real answers in such situations. "If the melody of the subject extends further [than the fourth or fifth], then the answer cannot possibly observe the bounds of the octave. Common sense teaches that." *Capellmeister… translation*, 1146. Since he does not prohibit these wider subjects, his point appears to be simply that a tonal answer, or the type of tonal answer geared at

preserving the octave, is of no use for them.

[81] One source reflecting the “live” practice in a telling way is Marchant, *Five Hundred.* This compendium includes sections titled: “Real Subjects that reach the Dominant through the sixth of the scale”; and analogously, “…through the second of the scale.” These subject types appear to be singled out to demonstrate a purported norm that they receive real answers (“The dom… approached through 6th of scale, the answer is real.” Ibid., 50). But it turns out that the choice of real answer is more easily attributable to the fact that the opening motifs exit the characteristic range (as occurs in almost three-fourths of the subjects in these chapters), than to the $\hat{6}$ or $\hat{2}$ *per se*, which do not preclude subjects from having tonal answers elsewhere in the book, as in divisions VI through IX. Theoretical texts also support my contention regarding the role of ambit in the choice of answer; but for this purpose it is better to consult early texts, modern ones tending to show uncertainty on the issue (see also pp. 23-4). Well over 50 examples of tonal answers are found in a group of the eight or nine earliest theoretical treatments discussing altered answers of which I know, dating from the late renaissance to 1660. But only about two of these answers are for opening motifs (a separate discussion will be made for *complete subjects*) that breach the characteristic fifth or fourth, and these involve rather distinct techniques, used for different reasons, treated further ahead. See Pietro Ponto, *Dialogo* (Parma: Erasmo Viothi, 1595), 55-6, gallica.bnf.fr; Gio. M. Nanino and Gio. Bernardino Nanino, “Regole di Contrappunto” (unpublished manuscript, n.d. [1606?]), 12, bibliotecamusica.it; Girolamo Diruta, *Seconda Parte del Transilvano* (Venice: Alessandro Vincenti, 1622 [original ed. 1609]), Book III, 12 and Book II, 24-36, imslp.org; Adriano Banchieri, *Cartella Musicale*, 3rd ed. (Venice: Giacomo

Vincentini, 1614), 111-35, imslp.org; Marco Scacchi, *Cribrum Musicum* (Venice: Giacomo Vincentini, 1643), httpdiglib.hab.de; Jean Denis, *Treatise on Harpsichord Tuning,* trans. Vincent J. Panetta Jr. (Cambridge: Cambridge University Press, 1987 [orig. 1650]), 86-93; Christoph Bernhard, *Tractatus compositionis augmentatus*, ed. Bernhard Lang (n.c.: Bernhard Lang, 2009 [original ed. c. 1660]), 32-36 [Chapter 45], fdokument.com or bassus-generalis.org; and Walker, *Theories*. One reason for early writings' disinterest in "compass-breaching" motifs may have been that students were not encouraged to create them anyway, as alluded to sometimes (e.g. Diruta, *Seconda Parte*, III:12; Denis, *Treatise*, 87; Walker, *Theories*, 145). Another, often not clearly specified but implied e.g. in Mattheson, *Capellmeister… translation*, 1146 (¶48), may have been that tonal answers for these would fail to achieve what was then seen as one of their chief purposes, "completing" an octave.

[82] Fischer, *Sämtliche Werke*, 82.

[83] Tonal answers of some kind might be called for depending on what happens later in the subject. This fact gave me pause as I created the table, because I don't wish to cause confusion by appearing to fault answers that are in fact sometimes possible. I therefore selected the examples carefully. In most of these cases, any tonal answers, even if called for, would probably look different from the table, leaving octave leaps unaltered for instance. The only answer for which I personally see no musical or theoretical barrier, in the modulation scenario, is the third one, but even for this I know of no repertory-examples, probably because of a disinclination to use seventh-leaps in the early eighteenth century. Brossard claimed they were prohibited ("deffendus"); see Brossard, *Dictionnaire*, s.v. "Settima." In Bach's cantata *Es ist euch gut, daß ich hingehe*, BWV 108,

there is an apparent case of a major seventh answering a sixth; but it is a second answer, and “irregular” in terms of subject-answer distance. See *Bach-Gesellschaft Ausgabe*, 23:215-6.

[84] Sources of Table 2 are as follows. The first subject-answer pair is from Langlé, *Traité*, 43 (no. 34). Langlé here contradicts not only his own rule of two pages earlier in his book, but also the weight of the repertory: subjects commencing  , then dropping directly to  , usually receive real answers, as Nalden observes (*Fugal Answer*, 38, though I disagree with some of Nalden’s details). The fourth subject in Table 2, in D major, is quoted in Prout (*Fugue*, 37, ¶94b); and in fairness, Prout does *not* support a tonal answer—however, he erroneously states “the old text-books” would demand one (*Fugue*, 36, ¶92), precisely the misunderstanding I hope to dispel. (The hypothetical answer below the subject is not by Prout. It is furnished by myself as an illustration of what would seem to be the least unlikely answer if it did have to be tonal. Gédalge favors this kind of solution: see *Traité*, 33, (e). Bach as suggested gave a real answer.) The second, third, fifth and sixth subject-answer pairs are from Gédalge’s tables or rules, sometimes at a different octave register than shown here. Respectively, they can be found in *Traité*, 36 (third from top); 25 (fourth from bottom); 26 (diagram at top allowing the reader to build subjects and answers by choosing notes); 52 (penultimate.) The overrepresentation of Gédalge in Table 2 does not mean he was more misguided than other theorists, only that he chose to illustrate the same misguided “rules” with greater specificity. Several other scholars might be named. As for Gédalge, one might argue the shortcomings of his answer-rules must be excused on grounds that the scholastic fugue of French pedagogy is “admittedly fictitious,” in Tovey’s words. (*A Musician Talks,* 26.) However, it is sufficient to excuse Gédalge

on grounds that his efforts were sincere, without invoking the above argument, which I see no reason to accept, based, at least, on my reading of Gédalge's preface (*Traité*, 1-5), which gives me the impression that in most areas of fugue, Gédalge intended, like his contemporaries, to base his rules on the "masters," including Bach.

[85] To be considered adherent to the compass-exchange norm, a subject and answer need not literally be in the same octave: it is sufficient that they could be *made* to inhabit the same octave by displacing one thematic statement or the other by an octave, or octave multiple.

[86] See Horsley, *Fugue*, 75-82, and note 92 below. While this tendency was most pronounced among writers espousing "modal" principles, it was not unique to them. For example, Purcell's theoretical writing is based in major and minor keys, but when it comes to tonal answers, touches only on those kinds whereby successive statements immediately leap by a fifth and a fourth. See Playford, *Introduction*, 107ff. However, for some writers, not only one initial motion by fundamental interval, but also a directly subsequent one could be appropriately answered tonally. On this view, for example, A-D-A would answer D-A-D.

[87] Albrechtsberger, *Collected Writings*, 158. Incidentally I cannot share Albrechtsberger's view that this subject and answer would normally be considered reversible. I am unaware of any examples of late-baroque "masters" altering an opening octave leap; even later the the subject it is uncommon. With certain caveats to be discussed, the norms about perfect intervals in Higgs, *Fugue*, 33, are accurate.

[88] Michael Haydn, *50 Kleine Orgelstücke*, 3.

[89] Händel, *Werke*, 2:99.

[90] Fischer, *Sämtliche Werke*, 120.

[91] See p. 10 (Mattheson quotes) and pp. 21-22.
[92] These terms, thought to date back to about 1660 or 1670 respectively, reflect the ways in which theories of the tonal answer were originally connected to modal doctrine, though that link was mostly severed by a century later. Walker discusses these terms in *Theories*, 152-64, 175, 223-5. It might be added that for some, violation of the compass-exchange norm was tantamount to leaving the mode (or later, key, as suggested in the Mattheson quote on p. 10), even if no accidentals were introduced. On the other hand, it was sometimes argued that this was less objectionable if the entries could be somehow configured as to make the "deviation" inconspicuous to the ear.
[93] As Masson (*Nouveau Traité*, 109) writes: "One must take care that the semitone [in the answer]… is found on a similar note on which it is found in the first part [the subject]; that is, that if the semitone is found in the first part at the third note, it must also be placed at the third note in the second part [the answer]." But Masson himself applies this rule flexibly: several of his exemplars answer a minor second with a minor third, or vice-versa. We might infer that the broader principle Masson wishes to convey is preservation of intervallic *quality* rather than of half-steps specifically; or equivalently, that the subject and answer be separated by a perfect interval as often as possible. Fux writes that the answer must exhibit "due regard for... the position of whole- and half-tone steps." See Mann, *Study of Fugue*, 80. Other late-baroque theorists do not explicitly cite this rule but instead reproduce the subject-answer chart found in our Table 3, whose observance in major would guarantee similarity of intervallic qualities between subject and answer.
[94] Nalden's term is "free exchange of tones and semitones." He

notes accurately that preservation of the tonic key is a usual consequence. See Nalden, *Fugal Answer,* 46 and 177. Prout's term is "disregard of semitones"—*Fugue*, 62.

[95] "By the late Baroque the variety and complexity of the subject had reached a level which seems incredible when one compares the rudimentary 'points' of the late Renaissance." Bullivant, *Fugue*, 43; also, 63-5.

[96] Ibid., 36, 184.

[97] Among these are Rameau, *Traité*, 332-41; Mattheson, *Capellmeister… translation*, 1127-81; Masson, *Nouveau Traité*, 103-112; and Marpurg (translated in Mann*, Study of Fugue*, 164-75). See also note 102 regarding writings of Wolfgang Caspar Printz.

[98] This of course embodies the "tonic-dominant polarity so important to later Baroque fugue" (Walker, *Theories*, 79), which "assist[s] tonality by causing stress on the tonic and dominant notes at the outset" (Bullivant, *Fugue,* 22.)

[99] "… Taking the subject for the answer, and the answer for the subject… is, in this and many other cases, indifferent." Choron, *Principes*, 4:22.

[100] Not all key-change theories are identical, of course; but it is hard to see how Prout's, to take one important theory, would prescribe anything other than a real answer, for the subject neither begins on $\hat{5}$, nor modulates, nor opens with a leap to $\hat{5}$ either directly or through the mediant. Prout, *Fugue*, 19.

[101] Walker, *Theories*, 263.

[102] Printz proposed the system in connection not with major or minor but for "regular Ionian," as he called it. He used note-letter names rather than numbers. (Walker, *Theories*, 261ff.) Thus my use of the chart does not reflect Printz's usage so much as the practical realities of its later usage. It saw republication for about a century after its creation, mostly in

connection with major and minor (see also Horsley, *Fugue*, 94). The attribution of the method to Printz is based on second-hand information: the anonymous compiler of a manuscript in the Deutsche Staatsbibliothek, Berlin, call number Mus. ms. theor. 1595, ascribes it to him. (See Walker, *Theories*, 261.) Printz appears to have authored the chart between about 1696 and 1703, from when he stated an intention to write a study on fugue, now missing but consistent with this material, to when it became incorporated into a manuscript attributed to Johann Kuhnau. See Walker, *Theories*, 399 (note 127) and 259-64. Recently, the compiler of Mus. ms. theor. 1595 has been named as Christian Demelius, cantor in Nordhausen, though I do not know on what basis. See Stephen Rose, *Musical Authorship from Schütz to Bach* (Cambridge University Press, 2019), 52, books.google.com.

[103] Walker, *Theories*, 262.

[104] The commencement on $\hat{2}$ in Ex. 16c is an unusual gambit not sanctioned by the traditional rules. However, as Prout writes, if an opening dominant "was an unaccented note of small value, a real answer was sometimes allowed," meaning the answer would start on the dominant of the dominant. (*Fugue*, 41, footnote; Ibid. 42-5 for quotes of answers starting on $\hat{2}$.) Even in this paper, in the sixth subject of Table 1 (p. 24), Bach's real answer commences on $\hat{2}$.

[105] "All instructions are good; yet the power of judgment of the composer must always do the greatest part." Mattheson, *Capellmeister… translation*, 1145.

[106] Bullivant, *Fugue*, 63.

[107] Printz proposed two more charts, one each for the Dorian and Aeolian modal scales (Walker, *Theories*, 262). Some might consider these useful for minor—Mattheson reproduced the Dorian one—but I will not use it. They do not address modern

minor, nor were they consistently cited by later theorists. Also, the Dorian and Ionian charts were very similar, so a certain redundancy exists. I follow theorists such as Marpurg (see Mann, *Study of Fugue*, 164) in reproducing the “major” or Ionian chart only. Suggestions for adapting it to minor can be given without a new chart.

[108] Telemann, *Orgelwerke*, 146.

[109] Muffat, *Denkmäler*, 58:16.

[110] Bullivant, *Fugue*, 63-4.

[111] *Capellmeister*, 374, or *Capellmeister… translation*, 1142-4. Mattheson repeats an exactly analogous chart on every note of the chromatic scale, with one exception: the chart for G unexplainedly has one extra possibility, allowing $\hat{6}$ ♭ to be answered by $\hat{3}$ in minor.

[112] One problem is that in minor, the chart requires $\hat{6}$ ♭ to be answered by $\hat{2}$ ♭ (or “ $\hat{1}$ # ” depending on how Mattheson notates the accidentals). But $\hat{2}$ ♭ is a chromatic note in minor or major tonality, seldom introduced without special handling. The chart fails to account for this, or for the fact that the more normal answer for $\hat{6}$ ♭ in minor is $\hat{3}$.

[113] The easiest way to see this is as follows. Let us refer to Mattheson’s chart for the octave on D. (*Capellmeister*, 374, or *Capellmeister… translation*, 1142). Then, delete every instance of D# and G# from the chart, because these are not really part of any tonic scale on D. (There can be little objection to this experiment, given Mattheson’s own statement that “the diatonic species… reveals the foundations of the matter.” See *Capellmeister… translation*, 1140). With these two notes deleted, Mattheson’s chart will be found to be identical to the “major” Printz chart, except for two modest differences. First, that $\hat{3}$ and $\hat{7}$ may exist in either raised or unaltered guises,

though as scale degrees they continue to answer each other. Second, that 5̂ can be answered by 2̂. We have already discussed both of these points (see the top of the paragraph that gives rise to this note, and Table 3, no. 3).

[114] See also *Capellmeister… translation*, 1132-3 and note 112.

[115] Another difficulty is that Mattheson's chromatic chart fails to exploit what is perhaps the only option that arguably *does* make the minor mode easier (and that was in fact commonly used): namely, letting 7̂ ♮ and 4̂ answer each other. Curiously that option appears in the "Dorian" chart reproduced by Mattheson (*Capellmeister… translation*, 1140), but not in his chromatic charts. Indeed this points to another issue: the theorist has provided conflicting charts!

[116] A well-known statement of this principle comes from Fux: "As the number of voices increases, the rules are to be less rigorously observed." Mann, *Study of Fugue*, 139. Prout follows the same principle, e.g.: "Greater freedom is allowed in less important details when working combined counterpoint, because of its greater difficulty, than would be permitted in simple counterpoint." (Prout, *Counterpoint*, 160.)

[117] Right now, we are not trying to resolve every question about minor-key answers. We are simply trying to ensure that our understanding of minor is not worse than our understanding of major. That way, later sections of the study can deal with both.

[118] Although this cannot be called common, an example is the fugal accompaniment to the song "Sie Stellen Uns Vie Ketzern Nach" in the cantata *Wo Gott der Herr nicht bei uns hält*, BWV 178, in *Bach-Gesellschaft Ausgabe*, 35:259. Further on in this paper, additional Bach examples will be mentioned. After the Bach era, cases of direct 7̂ ♮- 8̂ become harder to find in the repertory; still, Marchant in *Five Hundred*, 60, quotes a few from post-Bach generations (see nos. 339 and 340—the key

areas marked as “tonic”). *Five Hundred* also quotes some late examples containing figures readily characterizable as 7 ♮-5 -8 answering 3 -1 -5 .

[119] As Elwart put it, “the third of the principal key would find itself rendered temporarily major, which would throw a great perturbation into the general tonality.” Even so, he was not willing to reject this option entirely. See *Contre-Point*, 81.

[120] Rameau, *Traité*, 339: “Sometimes we may even add a sharp to the mediant of minor keys… when it corresponds to the leading tone [in the subject].” Mattheson’s “expanded Printz chart” also allows this (see note 120). We may also cite Masson (Ex. 25), and for an older (1650) reference, Denis, *Traité*, 31, penultimate example. While this employment of 3 #, specifically as a *fugal* usage, appears to have gained currency around the first half of the seventeenth century, it effectively continues an older practice. In sixteenth-century works based on “minor modes” (authentic and plagal “Dorian,” “Phrygian” and “Aeolian”), a raised third over the final, even outside of cadences, is among the most common notated accidentals; perhaps, based on my preliminary inquiries, substantially more common than the raised fourth, an interesting comparison for our purpose. I examined all “minor-mode” works in two of the earliest published collections (1540s) with “modal” labels added apparently at the composers’ behest: Rore’s *Madrigali a Cinque Voci* and Zarlino’s *Musica Quinque Vocum.* The same procedure was carried out for Lassus’s (1565) *Psalmi Davidis Poenitentiales*. Whenever any raised thirds or fourths were present, the former outnumbered the latter in all but one of these twenty-five works. The disparity was strongest with “Phrygian” modes, but affected all “minor modes,” usually even after discounting section-ending raised thirds (i.e., “ordinary”

Picardy thirds). Then, "3 #" still outnumbered "4 #" around fourfold in total, a factor that dropped to about 2.4 if "Phrygians" were disregarded. One interpretation of this finding is that composers perceived the raised third as relatively compatible, or at least not incompatible, with the "mode." An analogous perception may have later carried over into minor keys. See Gioseffo Zarlino, *Motets from 1549*, ed. Cristle Collins Judd, 2 vols., (Middleton, Wis.: A-R Editions, c2006-2007), and Orlando di Lasso, *Seven Penitential Psalms with Two Laudate Psalms*, ed. Charlotte Smith, (Newark: University of Delaware, 1983), 15-168. Rore's madrigals were downloaded from cpdl.org due to a lack of authoritative modern editions known to me. Lasso's set exists in various scholarly editions that differ as to accidentals, apparently because there is more than one primary source. I chose among editions available to me the one for which I could best verify the accuracy. It does not appear that using other editions would fundamentally change the outcome.

[121] For example, Mattheson in *Capellmeister… translation*, 1134-7 (¶35-6) illustrates eight subject-answer pairs whose answer-procedure in his view "best agrees with the key." In three of these, one thematic statement ends with progression from the major sixth of a minor key to its dominant (subject no. 4, answer no. 5 and answer no. 7), but Mattheson gives no indication that he perceives the key of the dominant there. See also note 293.

[122] Bach, *Bach-Gesellschaft Ausgabe*, 36:84.

[123] Buxtehude, *Orgelwerke*, 2:128. A rather similar subject and answer can be found in "Christ Unser Herr Zum Jordan kam" by Johann Pachelbel. Pachelbel, *Orgelkompositionen*, 78.

[124] A problem is that in modern tonality, introducing 2 ♭ as a chromatic note generally also implies using 7 # soon afterward. See Aldwell and Schacter, *Harmony*, 456ff. Then,

the conundrum becomes this: how the other thematic statement is to imitate both notes, without leaving the tonic key. Indeed, to my way of hearing, and as I would expect, I am not aware of any fugues that are able to do this. In theory, certain kinds of tonal answers might solve the problem, but in practice it is rarely done. It might sometimes cause further confusion as to what key is being heard.

[125] No theorists to my knowledge explicitly make a distinction between $\hat{3}$ # and $\hat{4}$ #, saying the first is permitted in the fugal theme whereas the second is not. Baroque theorists' attitudes toward accidentals are inconsistent: some prohibit all of them, others introducing some accidentals in their exemplars while somewhat downplaying their presence. (Mattheson, for example, writes at one point: "So far in our discussion we have only dealt with the diatonic species since that reveals the foundations of the matter." But a few of his preceding examples of fugal themes are actually not diatonic. See *Capellmeister… translation*, 1140 and 1134.) Since baroque theorists did not exhibit a clear consensus on which accidentals were to be considered out-of-key, I must make that judgment myself. Readers may reasonably wonder why I opted to include $\hat{3}$ # but exclude $\hat{4}$ #, rather than, say, doing the reverse, or including or excluding both. There are a few reasons. One is that the use of $\hat{3}$ # as the answer to $\hat{7}$ # is reconciliable with the Printz chart (p. 32). As we will see, that chart tends to be followed for certain "strategic" and prominent notes of the theme, which include tonic-triad notes subject to certain conditions. (See also note 62). Hence, an allowance for $\hat{3}$ # proves more useful than an allowance for $\hat{4}$ #, which can be dispensed with as long as we are not interested in modulating. These observations are not purely theoretical, but fairly well reflected in the "late pre-classical" fugal repertory.

One tends to find $\hat{3}$ # used in the manner described, though there are exceptions, usually in less conspicuous positions, where $\hat{4}$ # is taken instead. (These might be called comparatively early cases of “key-changing answers.”) A second line of reasoning is that the leading tone itself is “borrowed” from the parallel major (see Aldwell and Schacter, *Harmony*, 362). So it does, in some way, make sense to answer it using another sound borrowed from the parallel major, as opposed to $\hat{4}$ # , which would presumably be “borrowed” from a third tonality, the dominant, or perhaps a theoretical Lydian mode. To be clear, all these comments are contingent on the premise that we do in fact wish to retain the tonic key as much as possible in the answer; but that is indeed the premise of this section of the paper.

[126] Purcell, *Ten Sonatas*, 36.

[127] Jacquet de la Guerre, *Sonates,* 28.

[128] Mattheson, *Doits,* 23

[129] Rameau, *Traité* 339 and *Treatise* 352.

[130] Masson, *Nouveau Traité*, 112.

[131] They also have not been made the basis of a comprehensive theory before. The three categories are implied in the statement by Green quoted on p. 9 above. From it, we might infer there is a class of subjects contained in a fundamental fifth or fourth; and another important class whose *leading phrase* is so contained. These classes correspond to our first and third categories. Had Green mentioned only one more class—“*all other* subjects”—this would have corresponded to our second category. It can also be noted that our first category corresponds reasonably to what Langlé calls “subjects of tonal fugue” (Langlé, *Traité*, 41-2; although perhaps somewhat confusingly, one discovers starting from his Ex. 31 that many subjects failing to meet his definition of

"subjects of tonal fugue" are tonally answered anyway.) Horsley (*Fugue*, 84) mentions a class of subjects that could be interpreted as corresponding to our second category: those for which, in fugal-answer theories under tonal harmony, "the principle of transposition [e.g. Prout's tenets quoted on our p. 4] applied to the whole of the subject" without an extra adjustment at the open.

[132] This term should not be confused with the term "lead-in" as used in the context of phrase rhythm by William Rothstein in *Phrase Rhythm in Tonal Music* (New York: Schirmer Books, 1989) 51-2. I think confusion is unlikely because fugue subjects are seldom long enough to include the latter type of lead-in. In any event, for the fugal context it is difficult to find a better term, because several designations with overlapping but distinct meanings have already been used (e.g. "head," "attacco," even "subject of tonal fugue,") all of which would cause severe confusion were I to adopt them.

[133] Some additional specimens are Exx. 11, 12, 24 and 26.

[134] One example, with subject $\hat{5}$ -$\hat{8}$ in A minor, is in Rameau, "Adoration du Soleil," in *Les Indes Galantes* (Paris: Boivin, n.d. [1736]), 157. On the theoretical front, Langlé is not the only scholar to regard these two-note themes as "subjects": see also Cherubini, *Treatise*, 66 ("On Tonal Fugue"). To be sure, extremely short subjects were rare in the late baroque compared to the renaissance. See Bullivant, *Fugue,* 36.

[135] "One may well, through notes inserted into these four motions, vary these fugue subjects, but ultimately they all reduce themselves to these four motifs." Langlé, *Traité*, 41. Others describe a not dissimilar expansion process (e.g., Cherubini, *Treatise,* 66) but with differences of detail. This study adheres more closely to Langlé's conception as just quoted.

[136] "This kind of fugue… must remain and complete its cadence

in the key of the fugue. … the intermediary notes are by no means supposed to interrupt the motion by fifth or fourth…" Langlé, *Traité*, 44.

[137] Baroque theorists did not have any agreed-upon term for what I call the "lead-in." Instead, they generally contented themselves with describing the subject, not always as clearly as one would wish. What the theorists did have terms for was the answer-procedure closely associated with these subjects (see note 92).

[138] Characterizing the same kinds of themes defined here as lead-ins, together with their answers, theorists have used terms such as "regular, and perfect" (Bononcini); "masterly" (Purcell); and and "regular, pure" (Mattheson). However, all three authors also apply the same descriptors for themes that add some further material *after* an initial portion fitting the definition of a lead-in. Evidently, lead-ins were not recognized as a separate category (see previous note). However, it is perhaps not insignificant that in the Bononcini and Purcell cases, the first fugue illustrated under these adjectives uses a lead-in subject fitting our narrow definition, i.e. the subject ends immediately after the sounding of both dominant and tonic or final. See Giovanni Maria Bononcini, *Musico prattico* (Bologna: Giacomo Monti, 1673), 83-4; Playford, *Introduction*, 106-7 (for Purcell); Mattheson, *Capellmeister… translation*, 1134-7. See also Walker, *Theories*, 197 regarding Johann J. Prinner's comments. There were, of course, always those who preferred real answers. One entertaining attack on tonal answers, painting them as unattractive, outdated and a source of trivial debates, can be found in the anonymous review of *Esemplare,* Vol. 2, by Martini, in *Efemeridi Letterarie di Roma*, Vol. 5 (Rome: Libreria al Corso dell'Insegna d'Omero, 1776), 300, books.google.com.

[139] Two early, tonally answered melodies with "lead-in-like" structures—florid and "undecorated," respectively—are: (1) Josquin DesPrez, *Ave Verum a 3*. Edited by Luigi Cataldi. Cataldi: 2001. cpdl.org. (2) Guillaume Dufay, "J'ay mis mon coeur." In *Dufay and His Contemporaries*. Edited by John Stainer and C. Stainer, 156. London, Novello, 1898. archive.org. (With text "En chascun lieu.") Note, terms such as "tonal answer," "subject" and even "fugue" can be considered anachronistic as applied to such early works.

[140] Playford, *Introduction,* 107.

[141] Martini, *Esemplare*, 2:13.

[142] Muffat, *Missa in F et C*, 25.

[143] Krieger, *Complete Organ & Keyboard Works*, 2:55.

[144] See Mattheson's quotes on p. 10. Similarly, Purcell in Playford, *Introduction*, 107 writes that a fifth is answered by a fourth "because it relates more to the key" than a real answer.

[145] Besides the argument for this suggested in the main text, note too that reproducing a tonic-key subject "in the dominant key… would not of itself entail any modification." Morris, *Structure of Music*, 93.

[146] See also Prout's remarks, note 38.

[147] "This genre of fugue is not as rich in subjects as that of *real* fugue; on the contrary it is very circumscribed…" Langlé, *Traité*, 41. See also notes 135-4.

[148] Ibid.

[149] It is worth recalling that the use of 4̂ # other than as a chromatic passing tone would normally be considered a foreign note. See e.g. Prout, *Counterpoint*, 218, ¶525. Moreover, the choice of whether to include or exclude 4̂ # sometimes has "downstream" effects that may affect other notes in the answer, as well. Therefore this decision marks a substantial difference between key-retaining and key-changing answers.

[150] Table 6 is not meant to suggest that a tonal answer should be used in every case, but only to suggest the most customary tonal answer, *if* a tonal answer is used. The text explains further. The table draws on older sources. Between the Printz chart and Langlé, *Traité*, 42, or similarly Masson, *Nouveau Traité,* 106-8 or Rameau, *Traité*, 333-4, one can find everything in the first three "measures" of Table 6. The next three come from my observations of the repertory. The last is a motif, similar to the opening of the chorale theme "Vater unser im Himmelreich," which (perhaps for that reason) became rather popular as a fugal opening, in many slight variants. Several texts discussed the problem of how to answer this kind of theme. A solution like that in Table 6 was the eventual consensus, though some disagreed. See e.g. Mattheson, Walker, *Theories*, 240-1, 299, and Mattheson, *Capellmeister… translation*, 1148-9.

[151] See p. 32 for the Printz chart. Notice that the "template" in Table 6, first bar, embodies multiple possibilities, not one. With this accounted for, it becomes evident that the Printz chart accounts for the majority of the solutions in the table (and probably in the repertory, insofar as tonal answers are used at all).

[152] Changing a step to a third at the end is occasionally done if it is not an already previously begun stepwise motion.

[153] Certainly not in real-life fugues; whether one wishes to impose "rules" in pedagogical settings is a separate issue.

[154] Some students might even enjoy experimenting with Printz's charts for the Aeolian and Dorian "modes," and using these for fugues. To be sure, Printz's understanding of "mode" may well have been quite far removed from that of, for example, the renaissance polyphonists.

[155] A similar example by Bach, which I have omitted in part due

to length but which constitutes a nice “tonic-retaining” exposition, can be found in the motet “Lobet den Herrn, alle Heiden,” BWV 230. See *Bach-Gesellschaft Ausgabe*, 39:138.

[156] E.g., Masson, *Nouveau Traité*, 104-119; Mattheson, *Capellmeister… translation,* 1126 (¶17); Rameau, *Traité*, 335.

[157] Past theorists have given some conflicting advice on how to answer these notes. Some, such as Marpurg, assert that both are to be answered at the upper fifth (or equivalently, are to be regarded as in the tonic key. See Mann, *Study of Fugue*, 167.) But as far as $\hat{2}$ is concerned, Marpurg’s purported norm works only about as well as a coin toss; Mattheson offers a much more accurate one that is mostly equivalent to mine. See *Capellmeister… translation*, 1156-8. As far as $\hat{6}$ goes, both proposed norms are reasonably accurate—mine and Marpurg’s—but based on the repertory I reviewed, mine is slightly more accurate, and it spares one the need to remember different “rules” for $\hat{6}$ and $\hat{2}$. As of this writing I have a list of about thirty fugue subjects that begin or end on the $\hat{6}$, and approximately thirty-six that begin or end on $\hat{2}$.

[158] Although in some contexts the tonic is numbered $\hat{8}$, we can consider it an “odd-numbered note” for convenience. Baroque theorists typically suggested the outer notes should be $\hat{1}$, $\hat{5}$ or less often $\hat{3}$. See note 62. In practice, although theorists were slow to acknowledge this, the allowance for the mediant ended up implying a certain similar acceptance of $\hat{7}$, these two being conventionally “paired” as each other’s answers (see the Printz chart, p. 32). Accordingly, Gédalge would remark in his time that $\hat{7}$ can receive a “a rational interpretation that will permit a logical answer” (Gédalge *Traité,* 55-7, or *Treatise*, 56-7; ¶99.) For our purposes, therefore, we can consider all odd-numbered scale

degrees as normal for the outer notes, leaving only the even-numbered degrees 2̂, 4̂ and 6̂ as bona fide "unusual" presences in that position.

[159] Sometimes subjects ending 4̂ ♮-5̂ were answered with 1̂ - 2̂, to better replicate the tone-semitone pattern. This solution, used by the fugue cited in the note 155, is not only possible in key-retaining answers, but will later be seen to be the norm for key-changing answers, in which the same problem arises.

[160] Fischer, *Sämtliche Werke*, 83. See also Bach, *Wohltemperierte… Zweiter*, 46.

[161] Marpurg, *Abhandlung*, Tables, Table 17 no. 6. Marpurg also suggests an alternative answer touching on the key of the dominant. It is like our example except the first four notes are a tone higher.

[162] Muffat, *Missa in F et C*, 8. ("Patrem," no. 2.)

[163] *Zur Geschichte des Orgelspiels*, 185 (no. 109).

[164] Additional specimens are Exx. 24 and 26.

[165] Dandrieu, *Premier Livre*, 86.

[166] The accidental-avoiding tonal answer is a technique that eighteenth-century theorists do not by and large discuss very clearly. To some extent it has fallen to twentieth-century scholars to address it (although the earlier "key-change theory" does obviously imply avoiding certain accidentals). Nalden, *Fugal Answer,* 154, and Oldroyd, *Technique and Spirit*, 90 (second half of page), touch on answers of this type; they frame it as tonic-key-maintenance rather than accidental-avoidance, but in essence it is the same. In the baroque, the theorists who most explicitly discouraged accidentals were often those who advocated "modal" fugue. These included Fux and Werckmeister in the period around 1700. See Mann, *Study of Fugue*, 84, and Walker, *Theories*, 237-8. Early theorists

dealing with major-minor tonality tend to be less explicit about the preference for accidental avoidance, and sometimes more lenient. Still, these writers, including Masson, Rameau and Mattheson (see note 97 for page numbers), cite rules and exemplars that amount to accidental-avoiding tonal answers, while often not stating the reasons. It is difficult to avoid conjecturing that some writers left room for interpretation because they were unsure whether, or how to draw a line between "in-key" and "out-of-key" accidentals. Horsley (*Fugue*, 93) notes the "confusion, or perhaps better, freedom," that attended this period. Nonetheless about this time some of the first discussions of the exact pitch content of major and minor scales as such appear in the literature. See Lester, *Between Modes and Keys*, 104-7, and Pedneault-Deslauriers, "The French Path," 11-15.

[167] Purcell, *Twelve Sonatas*, 35. Incidentally, in Purcell's time it would not have been uncommon to answer the closing F-E with C-A; but his answer—making sure a closing step is answered with a step—is more in keeping with what would become the norm by Bach's time.

[168] Bach, *Bach-Gesellschaft Ausgabe*, 38:25.

[169] Walther, *Denkmäler Deutscher Tonkunst*, 9.

[170] Mattheson, *Capellmeister… translation*, 1179.

[171] Mattheson specially recommends themes whose "closing and beginning notes are unlike," meaning one is tonic and the other is dominant. This enhances tonal variety in his view (*Capellmeister… translation*, 1124). This opinion must have been common, because many later baroque fugal themes do just that. When one further condition is added—limiting the range to a sixth, suggested to avoid voice-crossing and straining singers (ibid., 1198-9)—then, as it turns out, only so many subjects can be built this way before the listener begins to feel

that a stereotyped behavior is manifesting itself. Accordingly not a few of these subjects sound cliché.

[172] See note 158.

[173] One way to understand why is to observe that (in addition to, or because of, being tonic-triad members) ^1 and ^5 are sometimes described as tones of repose or stability. While theorists have debated just which scale degrees are to be considered most stable, most have agreed that ^1 and ^5 should be high on the list. Shirlaw gives an amusing resumé of the debate in *Theory of Harmony*, 462-3.

[174] Eberlin, *115 Versetten*, 5. To add a few words of clarification, this type of answer cannot be called an "accidental-avoiding tonal answer," as it does not in fact avoid an accidental. Still, I find it convenient to group it with the accidental-avoiding tonal answers, since it does not lack for resemblance to them, and like them, appears to presuppose that the answer is in the tonic.

[175] Although all four begin and end with ^1 , so that some middle notes are adjusted *downward* for the answer, there certainly exist analogous cases, albeit less common, that begin and end with ^5 with some middle notes are adjusted *upward.* See e.g. Muffat, *Missa in F et C*, 25 (no. 4 of "Et in Terra,") or Eberlin, *115 Versetten*, 12 (no. 2 of "Tonus Sextus.")

[176] There may be another reason why in practice ^3 # was more frequently treated as acceptable than ^4 #. As first or last note of the answer, ^3 # in minor (but not ^4 #) can satisfy the theorists' oft-stated advice to use a tonic-triad note. Once ^3 # was accepted as an outer note, it may have been difficult to find arguments against its use as an inner note.

[177] Bach, *Bach-Gesellschaft Ausgabe*, 3:205.

[178] DuMage, *Premier Livre*, 10.

[179] Chaumont, *Pièces d'Orgue*, 76.
[180] Muffat, *Missa in F et C*, 23. ("Kyrie," no. 2.) Muffat's apparent "borrowing" from Bach's work of about three years earlier should not be held against him, assuming Muffat was aware of it at all, which is uncertain. Bach and others frequently borrowed musical materials including fugue subjects. More relevant, the fact that Bach and Muffat concur on the basic form of the answer is helpful to the scholar attempting to establish norms. See Bach, *Wohltemperierte… Erster*, 82, and Alison J. Dunlop, "The Famously Little-Known Gottlieb Muffat," in *Bach Perspectives*, vol. 9, *J. S. Bach and His Contemporaries in Germany*, ed. Andrew Talle (Chicago: University of Illinois Press, 2013), 77-119.
[181] Marpurg, *Abhandlung*, Tables, Table 26 no. 15. No. 16, his next example, is an alternative answer that touches on the dominant key.
[182] Eberlin, *115 Versetten*, 5.
[183] Credit for norm (a) appears due to Henry Banister. He states it more broadly however: "all alterations must be made in *quitting* or *approaching* the *Tonic* or the *Dominant*," adding: "this may be verified by examining all the Answers in Bach's 'Das Wohltemperirte Klavier.'" (Banister, *Music*, 194, italics in original.) I verified Banister's statement as he suggested, to my satisfaction. I then opted to examine a larger repertory, because there is a dearth of documentation around some of these findings. I studied how often both norms (a) and (b) were simultaneously observed (including the condition in parentheses in 'a,') in all surviving keyboard fugues that I could obtain by Bach and seven of his close predecessors or contemporaries of the German or northern European organ school, most of whom have been recognized as influences on Bach: Buxtehude, Böhm, Bruhns, Fischer, Pachelbel, Reincken and

Walther. (See bibliography. I disregarded fugues employing "mi"-tonalities because there is no consensus on what scale degrees if any correspond to the tonic and dominant. See note 75. I also excluded most chorale and incidental fugues: these tend to be less informative because they include many real answers and works of ambiguously "fugal" character; nonetheless, I examined these for the writers with smaller surviving outputs, Böhm, Bruhns, Reincken and Walther.) In this assessment, which must be considered preliminary, I found an accuracy rate ranging from eighty-seven percent to one hundred percent, depending on the composer. (About ninety-seven percent for Bach; above ninety percent for all but Reincken). This finding cannot remotely be attributed to chance. The accuracy still held up, only slightly more weakly, even when discounting all mutations placed directly after the first pitch (since is the most common way alterations appear next to a non-passing tonic or dominant). Banister's norm is repeated by MacPherson (*Studies*, 105). Prout however rejects it, ill-advisedly in my view: see Prout, "Fugal Structure," 156-7. Prout claims the guideline has too many exceptions; but Prout's own "earliest possible point" rule (*Fugue*, 51, ¶121) is almost surely less accurate, in unqualified form, than Banister's. In reality, both work accurately *in combination* as I show. Moreover, the two examples of purported exceptions cited by Prout in the above *Proceedings* paper, are dubious ones. In the first (Bach, BWV 137), it is physically impossible to follow Banister's norm, due to the absence of any tonics or dominants in modulation area. Where norms are physically or mathematically impossible to follow, they must obviously be waived. Prout's second example (Mozart, K 192) does have a tonic in the modulation area, but it is a passing note, and as stated in (a), it should be a "non-passing" note. Both of Prout's

examples, moreover, are “incidental” fugues, a type that, it has been observed, is likely to be freer than fugues-titled-as-fugues, or ricercars or the like. (See Bullivant, *Fugue*, 69 and 161.) It seems to me Prout must have worked rather hard to find these exceptions, because the compositions he cited are not absolutely central to the fugal repertory.

[184] Higgs, *Fugue*, 33: “perfect and imperfect intervals in the subject are each answered by intervals of corresponding character.” Like Banister’s rule, this is too broad (e.g. a minor seventh may well be answered by an octave), so I narrowed it to make it more accurate, bringing it closer to Walther’s formulation, paraphrased as follows by Walker: “the answering of seconds by thirds or fourths by fifths was permissible, but… thirds were not to be answered by fourths.” Walker, *Theories*, 266.

[185] Gédalge, *Traité*, 22, or *Treatise*, 19.

[186] This norm is not stated anywhere I know of, most likely because it is self-evident to most musicians: in C major, the close D-C would probably not be answered by G-G.

[187] This question addressed by this norm is whether it makes sense in certain contexts to answer, (let us assume in A minor), CDE by GG#A, or vice-versa. Although I have seen a handful of examples in theory texts that do this—clearly in order to either preserve a fundamental-interval compass, or ensure that the last note of the group manifests dominant in response to tonic—not one of these is attributed securely (or at all) to a composer of “real-life music.” Therefore, I must classify this kind of procedure as abnormal from the standpoint of actual repertory. The more common answer by far is a real one, even at the expense of the dominant-tonic correspondence, or the desired compass. (My personal opinion of which is the better solution is not at issue here.) A

noteworthy example of the “chromatic” procedure is cited in Prout, *Fugue*, 66, and attributed to Bach; however, it is today considered either a spurious or early work, BWV 947. See David Schulenberg, *The Keyboard Music of J.S. Bach* (New York: Taylor & Francis, 2006), 440. (books.google.com). Prout, even believing it to be by Bach, classifies it as an exceptional answer, justifiably.

[188] I say “real imitation” rather than “real answer” to clarify that not the entire answer, but only specific parts of it, are under discussion. As concerns the just-stated norm about the octave, the reader is referred to the Higgs quote in note 184; although his rule is erroneous in certain respects, as he appears to concede in *Fugue*, 33, it is accurate insofar as it predicts octaves are rarely answered by sevenths or ninths.

[189] See Gédalge, *Traité*, 18 or *Treatise*, 15 (¶40). As he puts it, one forgoes answering a dominant tonally if it is part of a sequence (“marche.”) This is really just part of a larger norm against mutating sequences.

[190] Prout, *Fugue*, 64.

[191] Although (iv) is my own formulation, its idea is not really new. It merely rephrases an older principle in a more limited and careful way. Namely, many texts have advanced the idea, not very well-defined, that V and I should answer each *as chords* rather than (only) as keys. “All the phrases… which belong to the chord or to the key of the TONIC should be repeated in the response in similar phrases belonging to the chord or to the key of the DOMINANT,” and vice-versa. (Cherubini, *Treatise,* 67). That such sweeping prescriptions don’t work is established effectively by Prout (*Fugal Structure*, 136-7). Nonetheless they do appear to point to some kind of principle most could agree on, because few would recommend the following kind of practice, for example: In a C major fugue a

certain phrase in the subject repeats the tonic triad thrice: CEG CEG CEG; then the answer not only mutates the phrase but shifts it into subdominant position, e.g., GAC FAC FAC. Therefore I have written this clause to target this narrow scenario. Recall that at this point I am only discussing where "not" to introduce mutations.

[192] Notice that the leap of a third is answered with the leap of a fourth. Marpurg could have avoided this, but apparently only at the cost of changing the opening fifth to a sixth.

[193] Marpurg, *Abhandlung*, Tables, Table 26, no. 13.

[194] See the second fugal subject, in 6/4 time, of Buxtehude's Praeambulum in A minor, BuxWV 158: *Orgelwerke*, 2:25; Pachelbel, "27. Fuga," in *Denkmäler Deutscher Tonkunst*, 31; or our Ex. 13. One might add that composers appear to prefer answering a third by a fourth rather than the reverse, if one of them be necessary. Still another option, of course, is to go with norm 'a' above, minus the clause in parentheses, as Ex. 13 again illustrates. Notice that the said parenthetical is unsatisfiable in that case.

[195] "Conformity of the melody [to the subject] should always be observed towards the end rather than at the beginning. An example will clarify this." Rameau, *Traité*, 333-4, and *Treatise*, 350-1. Rameau provides several examples, almost all of which have the mutation (if any) right after the first note. The implication, though Rameau does not state it exactly this way, is that the mutation should be made as early as possible. Prout later repeats the same prescription, in fact more clearly and directly, though in the context of "key-change" theory (Prout, *Fugue*, 51, ¶121). My abbreviation "ASAP mutation" comes from the acronym "as soon as possible," as native English speakers will know.

[196] Doubtless, composers also sometimes deviate from this

norm so that they can harmonize the answer in a specific, preferred way. This category of answers would include cases in which such harmonization is dictated by the requirements of *stretto.* However, harmonization of the theme is beyond the scope of what this study can responsibly cover. It is rare (but not unheard of; more likely in minor) for a given alteration, normal in other respects, to render a theme "unharmonizable"; then it will generally be avoided.

[197] Closing the answer on the supertonic appears to have been considered an acceptable and even normal alternative when this was necessary for exact replication of intervals (i.e., avoidance of tone-semitone exchange). This would be relevant any time the subject ended with 4̂ -5̂ or 6̂ ♭-5̂ .

[198] The way I arrived at this total is as follows. I took Table 8's subject-answer patterns as a starting point. For each one, I wrote out its variant with subject-answer reversal (for example, Table 8b would become G-A answered by C-E). Then, both forms were subjected to retrograde motion (that is, Table 8b would become E-C answered by A-G). Finally, all the resulting subject-answer patterns are subjected to inversion (that is, rising thirds were written as falling sixths, and so on.) In principle, repeating this process for all of Table 8 would seem to create forty patterns, as a result of doubling the original five, thrice. However, four patterns turn out to duplicate others. I also subtracted another four in which a seventh answers an octave, which are seldom used, or in which any leap exceeds an octave.

[199] Following are the others. (1) Perhaps habits born of the "old rule" seeped over into other tonal answers so that there, too, immediate change was preferred. (2) Composers might have avoided mutating a theme near the end beause that is where the cadence usually is. (3) In early fugues, many of the

"themes," as we would call them, tended to be very short. See e.g. Walker, *Fugue in the Sixteenth Century*, 21-139, or Bullivant, *Fugue*, 33-9. This implied that mutations, if any, had to appear soon, simply because that was where the "subject" was. Perhaps then the "ASAP mutation norm" was simply a habit carried over without much thought from this earlier time.

[200] See note 147.

[201] I mean the theme as it appears in Contrapuncti I through VII. See Bach, *Kunst der Fuge*. Incidentally, despite its fame, this theme is seldom quoted in discussions of fugal answer. I suspect the reason has to do with group of faster notes (GFED) near the end of it. One can question whether they are part of the subject or rather a semi-freely imitated "codetta," in the sense used by Prout, *Fugue*, 21. If they are part of the subject, as seems to be the common view, then the subject is partially answered by means of a "tone-semitone exchange." This presents something of a conundrum to theorists, many of whom have qualms about tone-semitone exchange (e.g. Prout, *Fugue*, 61-2), and may be hesitant to admit Bach uses it repeatedly in such an important collection. It is perhaps for this reason that they seldom quote the subject in presentations concerning fugal answer. In my view, the easiest solution, as just suggested, is to treat the four notes as a codetta. There seems little doubt that there is a complete musical phrase without them. If, alternatively, they are considered as a part of the theme, then the answer-procedure may be regarded as a hybrid of key-retaining and key-changing answer, which is not extremely unusual. The procedure may make sense in a collection employing the same theme repeatedly, because the tone-semitone exchange provides an path to develop the harmony in different ways following the subject in each fugue.

[202] Higgs and Prout, among others, portray the "old rule" as

applicable only when the dominant is reached by leap. See *Fugue*, 33 (¶86), and the examples that follow. See also Higgs (an acknowledged major influence upon Prout), *Fugue,* 12-3 and Exx. 36-8. The ultimate reason why this strain of theorizing finds itself confounded, is that it aims to define exactly when an opening $\hat{1}$ and $\hat{5}$ are to be tonally answered, *without* considering compass as a criterion (see pp. 21-4)—a hopeless task. In the process theorists cast about for alternative criteria, and among others seize upon the purported need for a leap to the dominant. This is indeed a frequent feature of lead-ins, and sometimes helpful for their answers, but not a defining feature.

[203] I know of about thirty-nine fugue subjects opening similarly to our Ex. 46, including Exx. 3 and 21, dating between roughly 1650 and 1800. Twelve have real answers, a seemingly large number of exceptions—but about eight of these involve some identifiable factor that might have discouraged a tonal reply, including the convention of preserving sequences and passing tones (see pp. 67-8), and a tendency by some composers to use real answers for chorale themes to safeguard their recognizability (see Walker, *Theories*, 265-6). Also, to my recollection, every theory text that explicitly shows this kind of subject, coupling it with a suggested answer, gives a tonal answer. See Masson, *Nouveau Traité*, 106; Rameau, *Traité*, 333; Marpurg, *Abhandlung*, Tables, Table 14 no. 5 and Table 20 no. 14; Cherubini, *Treatise*, 67; and Gé-dalge, *Traité*, 36 (third row). The reverse subject-answer relationship is also normal, as in Exx. 48 and 27c.

[204] Dandrieu, *Premier Livre*, 106.

[205] De la Guerre, *Sonates*, 39. This fugue's subject is imitated first at the octave, then the fourth; it is the latter entry we quote as the "answer," for the reasons suggested in note 22.

[206] Quoted in Nalden, *Fugal Answer*, 170.
[207] Fischer, *Sämtliche Werke*, 119.
[208] Ibid., 93.
[209] Böhm, *Sämtliche Werke*, 1:50.
[210] This solution would follow the "Walther-Banister" norms (pp. 67-8) and remove the need for tone-semitone exchange. In fairness, it would create a minor-seventh leap, which was frequently avoided or even called incorrect in Fischer's time. See Brossard, *Dictionnaire*, s.v. "Settima." On the other hand Fischer is not always averse to such a leap in other cases. The fifth fugue of *Ariadne Musica* (Fischer, *Sämtliche Werke*, 91) has a minor-seventh leap near the very outset in both subject and answer.
[211] Muffat, *Denkmäler*, 58:20.
[212] Eberlin, *115 Versetten*, 17.
[213] Muffat, *32 Ricercares*, 1:36.
[214] Gédalge, *Traité,* 11.
[215] The excerpt shown does constitute the entire subject, as imitation does not extend further. Incidentally, the previous fugue in this collection opens with a major-thirteenth leap, the largest leap I have met with in a fugue subject before the nineteenth century.
[216] Horsley, *Fugue*, 88-9 has further observations about "the use of a repeated none to contract a scale passage into a smaller interval" for tonal answers, including changes in practice over time and geographies.
[217] Corrette, *Premier Livre*, 44.
[218] Krieger, *Complete Organ & Keyboard Works*, 1:37.
[219] Prout, *Fugue*, viii, 34. Gédalge concurs with Prout, though he frames it differently. He states that after the dominant has been sounded initially, then the rest of the subject must be treated as being in the tonic key—so 5̂ is answered by 2̂

—barring modulations that are made explicit by means of accidentals. See Gédalge, *Traité,* 39 or *Treatise*, 38 (¶74. Gédalge seems however to have temporarily lost sight of his precept that $\hat{5}$ as last note of the subject always signals a modulation to the V—*Traité*, 16, or *Treatise*, 13, ¶37.)

[220] As Prout acknowledges by his word “almost.”

[221] Dandrieu, *Premier Livre*, 75.

[222] See for example the middle of Exx. 52 or 39, or the end of Ex. 47.

[223] Händel, *Werke*, 25:24.

[224] Masson, *Nouveau Traité*, 104-8. Horsley calls it “the main theory book used in France before Rameau. … His rules are close to the practice of his day” (Horsley, “Masson, Charles.” In *Grove Music Online.* Oxford Music Online. Accessed April 15, 2020. https://doi.org/10.1093/gmo/9781561592630.article.18028). Lester calls the book “influential.” Lester, *Between Modes and Keys*, 23.

[225] They do appear to be somewhat newer than “old rule,” both in theory and practice. The oldest theoretical text I know of advocating similar usage is Bernhard’s *Tractatus*, 33 (c. 1660), where a pair of examples are attributed to Palestrina.

[226] “When the first part [subject] *begins* with…” (emphasis added)—Masson, *Nouveau Traité*, 104.

[227] See note 158.

[228] Because the real answer C-A requires neither use of foreign accidentals, nor a note outside the tonic triad as opening note. (Interestingly though, Masson still lists the tonal answer, C-B, as the first option.) A third clue that tonic-preservation is an objective is that beyond the motifs in our Table 9, Masson lists some simple, passing-tone expansions of them. These expansions too preserve the tonic, sometimes by employing

tone-semitone exchange which averts accidentals. See *Nouveau Traité*, 108.

[229] Ex. 60 is rather similar to the exemplar from Nivers alluded to in note 225, which in Nivers' portrayal is an optional alternative.

[230] Masson, *Nouveau Traité*, 105-8, https://books.google.com/books?id=wDdDAAAAcAAJ&newbks=1&newbks_redir=0&dq=masson+nouveau+traite+regles&source=gbs_navlinks_s .

[231] Werckmeister, *Cribrum*, 37-39. Masson's *Nouveau Traité* and Werckmeister's text are close in time: the latter was published in the year after my edition of the former (the earliest edition to which I have access), and three years after the original edition. I should add, for the sake of thoroughness, that Werckmeister characterized it as inadvisable to begin the subject itself in the manner described. Therefore, if we go strictly by his statements, his suggested answer should really be interpreted as a "least-bad" answer to a poor subject. This does not affect our conclusion. For our purpose, all that matters is what reasoning led Werckmeister to suggest the answer that he did for the subject at hand.

[232] Fétis, *Traité*, 2:53. Incidentally Fétis, while correct on the general principle, is misguided in applying it to purportedly correct Bach's fugue in F# major from Book II of "the 48." Bach rightly took a different approach there, or made an exception, for reasons that should become clearer in our classical fugue section.

[233] A subject in C major, opening B-C, "should be treated as if it started on the dominant, the roots being the same"—Gédalge, *Traité*, 56. Incidentally, the concept that a third over the "root" represents that root cannot be extended to its *fifth*, without contradicting the very premises of tonal answers. That would imply that the dominant represents the tonic, and thus should

be answered by its own dominant rather than by the tonic.
[234] Chaumont, *Pièces d'Orgue*, 5.
[235] My point is of course not that the motif is bad, only that it would not in itself be likely to trigger a tonal answer. Nor has any such rule been proposed. Such a tonal answer would also conflict with "Walther-Banister" norm 'a' on p. 67. In Bach's *Ascension* Oratorio, BWV 11, a fugue introduced during a recitative begins with the upward leap $\hat{7}$ -$\hat{3}$ in D major; this leap is answered exactly. See *Bach-Gesellschaft Ausgabe*, 2:33.
[236] Chaumont did not really have to make the second mutation, but he may have wished to preserve a fundamental-fourth-compass.
[237] See p. 67, norm 'a.'
[238] Buxtehude, *Orgelwerke*, 2:97.
[239] *Cocquiel Manuscript,* 17.
[240] This fifth-drop to $\hat{4}$ can be made apparent by recalculating the answer without the second mutation. This "weak leap" or "*debilis ille saltus*" is discussed Mattheson, *Capellmeister… translation*, 1128-9.
[241] Jullien, *Premier Livre*, 73.
[242] Muffat, *Denkmäler*, 58:22.
[243] Böhm, *Sämtliche Werke*, 1:3.
[244] According to the composer's table of ornaments, a *tremblement* or *cadence* is similar to what we would call a trill beginning on the upper note. See Jullien, *Premier Livre d'Orgue* (Paris: Henry Lesclop, n.d. [1690]) (unpaginated).
[245] Clearly I am not proposing that "precepts" were forgotten in this specific way. (It might be added that even the sort of evolution just described, in the actual repertory is limited.) Still, it is a curious coincidence that Prout's remarks in note 74 about "musty… rules of two hundred years ago" date to almost

exactly two centuries after the example under discussion. Prout's disdain seems mild, though, compared to Galeazzi's, for whom old fugal rules were downright "rancid": see Burton, "Guida e Conseguente," 129.

[246] To see why Böhm preferred to treat Ex. 68 as though it had three lead-ins, not one, all one needs to do is work out a mechanical, "by-the-book" answer, to discover that this would convert first six notes into a rising sequence rather than an exact repetition.

[247] See Bullivant, *Fugue*, 161 or Joseph Kerman, *The Art of Fugue: Bach Fugues for Keyboard, 1715-1750* (Oakland, Calif.: University of California Press, 2005), xix.

[248] Händel, *Werke*, 29:189.

[249] There are exceptions, but probably not as many as it might appear. In certain cases the subject itself goes out of the tonic key, meaning it does not technically qualify as a lead-in at all. This includes the Clavier Fugue in A quoted in Nalden, *Fugal Answer*, 114, and the chorale prelude "Nun Danket alle Gott" BWV 657, in Bach, *Orgelwerke*, 2:46. What appears to be the more usual case is illustrated in the previous BWV number, in Ibid., 38: the chorale prelude "O Lamm Gottes, unschuldig," BWV 656, though the work is fugal in only a loose sense.

[250] Prout, *Fugue*, 2. I repeat these important quotes so they will be easily at hand.

[251] Ibid., 18.

[252] Fischer, *Sämtliche Werke*, 108.

[253] "A special type of analysis had to be applied in the creation of a proper answer… It was often hard to decide if a modulation had actually taken place… [or] the exact point at which it occurred. Different decisions resulted in different answers." Horsley, *Fugue*, 84.

[254] Prout's and Gédalge's systems are nicely complementary in

this regard; much of my information comes from them. Prout focuses more strongly on the theme's inner notes, Gédalge more strongly on the outer notes. Prout's comments, largely concerning the implications of the natural or raised subdominant, are in Prout, *Fugue*, 53-4 or ¶127-129. Gédalge's remarks on first-and-last notes are in *Traité*, 14-18 or *Treatise*, 11-15 or ¶34-38. To be sure, I use their information selectively here, as I have some differences with them.

[255] Rules of the last half of the nineteenth century, Horsley opines, "can be applied quite successfully to most of the fugues of J. S. Bach and those of the Classical period" (*Fugue*, 113). Although this strikes me as too sanguine, it is basically true for unconstricted subjects, the type we are currently addressing.

[256] See Gédalge citation in note 254 and Marpurg as translated in Mann, *Study of Fugue*, 167. The following sentence is my addition, perhaps fussy, but necessary, because, e.g., not all leading tones are necessarily assumed to be in the tonic—but in closing the subject, yes. In fact this sentence has a more general role in ensuring that a stepwise close in the subject will be preserved in the answer, which is usually the case.

[257] The semitone can also be kept if both of the notes are assigned to V, so that for example 7̂ - 1̂ is answered by 3̂ - 4̂ . Contrapunctus X of Bach's *Kunst der Fuge* can be understood as doing this. But it will also be seen ahead that for some subjects, preserving this semitone at the outset was not seen as indispensable.

[258] These norms, while omitted in Prout and Gédalge, are backed up by other theorists. Regarding subjects ending on 4̂ ♮- 5̂ see Bullivant, *Fugue*, 69: "the 'half-close' on v [5̂] is, in mature Bach, answered on ii [2̂]." As for the 6̂ ♭- 5̂ endings, see Marpurg as translated in Mann, *Study of Fugue*, 172. As he states (and what can in fact be said of all these

cases), the upper-fourth answer would entail a subdominant modulation. Mattheson in *Capellmeister… translation*, 1175-7 concurs with Marpurg and takes the occasion to criticize an older kind of answer, which appears to have grown obsolete by his day, that closes with 3̂ - 1̂ .

[259] For example, 6̂ ♭ would not be the normal supertonic in the key of the dominant, but rather an altered note, 2̂ ♭. As for 4̂ ♮, see Prout, *Fugue*, 54: "the presence of the subdominant prevents our regarding the subject as being in the dominant." Regarding 4̂ # see Gédalge, *Traité*, 14, ¶14, no. 1. Returning to 6̂ ♭, I am actually unaware of any theorist who has correctly stated this norm as such, but Marpurg's comments cited in the previous note apply equally well to 6̂ ♭ as an individual note. Higgs suggests that the submediant belongs to the tonic key regardless of whether this sixth is major and minor (*Fugue,* 22); but here he overgeneralizes, because for example, in C major or C minor, the figure A♮-G may well be considered in the dominant, especially at the close, and especially in C minor (Hence Horsley's "rule" in note 263, in conflict with Higgs'—both are too broad.) Indeed, when it comes to describing what I call the "system of key-signifiers," more than one theorist has advanced invalid generalizations, so I have done some "weeding out" in addition to compiling.

[260] Prout allows for at least the possibility of this exception when he writes: "F, the subdominant of C, is answered by C ; but, as the minor seventh of G, it will be answered by B flat." (*Fugue*, 51). All I have done is to add more detail on when this alternative would be expected.

[261] Prout, *Fugue*, 31.

[262] The reason for this norm is probably that, supposing a subject closes 1̂ -5̂ , and assuming too that norm 1 on p. 101

be followed, then a real answer would end with $\hat{4}$ - $\hat{1}$ as counted in the original scale; that is, a plagal cadence in the tonic key. The ear, however, could mistake this for a half-cadence in the subdominant key, since that would use identical notes. I suspect such confusion would be greater when the figure is ascending. Accordingly, this sort of answer is usually foregone in favor of an answer closing on $\hat{5}$ - $\hat{1}$. There is no converse "rule" that authentic (full) cadences are answered by half-cadences—they are usually answered by themselves. This is already implicit in the norms as written here.

[263] "In minor, the raised sixth degree of the tonic is also used to provide the correct second degree in the dominant minor." Horsley, *Fugue*, 114. I have formulated the idea more narrowly because Horsley states it too broadly: for example, in A minor, E-F#-G#-A could well be considered to belong to the tonic key rather than the dominant.

[264] Incidentally Ex. 68 can considered either a key-retaining or key-changing answer. Only the accompanying counterpoint, if one chose to take that as a criterion, would reveal any difference, and even then minimally. In any event, as I have argued (p. 16), it is not a useful criterion.

[265] Marpurg, *Abhandlung*, Tables, Table 15 no. 3. Marpurg appears to attribute this to Johann A. Scheibe.

[266] They do in fact disagree as to this example. See Prout, *Fugue*, 18 and Bullivant, *Fugue*, 59.

[267] Mozart, *Quartet in G major*, 24. An amusing, self-serving but perhaps revealing anecdote about this has come down from the circle of Anton Reicha (1770-1836). Supposedly, a "jury" of scholars at the Paris Conservatory preferred an answer beginning D-F#-A, and "assailed" Reicha, a professor, and some of his students for advocating the one in Ex. 71. This ended with the panel's "humiliat[ion]" upon being shown Mo-

zart's work. Reicha, who felt persecuted over his unorthodox theories for years, now had a turn to gloat. It seems hard to believe that all of these unnamed panelists were unfamiliar with the quartet, but so the story goes. See Colet, *Panharmonie*, 236, Nalden, *Fugal Answer*, xi and Horsley, *Fugue*, 104ff.

[268] The "implied modulations" discussed by Prout (*Fugue*, 50) are mostly already taken into account in our theory. If one examines Prout's five examples on that page, four are explained by norm 1 on p. 101 herein. His fifth example is explainable in terms of key-retention technique—it is indeed our Ex. 34; also, its attribution to Bach has come under question since Prout's time.

[269] Marpurg, *Abhandlung*, Tables, Table 17 no. 3.

[270] Clara Schumann, *Three Preludes and Fugues*, 4.

[271] Bach, *Bach-Gesellschaft Ausgabe*, 39:32.

[272] Buxtehude, *Orgelwerke*, 2:58.

[273] Ibid., 2:10.

[274] This term is borrowed from harmonic theory, e.g., the concept Schoenberg called "neutral chords," which in modulation "mediate between the original key and the new key." Other theorists call them pivot chords or ambiguous chords. See Arnold Schoenberg, *Theory of Harmony*, trans. Roy E. Carter (Berkeley: University of California Press, 1978), 156, books.google.com.

[275] Bach, *Bach-Gesellschaft Ausgabe*, 28:25. Also quoted in Marchant, *Five Hundred,* 67 (no. 377).

[276] Ibid., 25.2:86.

[277] This revised, "key-changing" answer, of course, implies answering the initial falling sixth with a diminished fifth (an alternative Marpurg in fact provides; see note 181). This peculiar kind of answer was something of a novelty in the age of tonal harmony. One might even call it an "accidental-seeking

tonal answer" in a tongue-in-cheek way (as opposed to the earlier "accidental-avoiding tonal answer,") although clearly, obtaining an accidental per se is not its purpose. The earliest such answers, that I have seen, appear in late-seventeenth century works of Rosenmüller and Pachelbel.

[278] One reason for this might be that the first note of a subject can always be heard as a tonic or dominant, no matter what may follow. (Recall Weber's observation that the ear tends to assume the first triad in a work is the tonic. It seems fair to extrapolate the idea to unaccompanied first notes as well. See Weber, *Theory*, 1:333, ¶191.) By contrast, *within* a chromatic passage, the ear may have greater difficulty recognizing tonics or dominants, perhaps explaining the paucity of mutations in these areas.

[279] Bach, *Das Wohltemperierte… Erster*, 72.

[280] Classical-fugue norms were not developed with such tonally ambiguous subjects in mind. Nonetheless, being unable to recognize a key in such melodies, the norms would also recognize no modulation, and would thus would predict a real answer. Such an answer might be at the fourth or fifth in any direction, or the composer might prefer to adopt a less customary interval.

[281] Schumann, *Three Preludes and Fugues*, 10.

[282] Albrechtsberger, *Douze Fugues*, 8.

[283] Marchant, *Five Hundred,* 8 (No. 46).

[284] Bullivant, *Fugue*, 184.

[285] Elwart, *Contrepoint*, 81. Elwart deems this answer "faulty," but also "more melodious" than an alternative he provides, in which the second and third notes are a tone higher. "It is up to the reader's taste to decide," he writes. What bothers Elwart is, unsurprisingly, the C# (see note 119); but his "faulty" tag is itself dubious. Fugues by Bach, Beethoven and de Grigny, this last of

which Bach made a copy, also, like Ex. 88, answer 5^ -7^ #-^1 in minor with ^1 -3^ #-4^ . The Bach and de Grigny fugues even replicate the melodic intervals of Ex. 85 as far as its first five notes. In any event, only the second and third note are at issue. See Bach, Andante from Capriccio in B♭ major BWV 992, *Bach-Gesellschaft Ausgabe*, 36:191; DeGrigny, quoted in Table 1, last example; Beethoven, String Quartet op. 131, no.14, Adagio ma non troppo, in *Grand Quator* (Mainz: Schott, n.d. [1827]), 1.

[286] Bach, *Das Wohltemperierte… Erster*, 86.

[287] The extent of the key areas can be understood as marked by where the mutations occur. That, in turn, may be influenced in this case by the last sentence of norm (c) on p. 67, explaining why the mutation is deferred for some time.

[288] Buxtehude, *Orgelwerke*, 2:131. Shown here is the second answer rather than the first. The first is the same except for its octave register, and in employing the unusual device in which the melodic line switches from one voice to another (right before the last note.) Subsequent entries do not do this.

[289] Purcell, *Works for Harpsichord and Organ*, 61. I have omitted the ornaments from the answer, which are similar though not identical to those in the subject.

[290] Bach, *Bach-Gesellschaft Ausgabe*, 3:30.

[291] Nalden, *Fugal Answer*, 140.

[292] As seen, the debate basically concerns whether or not F## is in the dominant key; and by extension, whether this explains the answer. Broadly speaking, the “yes” camp includes Higgs (*Fugue*, 23), Prout (*Fugue*, 55-6) and Gédalge (*Traité*, 35, or *Treatise*, 33-4.) On the “no” side are Nalden (Ibid.), Oldroyd (*Technique and Spirit*, 91-2), Morris (*Structure of Music*, 95) and Bullivant (*Fugue*, 184). Dickinson in *Bach’s Fugal Works*, 167 does not clearly take sides but states that the tonal

adjustment is “early” for melodic reasons. Others characterize the answer itself as an exception or somehow problematic. See Richter, *Treatise on Canon and Fugue* (London: Swift & Co., 1878), 49; Marpurg, *Traité*, 15, and Tables, Table 14 no. 4; André, *Lehre der Fuge*, 35. Choron repeats Marpurg’s comments verbatim.

[293] In Rameau’s account, an answer containing $\hat{3}$ #-$\hat{4}$ simply contains “the fourth” of the key. (He had not yet invented the term subdominant. See Rameau*, Treatise*, 350, where he mentions notes marked “R” on the following page.) Mattheson on the other hand—who discusses two subject-answer pairs in which one thematic statement includes $\hat{3}$ #-$\hat{4}$ at least once—does recognize that such themes may be irregular. However, he only appears to think this is the case when the subject actually ends with $\hat{3}$ #-$\hat{4}$. Even then it is not clear that he perceives a change of key. For the first theme, he merely states that the theme “stops on the fourth of its tonic.” See *Capellmeister… translation*, 1172-3. He groups it with other themes exhibiting unusual outer notes, such as $\hat{6}$ or $\hat{2}$. In the case of a second theme for which a statement, now the answer, closes $\hat{3}$ #-$\hat{4}$, (*Capellmeister… translation*, 1179-80), he is more critical, partly because the subject too is unusual. But Mattheson, in short, only considers it an irregularity when the “strange pitch” is one of the *outer* notes (*Capellmeister… translation*, 1175), which cannot be said of Bach’s G# minor fugue. Hence for Mattheson, like Rameau, the $\hat{3}$ *# per se* is not evidence of a key-change. Early-eighteenth-century musicians were aware of leading tones and their use in modulation; yet they seem to have been less emphatic or dogmatic about the connection between the two than modern theorists. This mindset may have been a legacy of earlier times,

when leading-tone effects were unimportant for determining "mode." See e.g. Dahlhaus, *Studies*, 176-7.

[294] Bach's answer also does not leap from ^1 to ^4 , so the baroque-age scruple against this, mentioned in note 240, would not have applied. The authors who object to Bach's answer might perhaps counter that he went against the spirit of the "rule" while meeting its letter. That may be, but as the quoted examples show, in so doing he was not acting differently from other composers of his day.

[295] The term "subdominant" itself was coined only shortly after this fugue, in 1726 by Rameau according to Shirlaw. See Shirlaw, *Theory of Harmony*, 137-9 and Rameau, *Nouveau Systême* (Paris: Ballard, 1726), 38.

[296] Another case of ^3 # in a subject is the first fugue of Handel's "Messiah." (*Werke*, 45:2).

[297] Beethoven, *Beethovens Werke*, 1:3:44.

[298] Michael Haydn, *50 Kleine Orgelstücke*, 1.

[299] Prout, *Fugue*, 24-5 (¶68-9).

[300] Prout does not deny the vice-versa ever occurs, but treats it as an irregularity. See *Fugue*, 67, Ex. 'h' and related comment. Incidentally, I have even seen cases where this "loophole" is applied to *first* notes; I will stop short of calling that normal, in part because the examples seem to be only theoretical creations. One is in Marpurg, *Abhandlung*, Tables, Table 18 no. 7.

[301] Bach, *Bach-Gesellschaft Ausgabe*, 3:231.

[302] Bach, *Das Wohltemperierte… Erster*, 110.

[303] Marchant, *Five Hundred*, 67 (no. 373). I am fairly certain it is a misprint because Marchant labels this whole part of the answer as "key of dominant," which would be F major, of which E♭ is not generally considered part. Furthermore, had the answer really contained this very unusual inclusion, Marchant

would hardly have failed to remark on it, as he does with most other, far milder irregularities.

[304] Albrechtsberger, *Collected Writings*, 158.

[305] See Marchant's key-mapping of this example (Marchant, *Five Hundred*, 67, no. 373).

[306] This example has occasioned the spilling of "more ink… than if Bach had had twenty *wives*," writes Dickinson in *Bach's Fugal Works*, 166. It is true the answer has been much discussed, but my impression is that even more ink may have been spilt over that of the G# minor fugue of Book I (see note 292).

[307] Bairstow, *Counterpoint and Harmony,* 318. Similar somewhat perplexed remarks are seen in Marchant, *Five Hundred,* 66 (below Ex. 371.) But a theorist cannot easily escape the problem by dismissing the example as an exception, for the repertory offers at least three other similar subject-answer pairs. One is a fugue for lute or clavier again by Bach, quoted in Nalden, *Fugal Answer,* 151. Others are quoted in Marchant, *Five Hundred,* 55 (Ex. 317) and Ex. 38 of this paper (a key-retaining answer but similar nonetheless). This recurring subject-answer "formula" is some sense a reversal of the "Vater unser" pattern mentioned in note 150.

[308] See Bairstow, Counterpoint and Harmony, 316-17, especially ¶254-255; it will be seen that Bairstow supports the principal tenets of the "key-changing" answer theory.

[309] I would hypothesize that Bach chooses this technique when (1) there would be prominent accidentals to "avoid" in the first place; (2) it would not badly distort the theme or complicate its harmonization; and (3) there is no normal "lead-in" at the front of the subject. (A lead-in in some sense pre-empts any need for an accidental-avoiding tonal answer because it already per se helps to preserve the tonic key when tonally answered; that is

discussed in the pages ahead.) I reviewed the *Well-Tempered Clavier* with these criteria in mind, and concluded that there are about four fugues that seem like candidates for this sort of tonal answer. Two of them did receive it: B major and A major in Book I. The others, C# minor and D# minor in Book II, did not. I suspect in this context he might have preferred real answers when a tonal answer would have be been hard to harmonize, or forced the harmonization to include very quick harmonic changes.

[310] Reversions to key-retention technique sometimes affect the end as well, most characteristically in the guise of tone-semitone exchange. One example is the *Kunst der Fuge* theme, in particular the "quick" downward scale at the end (see note 201). But usually such additions can be indifferently classified as codettas, as suggested.

[311] Albrechtsberger, *Writings*, 157.

[312] See Ex. 90. Notice that the subject already reaches the key of the dominant; nonetheless, somewhat counterintuitively, Albrechtsberger appears keen to preserve the tonic key for most of the answer. He himself states (Ibid.) the tonal answer is meant to avoid a prohibited foreign key This particular answer is slightly idiosyncratic, like some others by Albrechtsberger, but the overall point applies to a fair number of fugues.

[313] Bach, *Bach-Gesellschaft Ausgabe*, 3:245. This subject is usually quoted as ending at the same point where our excerpt cuts it off (e.g. Prout, *Fugue*, 47; Marchant, *Five Hundred*, 36), though the imitation continues for several more notes. It should be observed that it is not always necessary to consider a fugue subject as including the total span of melody that is imitated. For various reasons—such as when later notes are imitated in some irregular way—theorists sometimes prefer to treat a subject as though sufficiently complete when one complete

musical phrase has been heard. Additional material may or may not be considered part of the subject, as the observer deems appropriate. See Prout, *Fugue*, 20 (¶61). This judgment, clearly, is a perogative not only of the theorist, but also of the composer, student or anyone, provided it is done musically. There are also important exceptions for which this theoretical curtailment is inappropriate. Sometimes events *late* in the subject have effects *early* in the answer, so quoting only a part would create confusion. Another exception is lead-in themes, because these end in a specific way by definition.

[314] Notably, each of the subject's two parts is very similar to subjects that *have* been composed as separate, free-standing themes—and that *did* receive the analogous answers. For a close analogue of the lead-in, see Ex. 6. With respect to the unconstricted part, see the chorus "All the Host of Heaven" from Handel's *Joshua*, in *Werke*, 17:75. A similar comparison exercise can be carried out for many combination themes.

[315] One might object to this statement by asserting that *both* parts of the theme can be analyzed using "key-change" theory. Indeed, Gédalge adopts this outlook. But there are many reasons to doubt it. First, Gédalge by taking this position is forced into logical contortions. He has to assert, implausibly, that 4̂ ♮ of the tonic scale also functions systematically as the *minor* seventh of the key of the dominant (even in the major mode. See *Traité*, 33-4, ¶63.) Meanwhile Prout, whose overall position is similar to Gédalge's, would be hard-pressed to explain why so many answers, such as Ex. 96, "disregard semitones" (a practice he characterizes as irregular) at the very outset. A second reason to disbelieve that key-change doctrine accounts for the opening tonal adjustments is that historical theorists plainly told us the opposite, with ample evidence (p. 10, note 144). A third reason is the evidence of

the ear. An opening such as ^1 - 5^ or ^1 - 3^ - 5^ simply does not sound like a change of tonal center—this is why it is called the tonic triad—and its tonal answer, too, is unlikely to be heard as the dominant key, as even Prout acknowledges (see note 38).

[316] Aldwell and Schacter, *Harmony*, 199-203.

[317] Bach, *Wohltemperierte… Erster*, 114.

[318] Oldroyd, *Technique and Spirit*, 95.

[319] Although at least two alternative answers have been proposed, I am not aware of any theorist who has clearly explained why Bach did do it his way. Higgs, however, may have come closest (*Fugue*, 26-7). André in *Lehrbuch*, 2:2:36 says the answer should have its first and fifth notes a tone higher. Prout in "Fugal Structure," 135 criticizes André's second "correction" but not the first, giving a strong impression he might agree with the first, especially considering Prout's comments in *Fugue*, 46 (¶108). Kitson in *Elements*, 21 has a different proposal: that "This is really a case in which it would have been possible" to set the entire answer at the upper fourth. He stops short of correcting Bach, but also does not address why Bach did it a different way. Joseph and Doreen Groocock in *Fugal Composition* (Westport, Conn.: Greenwood, 2003), 9; books.google.com, suggest that the second mutation is due to the character of the G as "decoration," perhaps the only time I have seen decoration cited as a factor motivating tonal answers: if anything, it is more often cited as a reason to avoid alteration. Oldroyd addresses this answer in *Technique and Spirit*, 82 and 96, but his comments seem jumbled; he expends much more space praising than explaining it. As mentioned, Higgs seems closest to the mark regarding this answer. But he is misled when he explains part of it based on a rule "that the sixth of the scale shall be answered by the sixth of the dominant"; it

happens to work in this case, but it is only generally valid when it is the minor sixth, which Higgs does not mention.

[320] Bach, *Wohltemperierte… Zweiter*, 8.

[321] Gédalge relates that students "in a competition" (thus presumably not beginners) gave three different "false" answers unlike Gounod's. See Gédalge, *Traité* or *Treatise*, 41ff. Yet Gédalge's own complicated, multi-page explication of the answer, which seems to involve some circular reasoning, does not inspire confidence that he understands it either.

[322] Händel, *Werke*, 64:2. Also quoted in Nalden, *Fugal Answer*, 172, and Prout, *Fugue*, 62. Observe that here, there is a point of disagreement between myself and Prout. He calls tone-semitone exchange "quite incorrect according to the old rules" (*Fugal Structure*, 159). I would rephrase it: "by the 'classical rules,' tone-semitone exchange is acceptable *within the lead-in*, because that is a vestige of the key-retaining answer." There is also perhaps a small difference between Bach and Handel's practice. In lead-ins, Bach seems entirely willing to create an imperfect interval by mutually answering 4̂ and 7̂—but less inclined to create the same interval by mutually answering 3̂ ♮ with 7̂ #, or other tone-semitone exchanges *specific to minor*. Why, I cannot say, but there are a number of fugues, such as Exx. 94 and 98, where the possibility presents itself and he he rejects it.

[323] We can think of these as no "license" but just normal. Further examples seem unnecessary: they have been quoted in connection with unconstricted subjects, such as Exx. 77, 87 and 26, this last of which works equally as a key-retaining or key-changing answer; and combination subjects by definition (pp. 47-8) can end in any way that unconstricted subjects can end. But if examples involving combination subjects are desired, following is one for each type of ending. 3̂ ♮ *answered*

by 7̂ ♮: Marchant, *Five Hundred*, 64 (no. 359). *The reverse:* Gédalge, *Traité*, 49 (Ex. f). 3̂ ♮ *answered by* 7̂ #: Bach, *Kunst der Fuge*, 10 (no. 4). *The reverse*: Bach, *Kunst der Fuge*, 8 (no. 3), or Purcell, Sonata no. 6, Adagio, in *Sonatas of Four Parts*, 57. 3̂ # *answered by* 7̂ #: Buxtehude, Praeludium in E minor BuxWV 142, second fugue (*Orgelwerke*, 2:43-44). *The reverse*: Fischer, Fuga VI of Praeludium III, *Blumen-strauss* (*Sämtliche Werke*, 109). Note, my *Kunst der Fuge* references assume the subject ends at the tied F—see note 201.

[324] Bach, one might recall, did not choose this subject; King Frederick the Great is said to have more or less foisted it on him (Spitta, *Bach*, 3:231-4.) A possible inference is that perhaps Bach was not really enamored of the answer's 7̂ ♮-8̂ figure, but given the subject, saw this as the only logical answer. Few other Bach fugues have this bare 7̂ ♮-8̂ , but an exception is the E minor fugue BWV 956, where the subject itself has it (*Bach-Gesellschaft Ausgabe*, 42: 200; see also note 118). In the *Musical Offering* ricercar, Bach has "solved" the problem of the unorthodox melodic progression by harmonizing the answer as though it were in G minor. This way, "7̂ ♮-8̂ " is really *heard* as 3̂ -4̂ in G minor. None of this affects the answer itself, which can still theoretically be regarded as C minor for the first three notes. This is one of those cases where, as Bullivant would say, the "harmonic tonality" contradicts the "melodic tonality" (the key attributed to a single melody, conceived as separate from surrounding harmony). See Bullivant, *Fugue*, 40. A valid question is why Bach bothered to give an "old-rule" tonal answer at all if, practically speaking, he did not intend to preserve the tonic key! One explanation might be tradition; another, that the answer's C enables the return of C minor at least as a chord, if

not as a key. A third reason may be Bullivant's concept that what matters in fugue is "melodic tonality." Our discussion on "ignoring the accompanying counterpoint" (pp. 16-20) reflects the same idea. Whatever the reason, this sort of "illogical" procedure, while not especially common, is accepted in fugue. See also note 312.

[325] Bach, *Bach-Gesellschaft Ausgabe*, 31.2:2.

[326] Ex. 9 illustrates this exception as well. Incidentally, I do not intend to suggest that Buxtehude or any other composer thought through this procedure in the same terms in which I presented it. While I would prefer to think I had arrived at the same logical process as they, this is not necessary in order for the theory to work. All it needs to do, first and foremost, is to arrive at the same answers.

[327] This example is an unusual case of a non-Bach theme that has attracted controversy. Prout labels it a subdominant answer (*Fugue*, 47) but Nalden demurs (*Fugal Answer*, 112); I think Nalden is closer to the mark. In fact this is another example in which "key-retaining" and "classical" technique lead to the same answer. The characterization of the answer as subdominant is a new instance of a conceptual error we have already discussed: an answer at the lower fifth, probably intended as an answer in the tonic scale, is mistaken for a modulation to the subdominant key. See also discussion of Ex. 86. Ex. 34 presents a similar potential logical "trap."

[328] Théodore Dubois not only instructs his readers to answer Bach's theme tonally, he ignores Bach's answer entirely. See Dubois, *Traité du Contrepoint et de Fugue* (Paris: Menestrel, 1901), 119-20.

[329] Based on an analysis of works by seventeen composers mostly from central Europe and England, whose lifetimes spanned c. 1627-1822, Nalden concludes: "This examination

revealed a remarkably consistent degree of behaviour in these composers' attitude towards the tonal answer … apart from deference to certain overriding musical considerations… in the overwhelming majority of cases a tonal answer would be given when called for." For Bach specifically he adds: "Of some one hundred and sixty subjects found inviting tonal answers all but a score or so are satisfied." Nalden, *Fugal Answer*, 22-3.

[330] One could also preserve Ex. 103's octave ambit by answering the opening leap tonally, then delaying the subsequent mutation that cancels out the first. But this would give strange effects. One would hear a major ("Picardy") tonic harmony, G major, followed by a *minor* dominant harmony, D, or (depending on the mutation point) perhaps a subdominant, C, reached via a strong perfect cadence—none of these convincing possibilities. This might be one of those cases alluded to in note 195 in which a "normative" tonal answer would be difficult to harmonize.

[331] The octave range from one subdominant to another seems not to have been considered particularly good either. I cannot recall any subjects or answers that span that octave, other than possibly in pre-tonal repertory or incidental fugues.

[332] Buxtehude, *Orgelwerke*, 2:145. Of the subject's "hinge note" is repeated, it makes little difference whether all the repeated notes, or only some of them, are counted as part of the lead-in.

[333] Marchant, *Five Hundred,* 67 (no. 375) .

[334] Stirling, *Six Fugues*, 3.

[335] Lübeck, *Orgelwerke*, 26.

[336] Nalden's *Fugal Answer* is largely devoted to the thesis that theorists have underappreciated the extent to which answers are written specifically to take into account the larger harmonic context. Although I believe Nalden overstates the thesis, and it is mainly relevant to accompanied or incidental fugues, it is

thought-provoking, and would have been addressed further in this paper had more space been available.

[337] Bach, *Bach-Gesellschaft Ausgabe*, 38:116. For a discussion of theories about this subject and answer see Nalden, *Fugal Answer*, 47ff.

[338] Dett, “The Ordering,” 45.

[339] Charpentier, *Dixit Dominus*, 10.

[340] The reason for the controversy is that there has been little or no consensus on why the answer should be tonal at all. Of most common reasons for tonal answers cited in textbooks (see Prout, *Fugue*, 67 for a nice summary), it seems safe to say none apply here. There is no early or prominent dominant note, nor any modulation. Among the theorists who have discussed this answer are Higgs, *Fugue*, 23 and Prout, *Fugue*, 56 (¶133), who argue that it is tonal because the leading tone is “felt as [the] third of the dominant,” a virtually identical phrase in both texts. Skeptics of this view include Oldroyd in *Technique and Spirit*, 90-91; Nalden in *Fugal Answer*, 146; and Bullivant in *Fugue*, 184. Despite their misgivings, my approach is close in spirit to that of Higgs and Prout. By expressing the same basic idea with the help of the “lead-in” framework I believe I have given it greater clarity and force, revealing connections among seemingly different types of fugal subjects. Paul Walker has also recently commented on this example. He observes a real answer would sound D#, whereas substituting D♮ would transform the following interval into a tritone. “Neither seems a very good option. This serves as motivation enough to go with the tonal answer that Bach chooses.” (Walker, email to author, Oct. 15, 2020). These points seem valid and concordant with my theory. The two choices that, as he suggests, may have been considered undesirable are consistent with what I would describe as an early modulation and a conspicuous tone-

semitone exchange, respectively, both effects that this study has discussed from various angles.

[341] Bach, *Wohltemperierte… Erster*, 89.

[342] Bach, J.S., *Neue Bach-Ausgabe*, 2.1:140.

[343] The reason is that—supposing the lead-in concludes with the aforementioned substitute for $\hat{1}$ or $\hat{5}$, rather than $\hat{1}$ or $\hat{5}$ itself—then it will be that much harder to find a "non-passing tonic or dominant" (see p. 70) as a suitable location for a mutation.

[344] Marpurg provides several specimens of this nature in Tables 18 and 15 of *Abhandlung.*

[345] W.A. Mozart, *Neue Mozart-Ausgabe,* Serie I, Werkgruppe 1, Abt.2/1 [*Requiem*], ed. Leopold Nowak (Kassel: Bärenreiter-Verlag, 1965), 10. (imslp.org).

[346] The answer does not attempt to preserve the octave compass of the first three bars, apparently prioritizing stepwise motion instead.

[347] Prout's theory would suggest that treating the subject's third note as the sixth of the dominant (an option recognized explicitly in *Fugue*, 51, ¶122) is by far the more straightforward choice. This would render two of his alterations unnecessary; bring the answer much closer to his "transposition" principle; clarify the contrast in key between subject and answer envisioned by his theory (p. 4); and ensure that the subject's modulation to the dominant is reflected by an opposite modulation as soon as possible following his rule (*Fugue*, 51, ¶121). Similar observations can be made with respect to the last note of the theme and its own alteration. Prout's theory of "implied modulations" (*Fugue*, 50) cannot explain these mutations either. He does not suggest cases such as this would qualify as implied modulations. If they did, then one would have to suppose the modulations are so fleeting that individual notes

are their own key areas; but nothing in harmonic theory to my recollection (including in Prout's book *Harmony*) suggests modulation works that way. It is also of interest that Prout had emphasized (*Fugue*, 36-9) that tonal answers were unnecessary for themes beginning with the notes of the tonic triad, like this one, and never affirmatively articulated why they might be wanted in this context.

[348] The present theory accounts for these mutations as follows. Numbering them from left to right: (1): Alteration for the "lead-in," in other words the old rule, in agreement with Prout. (2): Alteration for "second lead-in," or, an equally valid explanation, norm 3 on p. 101. (3) Mutation to reflect modulation from keys I to V. (4) Mutation to reflect the modulation back from V to I. (5) Norms 1 and 4b on pp. 101-2. For the record, I would have gone against the norm a little and answered the third note with C, but regrettably I have been unable to hear or see Prout's complete fugue, so this observation is tentative only.

[349] Prout's misfortune in this regard, but also his acuity in dealing with the challenge, is reflected in some of his citations. One wonders which other misattributed fugues might have lain on his desk that did not make it into the treatise, but that he was forced to expend time on. Ex. 'B' in *Fugue*, 64 is now listed as BWV Anh. 177 and attributed to Johann Christoph Bach. Ex. 'A' in *Fugue*, 66, or BWV 947, is regarded as either a spurious or early work; the answer alone would seem to support the "spurious" assessment, but either way Prout is right to list it as an exception. See note 187. In *Fugue*, 50, page bottom we find BWV 553. Prout seems slightly perplexed by the answer, which indeed would be exceptional for Bach, but which makes sense as a key-retaining answer (in fact it is this paper's Ex. 34). The work is one of the "Eight Short Preludes and Fugues" now attributed possibly to one of Bach's

pupils or Fischer: see Williams, *Organ Music of J. S. Bach*, 1:192-4. Presumably Prout examined all eight fugues; thus all told, he unknowingly contended with perhaps ten misattributed fugues, three or four of which have unorthodox answers from the perspective of either Bach's oeuvre or the entire period. For a meticulous person such as Prout, this would undoubtedly have taxed his time, and possibly misdirected him as he sought to explain all the answers.

[350] Gédalge, *Traité*, 48 (Ex. 'd').

[351] Buxtehude, *Complete Suites and Variations,* 18. The F# major fugue of WTC, Book II, takes the opposite tack and gives a real answer to a similar opening 7̂ - 8̂, for which Fétis faults him (see note 232). The Buxtehude and Bach openings can be distinguished in two ways, both of which weigh in favor of a real answer specifically for the latter. First, Bach's opening is more clearly cadential than Buxtehude's based on the criteria outlined in norm '3' on p. 101. Accordingly, following that norm's logic, one would be led to a real answer, although to be sure, this is an unusual situation in which this norm conflicts with norm '1' in the same list. The second distinction between Buxtehude's and Bach's subjects arises from the attempt to view their opening "7̂ - 8̂ " as a lead-in to be answered tonally. In Bach's case only, the sixteenth notes are arranged such that a tonal answer would either have to go against norm 'a' on p. 67, or change an *already begun* stepwise motion to conclude the lead-in, something that we have noted is rather strongly avoided (see note 152).

[352] Bach, *Bach-Gesellschaft Ausgabe*, 3:254.

[353] Quoted in Prout, *Fugue*, 58.

[354] See Buxtehude, Praeludium in E, in *Collected Works*, 15:44; Conrad Friedrich Hurlebusch, Fuga, in *Compositioni Musicali per il Cembalo*, ed. Max Seiffert (Amsterdam: G. Alsbach,

1912), 78; and Alessandro Poglietti, Ricercar Quinti Toni, in *Zwolf Ricercare*, v. 2 (Lippstadt: Kistner & Siegel, n.d. [c. 1957]), 7. Walther gives a real answer to a similar theme. See Walther, Preludio con Fuga, in *Denkmäler Deutscher Tonkunst*, 269.

[355] A topic we could not fully treat is so-called "subdominant answers." Namely, it has been suggested that, especially but not only before Bach, a significant number of answers were effectively in the key of IV. (Bullivant, *Fugue*, 66; Prout, *Fugue*, 26-9). While it would be wrong to belittle such observations, "subdominant answers" are, at least for the time period under our focus, of secondary importance. Writing in the heart of fugue's "golden age," Mattheson confirms that such answers are more the exception than the rule (*Capellmeister… translation*, 1127-30, 1148-51; barring some modal contexts where "key" interpretations might not apply anyway.) Those answers that do modulate to IV appear largely to involve themes that —following a normal *opening*, which most such answers still have—are difficult to alter so as to avert the modulation. As alluded to (e.g. p 30), closings were traditionally treated less strictly. In this sense "subdominant answers" are not unlike others we have examined that end unconventionally, say, on the supertonic. Many "subdominant answers" are not really in IV at all, though it can be hard to draw the line. The editor [John S. Curwen?] of a "Questions and Answers" column in *The Musical Herald*, Jan. 1, 1912, 27, deemed true subdominant answers "rare," framing most apparent cases as tonic-key answers to dominant-key subjects. Others can be understood as inhabiting the tonic for both statements, as in our Ex. 19a.

[356] Stirling, *Six Fugues*, 32.

[357] See notes 267 and 327.

[358] Among the authors who have perceived a certain

unpredictability in Bach's answers is Kitson, writing "Bach shows no consistency" as to whether an opening motion from tonic to dominant would be tonally answered. See Kitson, *Elements*, 18. Other theorists in the nineteenth and twentieth centuries sometimes claimed that each subject had a single correct answer. While this is a caricature of the reality, it would be fair to say that for most subjects in "classical" fugue, one or two possible answers are distinctly more likely than the others, and that by using certain defined principles, the observer can predict that result or results.