

The Effects of Oral and Written Transmission in the Exchange of Materials between Medieval Celtic and French Literatures: A Physiological View¹

Annalee C. Rejhon

The exchange of literary materials between Celtic and French cultures in the twelfth and thirteenth centuries is characterized by a striking dichotomy: works that were transmitted orally were profoundly transformed to accommodate the needs of the receiving culture, while those transmitted in writing remained essentially static, frozen—as it were—in their vellum manuscripts.

What follows is an elaboration on this dichotomy with an attempt at explaining it in the light of the physiological phenomena that necessarily underlie it: that is, the workings of the bicameral brain as they are at present understood. I should say at the start that the work that first got me thinking along these lines was the seminal article of Frederick Turner, “Performed Being: Word Art as a Human Inheritance,” that appeared in the inaugural issue of this journal (1986, i). The present article, therefore, is, in a way, a response to that work, one that applies the general principles suggested therein to the fields of medieval Welsh and French literatures.

The Celtic material in question represents a body of mythology and literature that in the twelfth century was common to all Brittonic peoples. Welsh, Cornish, and Breton were still mutually intelligible. The works consisted primarily of the Arthurian material that had been developing in the Celtic milieu from at least the ninth century onward. Their dissemination resulted above all from 1) the interaction and intermarriage in the Welsh Marches of Welsh and Norman families who patronized

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translators and English, French, and Welsh minstrels,² and 2) the activities of bilingual Bretons, both in Brittany and on the Island of Britain.³ Many of the latter accompanied William the Conqueror to Britain and were awarded estates. Through these channels the contents of Celtic poems and tales passed, largely in oral form, into French literature to find expression in the romances of Chrétien de Troyes, Bérout, and Thomas, the lays of Marie de France, and troubadour poetry.

Many of the proper names that appear in these French and Occitan works reflect their Celtic origin, having been borrowed from Welsh, Breton, or Cornish tradition; the story-themes (to use Rachel Bromwich's term) that were associated with the names did not always accompany them, however. Rather they were most often borrowed independently, a phenomenon that occurred in transmission not only to the Continent but within the Celtic oral tradition itself.⁴ Since we are without early medieval Breton or Cornish texts, we must look to Welsh tradition for the prototypes of many Continental Arthurian figures. Some of the more illustrious names, in addition to Arthur himself, of course, are: Gwalchmai (Gauvain), Peredur (Perceval), Cai (Keu), Bedwyr (Bedoier), Gwenhwyfar (Guenievre), Esyllt (Isolt), March (Marc), Owein fab Urien (Yvain li fiz Urien), and Drystan (Tristan). The considerable phonetic transformation undergone by most of these names is witness to the fact that most if not all of them were orally transmitted.⁵

Some of the Celtic story-themes that found their way into French literature are the Hunt of the White Stag (a form of the dynastic Sovereignty myth of the Celts in which the ruler of the land mates with a goddess who represents the land itself); the Waste Land; the King Wounded through the Thighs; the Otherworld Visit (which in the French often takes the form of a quest); and the Queen's Abductions. The original corpus of narrative themes was shared among all Celtic peoples and grew out of an already distant mythology, based on pagan beliefs. Many of them came to

² As Bullock-Davies puts it (1966:18), "*Cyfarwyddiaid* [Welsh story-tellers knowledgeable in Celtic lore and mythology], latimers, and French, Welsh and English minstrels lived together in the same castles along the Welsh Marches from the time of the Conquest. They could not have failed to impart to one another something of each of their native literatures."

³ On the role of the Welsh latimer Bledri in the dissemination of Celtic material, particularly to the south of France, see Bullock-Davies 1966:10 ff., and Gallais 1967.

⁴ The information in this and the next paragraph is based on Bromwich 1983. See also Bromwich 1965.

⁵ Bromwich holds that the last two names are evidence that written transmission was occasionally involved since the obscure vowels in the name—the *o* of Owein and *y* of Drystan—are not pronounced with the Welsh values in their French forms. See Bromwich 1983:43 and 1978:480.

be associated with Arthur and his entourage; he drew into his orbit also originally independent Celtic heroes, some of whom were associated with the “Old North,” that is, those British kingdoms that in northern England and southern Scotland fell to the English by the seventh century. That Arthur was attracting such heroes already early on in Welsh tradition is demonstrated by the existence of a Welsh poem known as “Pa gur” (“What man [is the gate-keeper]?”), dated to before 1100, which provides a list of Arthur’s followers. This and other Welsh poetry, triads, and stories (in particular the native Arthurian tale of *Kulhwch and Olwen*—also dated to before 1100⁶) reflect an active and primarily oral Welsh Arthurian tradition and it was by oral transmission and mental translation that it made its way to the Continent.⁷

In contrast, the borrowing into Welsh from French, already in the twelfth century a prestige culture, appears to have been effected through clerical channels and was mostly a written and learned phenomenon; the Welsh translations of *chansons de geste*, such as the *Chanson de Roland* and the *Pèlerinage de Charlemagne*, depart rarely from the originals in any substantial way, to the point that one can, for example, glimpse the assonances of the *Chanson de Roland* in the language of its counterpart *Cân Rolant*.⁸

Let us turn to this text for a moment. I found in my edition of this work that the Welsh translation was a faithful reflection of its Old French model, its greatest variations involving condensation, particularly in the more static scenes and where the telling of an event is repeated in the Old French, as in cases of the epic technique of *laissez similaires*. Passages involving action—particularly the descriptions of individual battles—seemed to appeal most to the translator and these he rendered in all their bloodthirsty detail. His taste for the vivid is apparent now and then in a metaphoric description that is used to heighten certain moments in the narrative. Whether the source of the metaphoric embellishments is an Old French passage or whether it is rather to be ascribed to the enthusiasm of the translator inspired perhaps by his own native tradition is sometimes difficult to determine. One example of the latter appears in his description of the swiftness of horses given as a gift to Charlemagne: the ease of their gait is said to be such that not a hair stirs on the head of their riders, an expression also found in the early native tale *Kulhwch and Olwen*. But more interesting for our purposes are the few places where the translator

⁶ On the dating of *Kulhwch and Olwen*, see Knight 1983:12.

⁷ For the early Welsh poems that contain references to Arthur, see Jarman 1981.

⁸ See my edition and translation of *Cân Rolant* (1984:68). See also Rejhon 1984:27 regarding the clerical channels of transmission and 1984:25 ff. and 68 ff. on the role of clerks in the translation of the *Roland*.

seemed to be translating word for word without understanding the sense of the Old French. I found two candidates for such misunderstandings: the first was the possible misinterpretation of Anglo-Norman *umbre* “shade [of a tree]” as a kind of tree, an “*wmbyr* tree”; the second, the literal rendering of *Munjoie*, Charlemagne’s war cry, as “Mountain of Joy” or “Hill of Joy” (as in “let us shout together on the Hill of Joy”).⁹

As with the Welsh version of the *Chanson de Roland*, the Welsh *Pèlerinage de Charlemagne* parallels quite closely the Old French as it came down to us in the unique manuscript that disappeared over a century ago from the British Museum. A substantive difference such as the mixing of certain details of the description of King Hugo’s palace with those of the church of the Holy Sepulchre in Jerusalem is likely to have been due to the use of a manuscript that contained a slightly different redaction of the tale than that found in the British Museum manuscript.¹⁰

As with *Cân Rolant*, there are additions and omissions of lines in the Welsh for which it is difficult to say whether they reflect the Old French model or were the doing of the translator himself.¹¹ Some condensing of the text is apparent as well.¹² One misunderstanding on the part of the Welsh translator, however, shows just how close the Welsh text is to the Old French version. It even appears as if the Old French lines we have were the very ones the Welsh translator was reading. The lines in question tell of Bertram’s boast that he will take three shields, climb to the top of a pine tree, and “*La verrez les m’ensemble par tel vertud ferir / E voler*

⁹ See Rejhon 1984:89-91; see also SurrIDGE (1985:74-76) for “*xénismes*” (words that a translator lifts directly from his model, in this case French) found in *Ystoria Bown de Hamtwn*. This translation has been dated to the mid-thirteenth century by its editor, Watkin (1958:lix); for a critique of Watkin’s edition, see SurrIDGE 1985:77.

¹⁰ The details in question are the moon and the fishes in the sea in the description of the church in the Old French (see Aebischer 1965: ll. 126-27; all line numbers refer to this edition) that occur in the Welsh version’s description of Hu Gadarn’s (= Hugo’s) palace. See Williams 1968:189, ll. 3 ff.; all line numbers to the Welsh text refer to this edition. A detailed examination of the differences between the Welsh translation and the Old French version will appear in the edition of the Welsh version of the *Pèlerinage* that I am preparing.

¹¹ See, for example, the explanation of why Hu Gadarn plows as he does, namely, following the example of Adam, in *Ystoria* (Williams 1968:187, ll. 22-27), and Hu’s refusal to let his daughter go back to France with Oliver because it was too far away (203, ll. 14-16). Elsewhere the Welsh text omits the oath taken by Charlemagne’s Queen to the effect that she will throw herself from the highest tower in Paris to show she did not mean to disgrace him by her reference to Hugo’s superiority in wearing the crown (233; note to 180, l. 10).

¹² An example is the omission of the lines that describe the foods prepared for the final feast of Hugo and Charlemagne; the Welsh translator simply says that no owner of a tongue could describe the many and various dishes that were there (203, ll. 1 ff.; Aebischer 1965: ll. 834 ff.).

cuntremunt, si m'escrïerai si/ Que en quatre liües environ le pais / Ne remandrat en bois cerf ne daim a fuür, . . ." (ll. 595-98) ["There you will see me strike them together with such force / and [see them] fly upwards, and I will shout out such that for four leagues around / there will not remain in the wood to flee, either stag, or fallow deer . . ."]¹³ These lines, which have proved tricky for more than one Old French specialist,¹⁴ also posed problems for the Welsh translator who understood "*e voler cuntremunt*" to refer to Bertram himself rather than to the shields, the result being that he has Bertram rise up into the air (*ac a ymdyrchafaf y'r awyr* ["and I will rise into the air"]) like a bird flapping two shields together on either side of him, and putting to flight beasts and husbandmen for fear of the bird.¹⁵

Intriguingly, the Welsh *Pèlerinage* participates in both the oral and written spheres of transmission. As I have mentioned, this translation resembles quite closely the Old French version found in the British Museum manuscript; yet, as I have shown elsewhere (1987), the comic French work itself must have resulted from the oral reception, probably in Norman England, of a Celtic tale concerning the abduction of Guinevere and the rivalry between Arthur and an Otherworld king over her favors. This tale was fused with a serious *Pèlerinage* that circulated in the twelfth century and that grew out of French legends concerning Charlemagne's unhistorical trip to the East as well as Carolingian traditions regarding the Frankish emperor's rivalry with the kings of Constantinople. That Arthur as well as Charlemagne figured in popular imagination in a tale regarding a trip to the East is reflected in a twelfth-century addition to Nennius telling of Arthur's journey to Jerusalem (see Stevenson 1838:49, n. 4). The fourteenth-century compiler Jean d'Outremeuse also recounts a trip of Arthur to Antioch and Jerusalem (see Borgnet 1869:II, 214 ff.).

Turning to the Welsh versions of Chrétien de Troyes's *Yvain, ou le Chevalier au Lion*, *Erec et Enide*, and *Conte du Graal* (or *Perceval*), we see that they offer exceptions to the scheme presented at the beginning of this article, since, unlike the other Welsh works based on French models, they probably derive from the aural reception of a reading of Chrétien's romances. Chrétien, of course, had originally taken elements of his plots and many of his characters from Celtic models, probably through the intermediary of Breton. His protagonists turn up again in Welsh lore, as

¹³ I have removed a semi-colon that Aebischer placed after *cuntremunt* since I understand *si que* (ll. 596-97) to depend on *par tel vertud* (l. 595) ("with such force... that").

¹⁴ See the previous note and Aebischer's note to l. 593. See also Picherit 1984:81, note to ll. 595-96.

¹⁵ See Williams 1968:195, l. 31 to 196, l. 9. The text quoted is 196, l. 4.

proved by their presence in the Welsh triads—which is never true of the heroes of *chansons de geste* translated from the French.

Chrétien's works must have been transmitted into Welsh by a bilingual adaptor who had a prior understanding of the Celtic lore upon which the material was based. Certain names and themes—originally Celtic—would have had a rich resonance of meaning for the Welsh hearer. In fashioning the tale back into Welsh, and with no written document to keep the French version intact, the adaptor was free to modify the tale for the benefit of his own audience, focusing on those features that had a particular meaning in a Welsh milieu, and eliminating those that he perceived as lacking even an exotic interest. Examples of this phenomenon in the three Welsh romances abound. Let us consider a few.

In the final lines of the Welsh version of *Yvain, Iarlles y fynnawn* [*The Lady of the Fountain*], also known as *Owein*, the hero, Owain, is associated with a flight of ravens (*branhed*), an indication absent from the French version. The lines in question tell that Owain became Arthur's *pennteulu* or "chief of the warband," and imply that the warband consisted of Owain's ravens with whom he would be victorious wherever he would go.¹⁶ Bromwich has suggested that these ravens refer to Owain's own men since the word *bran* ["raven"] is often used in Welsh poetry to represent a warrior. Not only would *Yvain li fiz Urien* have been easily recognized by a Welsh audience as *Owain fab Urien*, the historically attested northern British hero celebrated in the poetry of the bard Taliesin (see Bromwich 1983:47 and 1978:479 ff.), but his association with ravens would have been understood as well. This rapprochement is seen elsewhere in Welsh tradition in the native Arthurian tale, *Breudwyt Ronabwy* [*The Dream of Rhonabwy*], a good part of which is concerned with the savage battle

¹⁶ The passage in question reads:

Ac Owein a trigywys yn llys Arthur o hynny allan yn pennteulu. . . . Sef oed hynny trychant cledyf Kenuerchyn a'r vranhes. Ac y'r lle yd elei Owein a hynny gantaw, goruot a wnaei.

[And Owain remained in Arthur's court from then on as chief of the warband. . . . Those were the 300 swords of the descendants of Kynuarch and the Flight of Ravens. And where Owain, and they with him, would go, he would be victorious.]

The lines quoted are from Thomson (1975:11. 817-21 [see 61-62 for notes to 1. 820]). (All line references to *Owein* are from this edition.) I follow Bromwich's interpretation (supported by Thomson's punctuation) that *teulu* "warband" is being equated here with Owain's ravens, on which see Bromwich 1978:481 and 561.

fought between Arthur's men and Owain's ravens.¹⁷

Another bit of traditional Celtic lore seems to have found its way into the beginning of the tale, but this time it causes an inconsistency. In *Yvain* we are told that after dinner the queen detains the king and he falls asleep so that he misses a tale of adventure told by Calogrenant to his entourage; in *Owein* the tale is told by Cynon (the counterpart of Calogrenant) after dinner as well, since Kei has served everyone mead and chops except the sleeping king. But when the tale is finished we have the rather incongruous information that everyone adjourns to go to dinner once again (this time with the king). The dynamics of Chrétien's complex narrative, as Tony Hunt has pointed out, require that Arthur hear the tale *after* dinner; the inconsistency of the two dinners in the Welsh—one right before and one directly after the tale-telling—may have been due in the Welsh version to the redactor wishing to follow Chrétien's version but at the same time recalling a motif that no doubt grew out of Celtic eating taboos, that is, that Arthur did not eat meat on a feast day until after he had heard a tale of adventure, hence his inclusion of yet another meal, so that Arthur might hear the tale *before* the dinner.¹⁸

In *Chwedyl Gereint vab Erbin* [*The Tale of Geraint son of Erbin*], the Welsh version of *Erec*, we see that, as in *Owein*, the protagonist Erec has been given a particularly Welsh name, Geraint, one which was borne from the sixth century onwards by several rulers of Devon, according to Bromwich (1961:465, n. 3). Interestingly the name "Erec" is of Breton origin, deriving from "Gueroc," the traditional founder of Vannes (Bromwich 1983:49).

The Welsh tale itself, while it follows fairly closely the narrative of Chrétien's *Erec*, has some startlingly Celtic traits that are absent from the French version. A particularly Celtic feature surfaces right at the start of *Gereint*: the role of the porter at Arthur's court. Not only does Chrétien include no porter in his romance, but the accompanying scene of a

¹⁷ See Richards 1948:11-18. No native Welsh tradition regarding Owain, however, gives him the epithet "Knight of the Lion" that is found in Chrétien's *Yvain*, which probably accounts for its absence in the Welsh version. Nor does the hidden name motif of Chrétien's *Yvain*, in which the epithet plays a central role, turn up in *Owein* in anything but a rudimentary way (see Rejhon 1985-86).

¹⁸ Hunt 1974:94 ff., esp. 97. On the taboo motif, Hunt refers to Reinhard (1933:182 ff.) and Cross (1952:C200-42). Another aspect of the Welsh text that shows the Welsh adaptor's fashioning the tale according to a tradition with which he and his audience are familiar is pointed out by Diverres (1981-82:155 ff.) He suggests that Chrétien's episode of the Noire Espine sisters in *Yvain* was omitted from *Owein* because the central issue of that episode involved a legal matter that would have had no meaning or resonance in Welsh society. This legal matter involves primogeniture of inheritance by two sisters, and as Diverres points out (156-59), Welsh women could not inherit a father's land before 1284 (the date of the Statute of Rhuddlan) and, even after that date, partibility was applied rather than primogeniture.

messenger arriving at Arthur's court with news of the fabulous white hart is also absent from *Erec*.¹⁹ Both texts indicate Arthur's intention to hunt the stag, however.²⁰ The description of the porter Glewlwyd Mighty Grasp as Arthur's chief porter sounds very much like the one found in *Kulhwch and Olwen* in which we learn that Glewlwyd serves Arthur on every January first, while his men perform the duty of porter the rest of the year. Likewise in *Gereint*, Glewlwyd says he performs the office only at one of the three special festivals, while his men do it the rest of the year; both texts name Penpighon and Llaesgymyn as two of these men.²¹ Glewlwyd Mighty Grasp also figures as a porter in the early "Pa gur" poem from the Black Book of Carmarthen.²²

Another example of a passage present in *Gereint*—but absent in *Erec*—that echoes the same Welsh tradition as that which is reflected in *Kulhwch* is in the section of the tale in which Gereint sets out with Enid to visit his own kingdom and his father following his marriage to her. In *Erec* we are told that the hero is accompanied by sixty knights (ll. 2240-41); in *Gereint* (col. 411, ll. 27 to col. 412, ll. 1-5) he has nineteen named companions, the majority of whom are found in *Kulhwch and Olwen*.

In *Historia Peredur vab Efwraig*, the Welsh version of Chrétien's

¹⁹ See Evans (1907) 1977:cols. 385, ll. 35 ff. (All references to *Gereint* are from this edition.) For the French text see Roques 1970:28 ff. (All references to *Erec* are from this edition.)

²⁰ The Hunt of the White Stag episode itself reveals that the adaptor of *Gereint* may have known a version of this tale in which the head of the stag is given to Enide by Arthur, for this is what occurs in the Welsh text, as opposed to Chrétien's where he simply has Arthur give Enide a kiss. Bromwich (1961:464, n. 1) believes that this detail indicates that the Welsh tale "preserves a slightly better version," no doubt because it reflects better the Celtic Sovereignty theme of which the pursuit of a magic white animal is an essential component (see 442-43, n. 4). The giving of the head to Enide may well reflect an equation of the white stag with Enid; both stag and woman reflect Sovereignty, the figure that the ruler, Arthur, or perhaps originally Erec, must dominate in order to rule the land. Bromwich suggests that in an earlier version Enide herself was the prize to be won by Erec from the hunt (464).

²¹ See Evans (1907) 1977:col. 385, ll. 35-42 to col. 386, ll. 1-8; for the text of *Kulhwch and Olwen* see col. 456, ll. 112. Like *Gereint*, *Owein* also mentions the role of Glewlwyd Mighty Grasp as someone who acts as Arthur's porter (see Thomson 1975:1, ll. 4 ff.). This information is absent in Chrétien's version of the tale. (See note 22 below.) Interestingly, a detail that *Gereint* (col. 389, ll. 10-12) and *Kulhwch* (col. 455, ll. 28-30) share is that each hero wears a purple mantle with four golden knobs at the corners; this detail is absent from Chrétien's description of Erec (ll. 94 ff.). Arthur's own mantle in *Breudwyt Ronabwy* is described too as having such a knob at each corner (see Richards 1948:11, ll. 16-17).

²² See Roberts' edition of the poem (1978:300-2). For a discussion of the role of porter in the "Pa Gur" poem and in *Owein*, see 298-99.

Perceval, we have once again a particularly Welsh hero. The French name “Perceval” was apparently an approximation—influenced by folk etymology—of the Welsh “Peredur,” but while Chrétien’s version simply refers to him as “li Gallois,” the Welsh adaptor saw fit to emphasize that he was from the north of Britain—the “Old North” referred to previously—so he is called Peredur vab Efracw *o’r Gogled* [Peredur son of Efracw *of the North*] (see Goetinck 1976:7, l. 1 and 8, l. 8, and Bromwich 1978:490), recalling perhaps the Peredur mentioned as one of the warriors in the tenth-century poem *Y Gododdin*.²³

As for the narrative of *Peredur* itself, it closely resembles that of Chrétien’s *Perceval* in only the first and last parts of the tale.²⁴ The two middle sections—absent in *Perceval*—contain much that has a native Celtic flavor. The first of these middle sections has been characterized by I.C. Lovecy as “a series of tales—perhaps not originally told of Peredur—which have been attracted into a tale of a major hero, just as other tales became attached to Arthur, and independent heroes were brought into his court.” (I have shown elsewhere [1985-86] that this part of the tale was also influenced by a reminiscence of Chrétien’s *Yvain*.) Lovecy also proposes that the second of the middle sections was originally a Celtic Sovereignty tale; he finds that this section as it stands now “seems more an abbreviated (or perhaps more Celtic) telling of much the same tale [as that told in the first and last parts of *Peredur*]” (141). He singles out a particularly Celtic element in this section, a fight perpetuated by a cauldron of regeneration.²⁵

The question inevitably arises as to why there is such a difference in the nature of the output of the variously received materials: why are the orally received tales so profoundly changed by the receiving culture while the written material is not? To approach an answer, let us consider the individual body that is the medium of reception—and more specifically, the mind, assuming, of course, that the physiological workings of the human brain have not undergone appreciable evolution in the last eight centuries.

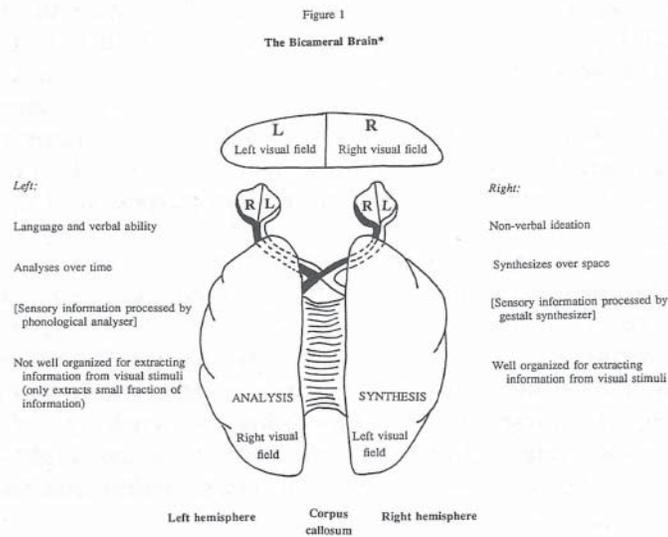
Research on the biology of the brain has revealed that there are two

²³ Bromwich 1978:488 ff. She indicates (488) that the name Peredur belonged to one or more northern British heroes and suggests that behind the tale of *Peredur* lies a faint recollection of dynastic traditions concerning a ruler of one of the small British kingdoms of Yorkshire (*Efracw* means “York”) who ruled sometime before the late fifth-century battle of Catraeth, made famous by the *Gododdin* poem (490). For the dating of the *Gododdin*, see Sweetser 1985:505-7.

²⁴ In speaking of the first and last parts of *Peredur* I am following Thurneysen’s quadripartite division of that tale, for which see his review (1912:185-89) of Williams 1909; see also Lovecy 1977-78:139-40.

²⁵ Lovecy 1977-78:141-42. For the cauldron of regeneration, see Thomson (1976:xxxii-xxxiii, 11. 139 ff. and 11. 375 ff.)

modes of information processing, each specific to one or the other of the two hemispheres that make up the neocortex of the brain: the left hemisphere governs language and verbal ability and analyses over time; the right hemisphere governs non-verbal ideation and synthesizes over space (Levy 1973:177 and 1974:167; Sperry 1970:129). To paraphrase the conclusions regarding the brain's lateral specialization drawn by Jerre Levy, an authority in this field of research, sensory input is processed in images in the right brain by means of a gestalt synthesizer, whereas it is processed in linguistic form in the left brain by means of a phonological analyzer (Levy 1974:167). The left hemisphere, which governs the right hand as well as the whole right side of the body, is generally agreed to be the dominant hemisphere in humankind; the right hemisphere, which governs the left hand and left side of the body, is the weaker of the two. Complex and abstract mental functions result from both working together exchanging information through the corpus callosum, the main body that connects them.²⁶ (See figure 1.)



*Based on Levy (1973:163 and 177), Levy (1974:167), and on Sperry (1970:129).

Frederick Turner has proposed that the rhythmic language of oral performance elicits a particular kind of cooperation of the left and right brains. Rhythm—and particularly a variation from rhythm—produces for the right brain a gestalt-like message which, since it is not linguistic, is

²⁶ Sperry 1970:133 ff. The anterior commissure and the hippocampal commissure are the more minor bodies that connect the two hemispheres, on which see Sagan 1977:159.

inaccessible to the left brain (see Turner 1986:78). Essential to the successful cooperation of the left and right brains in the perception of narratives is plot, since it unites the left brain's capacity for dealing with large units of time with the right brain's pattern recognition capacity (80). Moreover, the limbic system, that part of the forebrain that is between the more primitive reptilian complex and the later evolved neocortex, is triggered at the same time, causing it to send neurochemical rewards, or endorphins, to the cerebral cortex (74, 81). The whole process apparently works by allowing the self to identify with the plot's characters, to empathize with their described experiences; put another way, the limbic system sends out signals to the brain that result in emotions and sensations that reflect the organism's relation to its perceived environment.²⁷ Thus "plot," whether in a tale or poem, can be said to have a role in cortical world-construction and the limbic rewards associated with it.²⁸ Turner believes (76) that oral performance is itself a cosmogenetic activity, one that is vital perhaps in maintaining the human world-construct. By oral performance he is specifically referring to the delivery of metered poetry by the voice, and what we have in the transferring of oral material from Celtic to French and vice-versa is primarily, as will be discussed shortly, just that. Turner, in collaboration with Ernst Pöppel (1983:296), maintains that all speakers of orally delivered material will pause for a few milliseconds at regular intervals about every three seconds to consider the syntax and lexicon of what is to be uttered in the following three seconds; the listener participates with a similar pause (not necessarily in synchronization with the speaker) in which he stops listening and processes what he has heard. This three-second pause constitutes what Turner and Pöppel call a brain "pulse," one that allows the gathering and organization of all kinds of information, not just auditory, but visual, tactile, and so on, into a bundle to be sent to the cortex.²⁹

Both sides of the brain are necessary for understanding, whether information is transmitted orally or through a written medium. Since a

²⁷ Turner (1986:81) suggests that the self is "the governing subset of mental relations, including a set of symbols reflexively representative of that subset," and that this self-subset is integrated with those of the characters of a story who have their own "smaller subsets with their own symbol clusters."

²⁸ For "world-construction" Turner (76) uses the term *Umwelt*, by which he means that working relationship that an organism has with its environment that allows it to make predictions that govern its actions in that environment, and he sees the human *Umwelt* as more learned than inherited.

²⁹ 1983:297-98. They suggest that this three-second pulse universally determines the master rhythm of human poetic meter (301) and that because metered language contains a steady repetition of sounds, in tune with the auditory brain pulse, this kind of language is heard in "stereo" mode (affecting the verbal capacities of the left brain and the rhythmic receptivity of the right brain) whereas unmetred prose is heard only in "mono."

written tale is by definition a linguistic phenomenon, the left brain naturally is very much involved in both its reading and writing. But I would argue that the right brain participates more significantly in the perception and execution of the written word while the left or verbal brain dominates in the case of orally transmitted information. In the latter instance, the rhythmic driving language of oral transmission together with the images of the performance itself (the body language of the performer and his delivery are bound to convey a particular interpretation to the hearer) do engage the right brain, particularly since the right brain's neural patterns are well organized for extracting information from visual stimuli (see Levy 1974:167), but the predominantly verbal aspect of the whole exercise argues for a left brain hegemony. The writing and reading of a written text, generally considered to be a left brain activity, involves also, however, the ability to perceive and decode the written word which is essentially the spatial representation of an idea on vellum or paper (or computer screen, for that matter), which indicates significant right brain activity. Levy has pointed out that the left brain's neural organization is such that its visual synthetic processes "extract only a small fraction of the information contained in a visual stimulus" (*idem*). As for the generation of language, the right brain is not verbal; it is the left that is considered to be the "speaking brain" (see Sperry 1970:126). Yet that writing can be initiated by the right side of the brain has been shown in experiments performed by R. W. Sperry and collaborators on commissurotomy patients, persons in whom the forebrain commissures have been surgically cut, and in whom communication between the left and right hemispheres has been blocked. One of these experiments demonstrates that if a printed word is shown to the right hemisphere via the left visual field, the patient can manage to write blindly in script with his left hand what he has seen, but since the left hemisphere, into which information enters via the right visual field, did not see it, he cannot verbalize what it is he saw (see Sagan 1977:162-63 and Nebes and Sperry 1971:254 ff.). The right brain's participation in reading and writing is not compromised, it seems to me, by the addition of speaking aloud or internally words that are read, as was apparently the practice of medieval scribes, since the word has to be read off the parchment in the first place.³⁰

Aural reception of a "read" text would work for the hearer exactly the way it does for any oral performance: that is, there would be left brain dominance. As occurs in the hearing of an orally improvised performance, the information would be gathered in bundles at three-second intervals, according to Turner's model, and sent to the cortex where it would encounter the information already stored there that makes up the cultural resonances of the hearer's own world-construct. The new information

³⁰ On the muttering aloud of medieval readers, see Chaytor 1945:19.

would be absorbed and integrated into the construct and retained in memory by means of plot, which serves as an organizing device in much the same way as Renaissance rhetoricians used spatial metaphors to keep track of the sequence of topics in speeches, conceiving of them as, for example, a succession of rooms in a house. This process involves the right brain's spatial dominance combined with the left brain's verbal dominance and capacity to deal with large units of time (see Turner 1986:79 ff.).

The type of reception that was involved in the passing of Chrétien's romances into Welsh literature would have followed this model. The fact that the French romances are composed in verse enhanced the memorability of the text through poetic rhythm, while at the same time the plot aided the hearer further in organizing and recalling the material. The romances would not only have been interesting to the bilingual Welsh/French listener in their own right—the “driving” mechanism of the poetry furthering engagement of the affective midbrain (see Turner 1986: 80)—but they would have touched off those cultural resonances stored in the cortex and originating from his first-hand experience of the Celtic material mirrored in the French romances.

In reproducing this remembered material, the Welsh transmitter would naturally reflect his own world-construct in the new rendering, generating changes in the narrative, as we have seen, that can be either minor or substantive. He would not so much be translating remembered words and sentences from the foreign language as rendering or communicating ideas in his native language—certainly a verbal and linguistic left brain activity.

The same may be said for the effect of the translation of the orally heard Celtic material into French. The world-construct of the bilingual French/Welsh or French/Breton redactors certainly had its influence on the Celtic poems and tales that were being received into French, as witness the transformations undergone by the Celtic plot-themes and names when they entered the world of French cultural concerns. (The evolution of the comic *Pèlerinage*, discussed earlier, is one example of this phenomenon.) The originally Celtic material may be seen to undergo major transformation in French—perhaps even to a greater extent than Chrétien's romances were modified when passing into Welsh—because, unlike the romances, the Celtic material had no cultural resonances in the receiving French culture. But it did have novelty, which appeals to the habituated tendency of the human nervous system—that is, its tendency to respond more readily to the new and unexpected (see Turner and Pöppel 1983:278-79 and 303). The enormous change effected in the orally received foreign material may also reflect the “procrustean” tendency of the brain's human information processing which, according to Turner and Pöppel, “reduces the information it gets from the outside world to its own categories, and

accepts reality's answers only if they directly address its own set of questions" (278). The questions asked must be determined by the brain's own world-construct.

The brain's procrustean impulses would tend, I think, to cause change in any received material, were it transmitted orally or in writing. But a fundamental difference in the nature of the regenerated materials hinges on the role of memory. The imposition of the hearer's world-construct on the material he has heard is much greater when he must rely on his mind's ability — great though it may be — to retrieve this material by means of a plot line, than for the reader of the written word where long-term memory of the material plays a relatively minor part, the reader/translator having access at every moment to the written page.³¹ If translation is done word for word without understanding, errors such as we have seen in *Cân Rolant's* "wmbyr tree" and "Hill of Joy" can creep in, but aside from determined attempts to condense material, most change from the original would be effected when a translation is being produced "sense for sense," as the medieval Welsh translator Gruffydd Bola termed it.³² On the whole, however, as I believe I have made clear, relatively little is changed in the translation of written material compared to that received orally. One reason for the relative closeness of the Welsh translations of *chansons de geste* to their originals may lie precisely in the lack of a performance: that is to say, there is no visual gestalt, no storyteller or poet to nuance the words with gesture or facial expressions, no interpretation to be encoded by the right brain to influence the reworking of the material.

But what is going on in the brain's act of "remembering," or processing the material through memory? Perhaps the answer lies in the fact that the left hemisphere is essentially designed for analysis while the right is more apt for synthesizing (Levy 1973:161-63). Information that enters the brain aurally, as in the case of the Celtic poems and tales that came into French and the Chrétien material that came into Welsh, was processed predominantly through the left hemisphere, optimally skilled at analysis or breaking up the whole of the material into its component parts; it could not help but be radically changed as it was regenerated, particularly since it was being sifted through the world-construct reflected in the other language. The information received via writing, such as the *chansons de geste* that were translated into Welsh, would have required little or no long-term memory, but would have been subjected to the right hemisphere's neural predisposition for synthesis—a tendency to take

³¹ This is so even though Chaytor (1945:19) speaks of an auditory rather than visual memory of the read word on the part of medieval copyists.

³² For Gruffydd Bola's own words see Williams 1966:67, n. 7.

separate elements and form from them a coherent whole. There would be an inclination in the reception of a written text to maintain the integrity of the whole, even though a certain amount of change would result from the necessity to translate sense for sense, which is a linguistic breaking up of sorts to make an idea in one language accessible in another. This sort of change is minimal, however, when compared to that undergone by the material received aurally.

In conclusion, I have applied these speculations about the role of the bicameral brain, which are naturally part of a general phenomenon—the transmission of narrative materials—to cross-linguistic and cross-cultural transmission and to the Welsh-French situation in particular since that is my own field of interest. This situation, however, can be seen as a case in point, the wider ramification being that the amount of change undergone by medieval narrative in general when it is translated into another culture may be assigned to the ways in which the brain receives it and regenerates the tales for the new cultural milieu.

University of California, Berkeley

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