1 A Roundtrip Ticket to Hypnagogia

I wish to sing of my interior visions with the naïve candor of a child.
Claude Debussy (Vallas, 1933)

Ideas? Oh man, I got a million dreams.
Duke Ellington (Burns, K. 2001)

If there is something very fantastic, I never think, oh, that comes from me. I just think that it is very beautiful. So maybe I think it came through me.
Kaija Saariaho (Sakovoskaya, 2021)

You're almost asleep, but not quite; your mind begins to wander; it drifts not *away* from your thoughts, but deeper *into* them; a vision appears in your mind – a dream of musical images, energy, and emotion – it *feels* like there's an urgent message in this music that you must decode; the vision is new, yet strangely familiar; it's yours for the taking. You grab the dream and shake yourself awake. You've got it. You hold the music in your mind's ear while its rhythmic energy resonates in your body. Now you must decide what to do with it. This will take some work, but it's exhilarating work – scripting invisible events, shaping sounds into expressive patterns, depicting echoes: it's called *composing*.

Johannes Brahms described the vision and decision phenomenon this way:

> There is no real creating without hard work. That which you would call invention, that is to say, a thought, an idea, is simply an inspiration from above, for which I am not responsible, which is no merit of mine. Yea, it is a present, a gift, which I ought even to despise until I have made it my own by right of hard work. And there need be no hurry about that, either. It is as with the seed-corn; it germinates unconsciously and in spite of ourselves. When I, for instance, have found the first phrase of a song . . . I might shut the book there and then, go for a walk, do some other work and perhaps not think of it again for months. Nothing, however, is lost. If afterward I approach the subject again, it is sure to have taken shape; I can now begin to really work at it. (Henschel, 1907, pp. 22–23)

Brahms may have truly believed that a melody came to him as "an inspiration from above" for which he "is not responsible," and that *does* describe the feeling of a musical *vision* perfectly, as we see corroborated earlier in the quotation from an interview with Kaija Saariaho. It's not likely that Brahms would have "received" the first line of a poem or a solution to a scientific problem as an inspiration from above, because he was neither a poet nor a scientist. To receive a *musical* vision – for musical ideas to appear, seemingly unbidden – the mind must be prepared with music, music, and more music. This starts when you are a child, listening to and collecting music to be recollected, not knowing about

music but feeling it, not analyzing, but wondering. You build a mental archive in which your imagination can do research, where it can *play*. By chance, your memory grasps a melodic phrase from the archive, but the melody splits into fragments. You only have some of it in your memory – and now your imagination can put it back together in a new way. It's a bit like *kintsugi*, the Japanese art of mending broken pottery with gold. The repaired object is simultaneously old and new. It's very like the original but not the same. Brahms's First Symphony has a theme in the finale that is a fragmented and refurbished theme from Beethoven's Ninth Symphony. Much of Stravinsky's music is drawn from musical shards of other eras, reassembled and renewed with his Midas-like touch.

György Ligeti explained the visions and decisions concept in terms of impulses and images: "Layers upon layers of conscious and unconscious influences are connected together to form an organic, homogeneous whole . . . But for this to result in something new and complex, I always strive to melt these exterior impulses into my own interior images and ideas" (Steinitz, 2012, p. 129).

Memory and imagination collaborate by recycling, reforming, reinventing, and repurposing the notes that generate infinite possibilities when combined with rhythm, register, timbre, texture, and – most importantly – your lived experiences and emotions that give the music meaning, even if that meaning remains ambiguous to your conscious mind. To think musically, to make decisions, you need musical information and craft – technique – as well as sonic images. Thinking involves grouping and regrouping sonic images, as well as refining, varying, and developing those images, which demands fluency in musical vocabulary. Today, with easy access to all the music of the world from any time in history, a musician's memory is likely to be multicultural. This is historically significant. Brahms, for example, could not possibly have had a musical idea inspired by an Indian raag or by Carnatic rhythm since he had never heard that music; his mental archive was purely European. We, on the other hand, have endless possibilities of musical vocabulary and grammar at our fingertips. Perhaps composers of earlier periods could write more music because they had fewer fundamental choices vying for their attention. They did not have to make a choice regarding their cultural identity or style of music. Born into a distinctly defined musical landscape, their memories and imaginations were not distracted or tempted by the musical vocabularies and styles of other cultures. Of course, that temptation and the inevitable musical cross-fertilization did take hold in a significant way, greatly stimulated for Europeans by the Exposition Universelle of 1889 in Paris. Brahms never tasted mutter paneer, sushi, or falafel, so he never had a

craving for them or dreamt of them, and his desire for beef pilaf, herring salad, and beer were typical of his time and place. Similarly, his musical ideas were informed by Bach, Mozart, Beethoven, and Schumann, as well as Renaissance masters – the music he absorbed through listening, remembering, performing, studying, and editing.

Violinist and composer Kala Ramnath, who tweeted her recipe for mutter paneer in 2020, probably never dreams of herring salad and beer, but she receives musical visions in a way that Brahms would recognize: "I was taking my daily walk, and this line came in my head, then I kept humming, humming, humming it when I was walking. Then when I came home, I felt this is the line for this piece." When Ramnath gives advice to young musicians, she urges them to "listen to everybody in the world," noting that some phrase will stay in the mind and come out in a new, personal way (Kronos, 2016). This advice resonates with Leonard Bernstein's comment that behind the conception of a new work is "the memory of all music you've ever heard before . . . all musicians write their music in terms of all the music that preceded them" (Bernstein, 1955). As you listen to "everybody in the world" and "all the music you've ever heard," you will intuitively gravitate to the music that connects to your emotions most deeply, and that music will form the environment for your compositional efforts; it's the music that will allow you to discover your personal musical vision. I agree with Wynton Marsalis's instruction that we should be mindful of the musical traditions that sustain our creativity: "Celebrate your traditions as you innovate. As you come up with new things, always reach back. Offer everything you have all the time" (Bell, 2011).

Neuroscientist Antonio Damasio describes the process this way:

> When we relate and combine images in our minds and transform them within our creative imaginations, we produce new images that signify ideas, concrete as well as abstract; we produce symbols; and we commit to memory a good part of all the imagetic produce. As we do so, we enlarge the archive from which we will draw plenty of future mental contents. (Damasio, 2021a, p. 47)

Listen, remember, dream, think, play, revise, repeat. Visions and decisions occur in cycles.

1.1 Echoes of Dreams

> *Whatever I write is just an attempt. For us human beings nothing is ever realised as we imagine. What we do is just attempts. That's our lot. So be it.*
>
> Sofia Gubaidulina (Jeffries, 2013)

The alarm rings, you awaken suddenly from a dream, and for a moment you hold the dream's pictures, sounds, and emotions in your mind. But soon

your recollection of the dream mostly vanishes, leaving you with a fragment that alters even as you try to retain it. You try to tell the dream to your family at breakfast, but you realize that it's not right. And yet, it is still your imagination at work. The vision is patchy, but you reconstruct what you can, and then build upon it, embellishing and developing it as you search for the original. The new version you find yourself telling is an approximation, a variation, and a development. You find it is impossible to remember much of the dream, but you also discover that you cannot fully describe all the details of what you do remember. Yet this new version of the dream may be a very good story, a compelling fantasy, even if it's not quite your dream anymore. The fact of using words to convey the vision already compromises the experience of the dream. Visions and decisions become entangled, and in our effort to capture the initial vision, something new is made. "It's this thing you keep chasing. This melody. You're always looking for it. Then a bit of it comes to you, you bite a piece, and it tastes sweet. Then you go back and reach for a bit more. It's still this melody, but it's a different one now" (Duke Ellington, quoted in Cohen, 2010).

Can we find an elusive melody in a dream? Sleep researcher Robert Stickgold says this:

> Brains dream not to deliver messages, not to give answers, but to explore . . . That's what brains do when they dream. They sift through, in their own networks and in code, all of our memories, all of our ideas, through the 15 billion nerve cells and the 125 trillion connections between them – that's a thousand times more connections than there are stars in the Milky Way . . . [brains] engage in what we call Network Exploration to Understand Possibilities (NEXTUP). Why do we dream? Because it's the only mechanism our brain has for sorting through all the myriad associations it discovers in deciding which ones are potentially of value. (Stickgold, 2021)

Stickgold explains that during REM sleep our brains don't allow us to "replay actual memories," and our brains shut down logical reasoning and impulse control, while searching for "weaker associations" and "increasing the intensity of your emotional responses." This remarkable state of brain allows us to "explore, identify, and strengthen previously unnoticed associations" (Stickgold, 2021).

This is a perfect description of Debussy's musical vision, using the word *vision* in the larger sense, where new, previously unnoticed, or even purposely avoided harmonic associations were explored and "strengthened," becoming the foundation of a new musical grammar. Debussy said it this way: "I wish to write down my musical dreams in a spirit of utter self-detachment" (Vallas,

1933, p. 226). The visionary, radical modernist composer Ruth Crawford Seeger remarked at age twenty-two, "I wrote a few phrases of a symphony in my sleep the other night, heard the clarinets and oboes coming in and the violins etc." (Tick, 1997, p. 27).

It would be misleading to give the impression that all or even most composers wake up from dreams to jot down ideas. John Adams has made it clear that this is not the case for him:

> We all have an image of the composer waking up in the middle of the night and grabbing a sheet of paper and coming out with some fantastic idea. But every composer I know works basically banker's hours. It's an extremely labor-intensive profession. When I'm home working I am very hermetic, and I have a strict daily schedule. (Beard, 2018)

On the other hand, in the same interview Adams acknowledges that conscious decision-making is only part of the process: "I like to work in the twilight zone between consciousness and unconsciousness . . . A good artist has the above-board conscious technical activity going on, but there's also a subconscious world of intuition and feeling" (Beard, 2018). That twilight zone *is* available during banker's hours. In fact, it's likely that bankers, too, daydream at work, and they might find, upon snapping out of the reverie, that – while they haven't imagined a note of music – they've solved a financial problem that had been bothering them all day.

In 1911, nearly a decade before he first began to develop his "method of composing with 12 notes which are related only to one another," Arnold Schoenberg wrote to the painter Wassily Kandinsky: "Every formal procedure which aspires to traditional effects is not completely free from conscious motivation. But art belongs to the *unconscious!* One must express *oneself!* Express oneself *directly!* Not one's taste, or one's upbringing, or one's intelligence, knowledge, or skill. Not all these *acquired* characteristics, but that which is *inborn, instinctive*" (Hal-Koch, 1984, p. 23).

Leonard Bernstein was decidedly a believer in and practitioner of attentive dreaming, of trances and fantasies, and like John Adams, refers to "twilight" in his description of the vision-decision method of composing: "Mostly I compose in bed, lying down, or on a sofa, lying down . . . Many is the time my wife has walked into my studio and found me lying down and said 'Oh, I thought you were working, excuse me.'"

Bernstein goes on to say that while lying down, one's consciousness gets "hazier" until you are "at the borderland of this twilight area . . . wherein fantasies occur." Bernstein then suggests that the "trick" is to "preserve just enough consciousness and awareness and observation and objectivity to be able to watch yourself

fantasizing." Finally, he remarks, "if it is a creative vision you are having and you are still awake enough to remember it" you can then "formulate the vision into something communicable." Going further, Bernstein says, "You may not know what the first note even is going to be, but you have a vision of a totality . . . That's the greatest thing that can happen" (Bernstein, 1955).

The "twilight" that both Leonard Bernstein and John Adams refer to is known to psychologists and cognitive neuroscientists as the hypnagogic period, the state immediately before sleep. We might call it the *falling* of "falling asleep." It is in this wake–sleep boundary that there is the most consistent evidence, both anecdotal and scientific, of creativity associated with sleep, and there is a high rate of recall upon awakening, as well as a significant correlation between the content of hypnagogic visions and one's concerns and thoughts just prior to drifting off (Stickgold, 2019, pp. 143–144). So while we may be lucky and have a dream during REM sleep that happens to solve a creative problem, we can learn to use the hypnagogic period to our creative advantage, lying down like Leonard Bernstein and slipping into the hypnagogic or twilight region to get a musical vision, which would indeed feel like a gift from above, as described by Brahms, Saariaho, and many others.

How long does this twilight last? A recent neuroscience study of the hypnagogic period showed that "sleep onset is a creative sweet spot" and that while at least fifteen seconds was demonstrably valuable, one minute in the twilight zone proved to be very significant (Andrillon et al., 2021). The researchers used the term "twilight zone" to refer to the trance where creativity is enhanced. In their study, participants were given math problems "without knowing that a hidden rule would allow them to solve the problems almost instantly." Subjects were divided into three categories: those who entered the hypnagogic state, those who stayed awake, and those who were allowed to enter deeper sleep. The results of the methodical and sensibly analyzed study showed that the number of participants who discovered the hidden rule after one minute in the hypnagogic state was 2.7 times higher than the number of those in the awake group and 5.8 times higher than that of those who entered deeper sleep. So, while dreams during REM sleep support general creativity in the brain, as described earlier by Robert Stickgold, the twilight-zone trance is more effective for creative work that addresses waking concerns, such as solving a math or science problem, writing a poem, a play, a song, or a symphony.

Composers and poets are not alone in their reliance on the hypnagogic state for creative work. Thomas Edison, while thinking about a problem, would recline in a comfortable armchair, holding a spoon with two fingers over a tin plate on the floor. He then let himself drift into sleep. As soon as he entered the hypnagogic period, his now relaxed fingers would drop the spoon, which would

hit the tin plate, and he'd wake up knowing the answer to the problem he'd been considering. Nikola Tesla, Salvador Dalí, and Edgar Allan Poe had similar methods for tracking the fluid idea associations that occur in the hypnagogic state. Dropping steel balls rather than a spoon seems to have been a popular version of the stratagem (Stickgold, 2019, pp. 143–144).

Edison would have been thrilled to know about the current technological improvement and investigation of his spoon-dropping strategy: a project called Dormio that is being developed at the Massachusetts Institute of Technology. Dormio uses a sleep-stage tracking system that collects biosignals. The device, worn on the subject's hand, is able to "influence, extract information from, and extend hypnagogic microdreams for the first time" (Horowitz, n.d.). My own personal research on hypnagogic creativity – explored through a series of deepening, recurring improvisations based upon an initial improvisation – will be discussed later, in Section 1.5 focusing on my solo piano piece called *We are close to waking up when we dream that we are dreaming*.

While the one-minute trance is evidently valuable for creative dreaming, it is important to note that our sense of time is suspended during the hypnagogic trance, and that one minute might seem to us like one second or one hour, if time is felt at all. Clock time is irrelevant during creative work, trances aside. Time becomes an elusive, detached experience, floating free from external measurement – it's a rhythmic mist. In music, time *is* rhythm. So, while time may feel continuous or suspended in the twilight zone of hypnagogic *fantasias*, in order to write a *piece* of music (to grab a portion of the musical totality), we must find ways to articulate time to suit our purposes, to represent our *vision*: as pulse, as discreet rhythmic units, as pattern, as the cadence of tension and resolution, as the rate of changing elements – which include harmonic rhythm, dynamics, articulations, texture, and timbre – as well as large-scale structural proportions. All of this rhythm is conceived and perceived *emotionally*, even when it is precisely designed and meticulously calculated. As the physicist Carlo Rovelli wrote, "Perhaps the emotion of time is precisely what time *is* for us" (Rovelli, 2018, p. 201).

Composers, scientists, visual artists, choreographers, and writers have variously described the vision-and-decision process, discussed the feeling of creative fantasies, and used terms like trance, daydream, mind-wandering, attentive dreaming, twilight zone, and hypnagogic period. One of the most elegant descriptions I have read was written, not surprisingly, by the poet William Butler Yeats:

> The purpose of rhythm, it has always seemed to me, is to prolong the moment of contemplation, the moment when we are both asleep and awake, which is the one moment of creation, by hushing us with an alluring monotony, while it holds

> us waking by variety, to keep us in that state of perhaps real trance, in which the mind liberated from the pressure of the will is unfolded in symbols. (Yeats, 1900)

There are perhaps as many ways for composers to tap into that inner rhythm that prolongs contemplation, the subconscious world of intuition and feeling, as there are composers. Yes, some, like Duke Ellington, get out of bed to jot down a tune or lie in bed like Leonard Bernstein, while others, including Kala Ramnath, Mahler, Tchaikovsky, Beethoven, and Brahms, have found that long, brisk daily walks stir the imagination. Brahms recommended walking to Gustav Jenner, his only long-term composition student: "When ideas come to you, go for a walk; then you will discover that the thing you thought was a complete thought was actually only the beginning of one" (Jenner, 2009, p. 404). It turns out that Brahms gave Jenner very good advice, as current research has demonstrated. According to a study at Stanford University, "Walking opens up the free flow of ideas and it is a simple and robust solution to the goals of increasing creativity" (Oppezzo & Schwartz, 2014, pp. 1142–1152).

Through improvisation, whether on an instrument or solely in the mind, whether taking a walk or lying on a couch, we can enter an awake, attentive dream state, much like a daydream, in which new associations are created from all our memories of music, including those we think we have forgotten, and new emotionally charged musical visions appear. Without instrumental or mental improvisation and attentive dreaming, we may become excessively analytical and critical at too early a stage in the creative process, blocking the ability to tap into subconscious feelings, making it difficult for an inspiring vision to surface. But there is no one path to inspiration. As John Adams says, working "banker's hours," keeping to a strict schedule, and concentrating on detailed compositional decisions can also lead to inspired ideas. Brahms not only advised Gustav Jenner to take walks to explore his ideas, but he also told him to stick to a strict schedule:

> You must learn how to work. You must write a lot, day after day, and not think that what you are writing always has to be something significant. It is the writing itself that matters in the first place. I don't always want to see it. That's what the stove is there for. You must make many songs before a useable one emerges. (Jenner, 2009, p.405)

Brahms's advice to keep writing without continually judging whether your work is "significant" is excellent counsel. There will be time to revise and edit later, but only if you get *something* notated first.

A brilliant young violinist came to me for composition lessons because his extensive knowledge of music caused him to judge every phrase he wrote as

insignificant or inadvertently plagiarized. His memory was filled with music he had heard and played since childhood, and he regularly performed an enormous amount of repertoire from memory in his professional concerts around the world. This vast experience ironically interfered with his attempts to compose even the opening phrase of a piece. Every time he selected a few notes to begin writing, it reminded him of a piece he knew well. The conscious musical associations in his mind were too strong, further intensified by the "muscle memory" of music he practiced and performed, and so he could not use even a simple combination of a few notes without self-reproach. So, he wrote nothing at all. At the first lesson, I pointed out that the Toreador aria from Bizet's *Carmen* starts with the same four notes as *Rudolph the Red Nosed Reindeer* and that the notes for the words "had a very shiny nose" are the same as those for *Happy Birthday to You*.

As Leonard Bernstein famously pointed out in his 1959 telecast *The Infinite Variety of Music*, "Melodically and harmonically speaking, we already have at our fingertips 127,000 Googols of possible combinations." And he goes on to remind the audience that this calculation does not include counterpoint, rhythm, or timbre. (Even though we *google* every day, it is good to be reminded that the word google is derived from googol, which means 1 followed by 100 zeros.) Most composers don't think about numerical possibilities when imagining their music, but some do. That there are 479,001,600 combinations of the twelve pitch class sets (notes in the Western tempered chromatic scale) gave immense pleasure to Milton Babbitt, who constructed his own serial playground in which to revel in combinatorial creativity.

To get past the restrictions imposed on his imagination by his overactive memory for melodies, the previously mentioned violinist who would compose needed to *dream* to explore, discover, and strengthen "weaker associations" that might be of use to him as a composer. Such dreaming as happens in REM sleep, and that can also happen in awake, attentive dreaming, seems to come naturally to some people and may also be cultivated. When we improvise, mentally or on an instrument, we discover new associations among our memories of music. This strengthening of weaker, or less obvious, associations is also a form of letting go, of *forgetting*, of releasing the too-strong associations that prevent creative thinking from happening. We need to turn down the logic and turn up the emotions, knowing that, unless we are in REM sleep, both reason and emotion will be active. We can deliberately apply logic later in the working-out process, when our critical and analytical thinking can temper our previously mostly emotional decisions.

Rainer Maria Rilke wrote about the phenomenon of forgetting as necessary to creativity:

> And still it is not enough to have memories. One must be able to forget them when they are many, and one must have the great patience to wait until they come again. For it is not yet the memories themselves. Not until they have turned to blood within us, to glance, to gesture, nameless and no longer to be distinguished from ourselves – not until then can it happen that in a most rare hour the first word of a verse arises in their midst and goes forth from them. (Rilke, 1989)

This forgetting, and then the transformation and incorporation of the resonance of memories into "ourselves," from a creative point of view, forms our internal archive, and in terms of music, it suggests that *the creation of music is to some extent always about music*. Our musical visions are generated by the resonance, the echoes of music we have absorbed. You may be composing music about yearning, grief, joy, or hope and you may be inspired by real-life experiences or by visual imagery, a poem, history, or fiction, but the *musical* vocabulary must come from the music already in you, the notes and rhythms so deeply a part of you that they can freely regroup, reform, and *return* as freshly imagined visions. At the deepest level, composers are inspired by music more than by anything else.

1.2 Visions versus Decisions: *Feeling and Knowing the Difference*

It helps to know the difference between a vision and a decision, to recognize how they *feel* in the mind. The simple exercises that follow may help.

Close your eyes and imagine the following:

- *A clarinet is playing a low note quietly.*
- *The clarinet note continues, then suddenly another instrument plays a loud high note.*

Consider what just occurred in your mind. Did the clarinet tone appear as in a dream, without you seeming to manipulate the sound? Did you imagine a picture, too, or just hear the sound? Did you see a clarinet, perhaps floating in space or in darkness? Did you see someone's hands playing the clarinet? Did you see a whole person playing the instrument? If so, was the person someone you know?

When the second instrument suddenly played the loud high note, did it appear as in a dream, or did you *choose* an instrument? Did you start with one instrument and then change it, perhaps more than once? Since I did not name a particular second instrument in the prompt, you may have felt that you should select one. If so, you then made a *decision* rather than allow an image to appear.